

Pivot for Progress



ANNUAL REPORT 2018

CORPORATE SOCIAL RESPONSIBILITY

Administration

Biocon Foundation is managed by a Board of Trustees:

Dr Kiran Mazumdar-Shaw,
Founder and Managing Trustee

Dr John Shaw, Trustee

Biocon Foundation, their 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 Harney**, 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

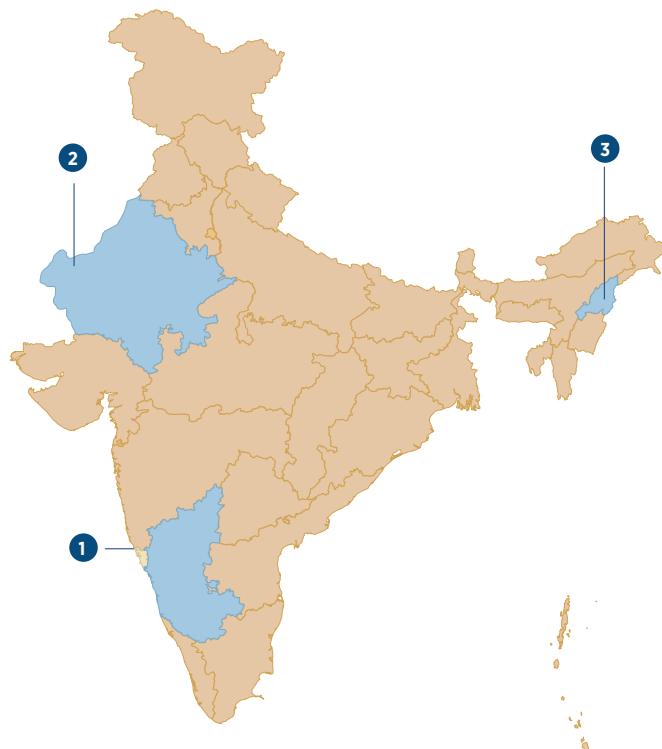
Biocon Foundation is a registered trust under the Indian Trusts Act of 1882.

Registration number IV410/06-07 dated August 09, 2006.

The trust is recognised under Section 80G of the Income Tax Act 1961.

Registration under Foreign Contribution (Regulation) Act, 1976 on application dated January 18, 2011.

Our Reach



1 | **Karnataka**
8 Districts

2 | **Rajasthan**
3 Districts

3 | **Nagaland**
1 District

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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.

Strategic Objectives

- ❖ Vitalize preventive and primary healthcare
- ❖ Mitigate hunger, poverty and malnutrition
- ❖ Provide safe drinking water, sanitation and hygiene
- ❖ Empower communities through equitable educational opportunities
- ❖ Ensure the protection of the environment and natural resources
- ❖ Augment essential rural resources
- ❖ Reduce inequalities and empower the marginalized
- ❖ Conserve traditional art, culture and sites of national importance
- ❖ Support projects that create and nurture science and technology
- ❖ Facilitate the development of sports
- ❖ Contribute to welfare funds with statutory approval

A Message from Dr. Kiran Mazumdar-Shaw



Dear Stakeholders,

Marching to the drum beat of economic progress sometimes results in the sidelining of societal challenges; recognising this, governments of the world came together to find solutions to reverse this tendency by adopting the Sustainable Development Goals (SDGs) set by the United Nations to change human condition in the world by 2030. The vision to end poverty, halt climate change and give equal opportunities has its share of sceptics, but is achievable if governments prioritize their objectives, innovate and do things differently. India has demonstrated this by being the first country in the world to make Corporate Social Responsibility (CSR) mandatory. CSR regulations align with SDGs and catalyse social, economic and environmental development. Accordingly, Biocon Foundation is committed to making a difference by aligning programs with the SDGs.

The past year will go down as an inflection point at Biocon Foundation with the implementation of innovative programs and critical change management processes. The theme for the year's report, *Pivot for Progress*, reflects the bold strides taken in uncharted territories and the prudent decisions taken to either persevere or pivot with respect to existing programs. New programs in environmental sustainability and healthcare were launched during the year. Existing programs and processes were critically reviewed to initiate course corrections in order to broaden the beneficiary base and ensure greater convergence with government initiatives. Operational and monitoring challenges were simultaneously identified and addressed in real time.

The new agenda is a promise by leaders to all people everywhere. It is an agenda for people, to end poverty in all of its forms—an agenda for the planet, our common home.

United Nations Secretary General Ban Ki-Moon, commenting on the 2030 Agenda for Sustainable Development
Adopted in September 2015.

Between the glimmer of an idea and progressive social intervention lies the need for efficient design, perseverance and assiduous monitoring. The year under review witnessed strong and determined efforts to come up with structured interventions in primary healthcare, education, rural development and environmental sustainability, to address crucial national and state level developmental challenges.

HEALTHCARE

The eLAI Smart Clinic platform developed in-house, delivers evidence-based primary healthcare to communities with poor access to quality healthcare. The independent operation of eLAI Smart Clinics was evaluated to appreciably increase the reach and optimally utilise the diagnostic laboratories set up at these clinics. At the close of the year, 21 eLAI Smart Clinics were in independent operation and as part of government Primary Health Centres in Karnataka and Rajasthan, catering to a population of over one million. In addition to establishing proof of concept in these e-enabled clinics, we have collaborated with governmental agencies in Karnataka and Rajasthan to provide technical support for successful implementation of the electronic health record systems that they have established.

In response to the increasing number of cases of non-communicable diseases (NCDs) in the communities in which we serve, we have added impetus to the NCD programs across our clinics. The Oral Cancer Screening program is a pioneer in its segment. With a larger canvas in which to deliver impact, the program is set for pan-India coverage with special emphasis on the North East Region. Biocon Foundation will implement programs under the direction of an independent, multidisciplinary task force that is comprised of experts in the field, constituted to downstage oral cancer over the next decade.



Camps to Screen for Breast and Cervical Cancers were redesigned to be holistic *Well Woman* clinics. Child health and nutrition were addressed through *Well Baby* clinics. Diabetes management clinics were enhanced to include screening for diabetic retinopathy and monitoring of foot care.

In collaboration with the Department of Community Health, St John's Medical College & Hospital, the Foundation launched new programs for Geriatric Care, Mental Health and School Health. To provide comprehensive care, the School Health program integrated nutrition, adolescent girls' health and WASH programs.

EDUCATION

The *Chinnara Ganitha* math program, now in its twelfth year, resulted in the distribution of over one lakh math workbooks across about one thousand government schools in Karnataka. A strategic pivot in the program was the targeted distribution of books to Bengaluru urban government schools in partnership with the Bangalore Political Action Committee (BPAC). This change resulted in greater effectiveness as well as valuable feedback from their resource persons.

The *Aata Paata Wadi* after-school enrichment program in Kodagu, which was thus far restricted to day students of government schools of Standards 5 and 6, was relocated to the Ashrama Residential School run by the Social Welfare Department in Kodagu, and now caters to a larger number of children across Standards 1 to 7.





RURAL DEVELOPMENT

Unbridled growth and lapses in regulatory mechanisms have resulted in the rapid loss and deterioration of the wetlands in and around Bengaluru. With the looming threat of running out of drinking water, it has become imperative to preserve what remains of the natural lakes. Under the leadership of Wg Cdr (Retd) G B Athri, the Biocon Central Engineering and Environment, Health & Safety teams collaborated and undertook the herculean task of the rejuvenation of the Hebbagodi lake. Their resourceful, multipronged strategy to use bioremediation, floating islands and aerators have yielded spectacular results. The learnings from this initial endeavour are being incorporated in the resuscitation of the Yarandahalli lake. Measures were taken to protect the lakes by engaging with local authorities and the community to monitor and preserve the area. A children's park in Hebbagodi, with gardens and play equipment has completed the transformation of the area into a clean, green space.

The Foundation provided infrastructure by way of classrooms to government schools and junior colleges. A new project undertaken was to construct a sub-road to connect Kyalasanahalli village to Jigani TMC, which will increase employment opportunities and provide access to better amenities to the rural population around and along this route.

ACKNOWLEDGEMENT

In summary, Biocon Foundation has worked to establish best practices within the CSR regulatory framework to keep abreast of national and state level programs specific to each vertical by dynamic needs analysis and target setting, as well as through rigorous design of programs and implementation strategy.

Key partnerships with and continuing support from government agencies and committed and reliable partners with strong sectorial understanding have added to the results evidenced during the year. I place on record our appreciation and gratitude to the Governments of Karnataka and Rajasthan, our partners and collaborators and all our stakeholders.

Biocon Foundation will continue to act as a bridge between the goals set by the government and the needs of the underserved communities, and thereby aid and support the fulfilment of some of the target points defined as part of the UN Sustainable Development Goals.

With best wishes,

Kiran Mazumdar-Shaw
Founder & Managing Trustee
Bengaluru, May 30, 2018



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.



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.



CSR as a combination of mature legislation, responsible corporate policy and innovative implementation strategies has catalysed the achievement of tenable societal and environmental targets.

THEMATIC AREAS OF INTERVENTION



HEALTHCARE



EDUCATION



RURAL
DEVELOPMENT



GRANT-
IN-AID



ರಜ್ಯಾಧಿಕರಣ ಸರ್ಕಾರ
ಜಾಲ್ಕಿ ಹಂಡಾವಂತ, ವಾರ್ಷಿಕೆಗಳು



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HEALTHCARE

Vitalising disease
prevention & management

eLAJ SMART CLINICS

Baseline

The healthcare landscape in India has changed dramatically due to the steady rise of lifestyle diseases and malnutrition leading to premature death. These deaths are otherwise preventable, provided that the first line of defence, namely Primary Health Centres (PHCs), are efficient and provide health services of a minimum assured quality at an affordable cost.

A data-driven approach to primary healthcare delivery is an essential cornerstone of the quality process. Regrettably, the first tier of the Indian health system is glaringly deficient in this aspect, due to the lack of an inclusive, robust and ubiquitous health information system to provide data-driven insight and support to care providers in real-time. It is therefore vital to address the issue of non-availability of healthcare information and patient data across PHCs, and more particularly at the sub-district levels within a state.

The revitalisation of primary care in this dimension will be crucial to improve the performance and sustainability of healthcare systems, and to move towards the achievement of targets set by SDG 3 to "ensure healthy lives and promote wellbeing for all at all ages". The availability of patient and healthcare data will also have a far-reaching impact on most of the other SDGs as well.

Stakeholders

The National Health Policy emphasizes the promotion of public private partnership (PPP) models to harness the investment and expertise of the private sector. Biocon Foundation has experience of the immense potential of scalability and replicability of PPP and believes that this tested solution, if mainstreamed into the primary healthcare system of the Government will yield robust results. Therefore, the Biocon Foundation eLAJ Smart Clinics have been embedded in government PHCs on a strong footing of public private partnerships to better serve these underserved communities. The Foundation has established and built partnerships with the Department of Health & Family Welfare of the Government of Karnataka (GoK) and the Government of Rajasthan (GoR) to address the critical gaps in the area of primary healthcare. These cross-sectorial collaborations are aligned with SDG 17 as they have the potential to dramatically multiply the health impact.



Intervention

The Foundation has continually invested in ICT-enabled process innovations in order to build sustainable primary healthcare systems. The eLAJ Smart Clinic platform that was developed in-house, is designed to meet this need. This platform captures and securely stores electronic patient records to enable the practice of evidence-based precision medicine and ensure quality improvement in dispensing targeted, need-based care to the patient. The eLAJ real-time dashboard provides a macro-level perspective of clinical and administrative data as also an insight into the performance of the health centre. This software application has experienced a positive acceptance by healthcare providers at all levels. Both medical professionals and patients appreciate the benefits of recording vital parameters, the maintenance of electronic records, and the seamless integration of the diagnostic laboratory into the workflow. The eLAJ integrated eHealth platform has ensured that the patient receives a continuing and consistent level of care.



(a) Partnership with Government of Rajasthan

In 2015, Biocon Foundation adopted 5 PHCs and 32 associated Sub Centres in order to improve the delivery of services in Jaipur, Sawai Madhopur and Jhalawar districts. The Foundation mobilized its capacity to design, deliver, operate, maintain and finance the adopted PHCs as part of its CSR initiative. A health system strengthening approach was adopted to provide infrastructure, manpower, equipment, medical products and other facilities as per Indian Public Health Standards. A robust health information system was installed in all the centres to allow the practice of evidence-based care. The Foundation implemented all healthcare policies and programmes of the Government through these PHCs.

In August 2017, GoR declared the PHCs at Jhalawar as *Adarsh PHCs* (Model PHCs) and the ownership of these upgraded PHCs was transferred to the Government. In this process, the Foundation donated and transferred all the equipment, furniture & fixtures and the developed infrastructure in the PHCs to the Government. The Foundation continued to manage full-scale operations in the remaining three PHCs till March 2018. With the expiry of the existing memorandum of understanding (MoU), a new MoU has been signed between Biocon Foundation and GoR which allows the Foundation to provide services in terms of electronic capturing of patient records and diagnostics services.

Services delivered through PHCs in Rajasthan (April 2017 to March 2018)

Indicators	Statistics
Coverage of population	1,40,000
eLAI registrations	19,000
Outpatient visits	70,000
Inpatient admissions	3,500
No. of deliveries	330
No. of PMSMA camps	50
PMSMA camp footfall	4,400
Patients aged ≥ 30 years opportunistically screened for high BP (SBP ≥130 mmHg and/or DBP ≥80 mmHg) at least once	96%
Patients aged ≥ 30 years opportunistically screened for hyperglycaemia (RBS ≥ 180 mg/dl) at least once	25%
Episodes of high BP (SBP ≥130 mmHg and/or DBP ≥80 mmHg)	30%
Episodes of hyperglycaemia (RBS ≥ 180 mg/dl)	17%
Prevalence of overweight (BMI ≥23 kg/m ²)	43%
Prevalence of underweight (BMI <18 kg/m ²)	12%
Episodes of anaemia by Hb level	71%

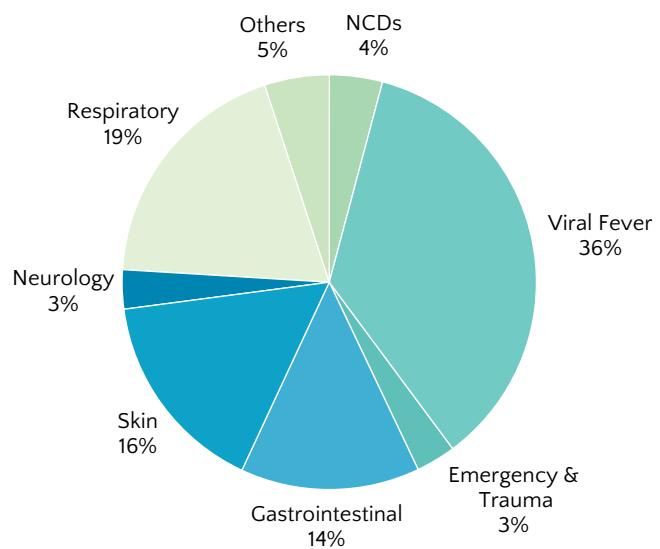
Note: Episode doesn't indicate number of patients but number of events of a condition recorded in a clinical setting

OPD & MCH services through frontline workers (April 2017 to Dec 2017)

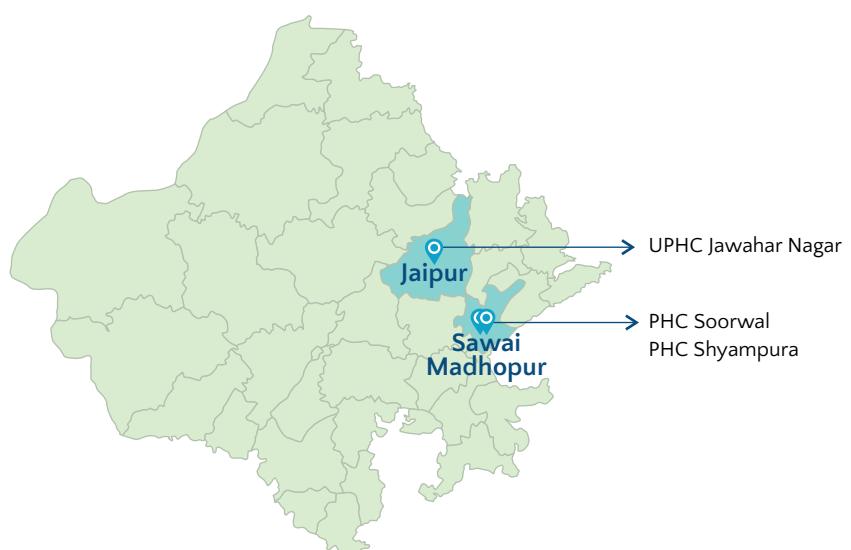
Indicators	Statistics
OPD footfall at Sub Centres	32,000
Family planning coverage	61%
Immunization coverage	81%
Antenatal registrations	1,400
Postnatal cases	674
Postnatal coverage	62%

RAJASTHAN

Disease Profile of PHCs



Footprint



(b) Partnership with Government of Karnataka

A memorandum of understanding was signed between GoK and Biocon Foundation in December 2016 to integrate our digital platform into the operations of 15 PHCs as part of the eLAJ Smart Clinic initiative. The Foundation has fulfilled this obligation by equipping each PHC with an Electronic Medical Record (EMR) System, Multiple Parameter Monitoring (MPM) device and other state-of-the-art diagnostic devices. Organisational capacity has been established in terms of policies, procedures and staff training to generate, store, use and reuse the data within bounds of data governance framework for improving the safety, quality and efficiency of healthcare delivery.



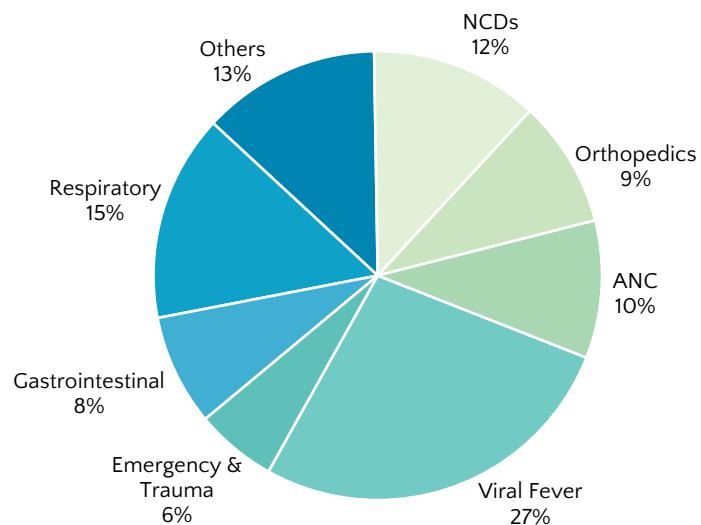
PPP Model with Government of Karnataka

Indicators	Statistics
No. of operational PHCs	15
Coverage of population	8,00,765
eLAJ registration	65,894
Outpatient visits	1,07,098
Patients aged ≥ 30 years opportunistically screened for high BP (SBP ≥130 mmHg and/or DBP ≥80 mmHg) at least once	60%
Patients aged ≥ 30 years opportunistically screened for hyperglycaemia (RBS ≥ 180 mg/dl) at least once	56%
Episodes of high BP (SBP ≥130 mmHg and/or DBP ≥80 mmHg)	29%
Episodes of hyperglycaemia (RBS ≥ 180 mg/dl)	18%
Prevalence of overweight (BMI ≥23 kg/m ²)	53%
Prevalence of underweight (BMI <18 kg/m ²)	12%
Episodes of anaemia by Hb level	62%

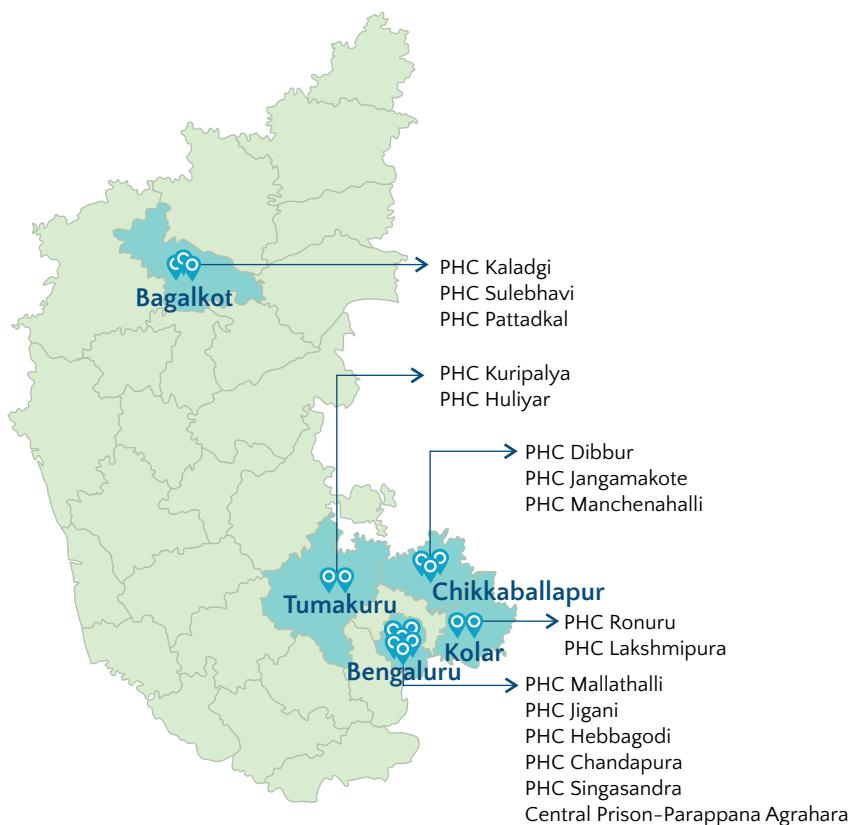
Note: Episode doesn't indicate number of patients but number of events of a condition recorded in a clinical setting

KARNATAKA

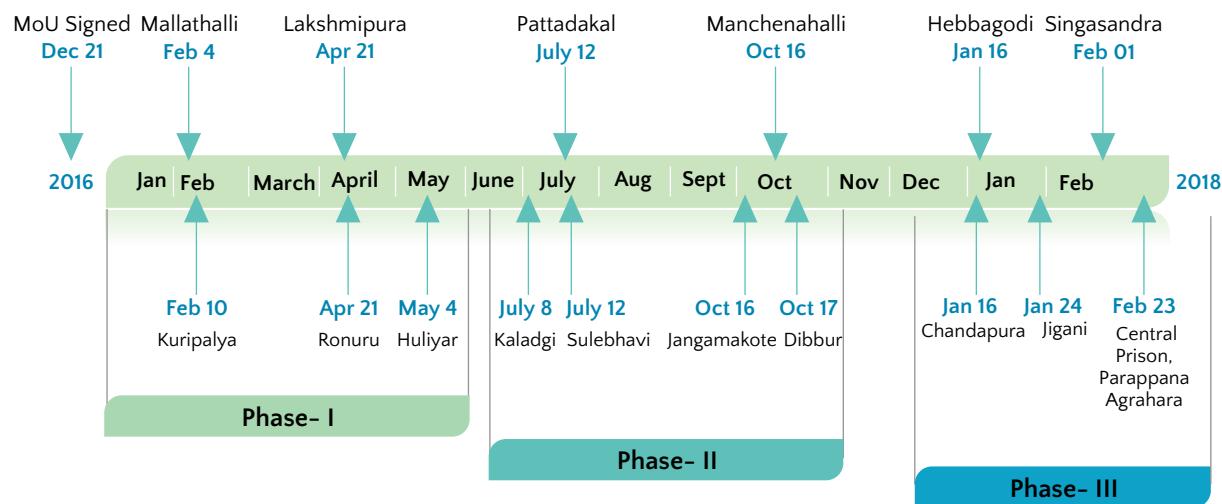
Disease Profile of PHCs



Footprint



As per the Memorandum of Understanding (MoU) between Biocon Foundation and GoK, eLAJ has been integrated into the operations of 15 GoK Primary Health Centres (PHCs). In addition, on the request of the government, Biocon Foundation provided laboratory devices to the Central Prison, Parappana Agrahara. The timeline of the launch of various eLAJ-enabled GoK PHCs is presented below:



Pivot Points

Innovation often throws up challenges along the way. For the mainstreaming of PPP-based social innovation such as the eLAJ initiative, it is essential to align the solution in the organisational interests of the Government, who is the primary party and sponsor of this activity. The solution should also resonate with the priorities of the local community.

Looking broadly at the landscape, the social innovation ecosystem is constrained when it comes to forging collaborations. This is demonstrated by the ever-growing and already large number of software platforms and tools deployed in the governmental healthcare system, making regulation and interoperability both complex as well as difficult, if not impossible. Biocon Foundation has been supporting the integration of platforms and the anchoring of innovative pilot projects by the government in PHCs.

One of the major success factors of the PPP model is the maintenance of transparency at all levels. The multiplicity of partners and PPP models can be counter-productive and lead to complex and unwieldy structures and operations. With a plurality of private players, administration may turn out to be a large and ineffective exercise for the regulator. Change management should take place through structured dialogue between the public and private players. Asymmetric communication can be an obstacle to the progress of a project and a hinderance to the smooth transfer of ownership at the end of its term.

The successful implementation of technology also depends on the high degree of commitment by stakeholders to embrace the innovation. In a scenario of resistance to ownership of and to using new technology, or being in a situation of competing priorities, the inherent value of that technology is diminished.

It has been our experience that such a phenomenon holds true in the case of an electronic medical record system, which, in a situation of conflicting and competing priorities, is often ignored especially since the demand for an electronic patient record is not universal at the end user level in the existing public healthcare system.

For a platform such as eLAJ, which relies heavily on the handlers of technology and the need to comply with the protocols of services and data entry, the presence of an active administrator on the ground becomes pivotal to the success of a data-based healthcare system. It has been our experience that the acute shortage of doctors in rural areas poses a big challenge in effectively deploying innovations such as eLAJ as there is not enough supervision and discipline in the capture and recording of data.



The use of appropriate digital equipment at primary level institutions can greatly improve access to quality care, provided the recipient has policies and administrative arrangements in place to commission, install, maintain, train and support both the process as well as equipment on a sustainable basis. A thorough study of demand-side is imperative prior to decision-making on the provision of equipment and consumables in order to ensure that the investment results in the desired outcomes.

The emphasis on preventive and primary healthcare is a significant step towards achieving equitable healthcare. Improving the functioning of the existing primary healthcare delivery system of the government, used primarily by the disadvantaged sections of society, will go a long way in achieving better health outcomes. This is supplemented, by developing and integrating models of screening of NCDs in order to provide the government with a genuine practical and theoretical framework for high-level readiness in terms of early detection and rapid response and mainstreaming with minimal modifications.

Although ICT-enabled and process-based innovations may not often come naturally to the first tier of health system in government, scale certainly does. Biocon Foundation has established a link between innovation and scale through public private partnerships.

DIET-RELATED NON-COMMUNICABLE DISEASES

Baseline

Non-communicable diseases (NCDs) are collectively responsible for 71% deaths globally. A majority of these deaths are due to cardiovascular diseases and diabetes.

SDG 3.4 aims to reduce the premature mortality from NCDs by one third through prevention and treatment and promotion of mental health and well-being. Other SDGs such as decent work and economic growth (SDG 8), reducing inequalities (SDG 10) and sustainable communities (SDG 11) are fulfilled by efforts to tackle NCDs.

Obesity is a significant risk factor for NCDs. As per NFHS-4 (2015-16), over 23% of women and 22% men in Karnataka are overweight or obese. The prevalence of high blood pressure is about 10% in women and 16% in men. High blood sugar level is reported in above 6% of women and 8% of men.

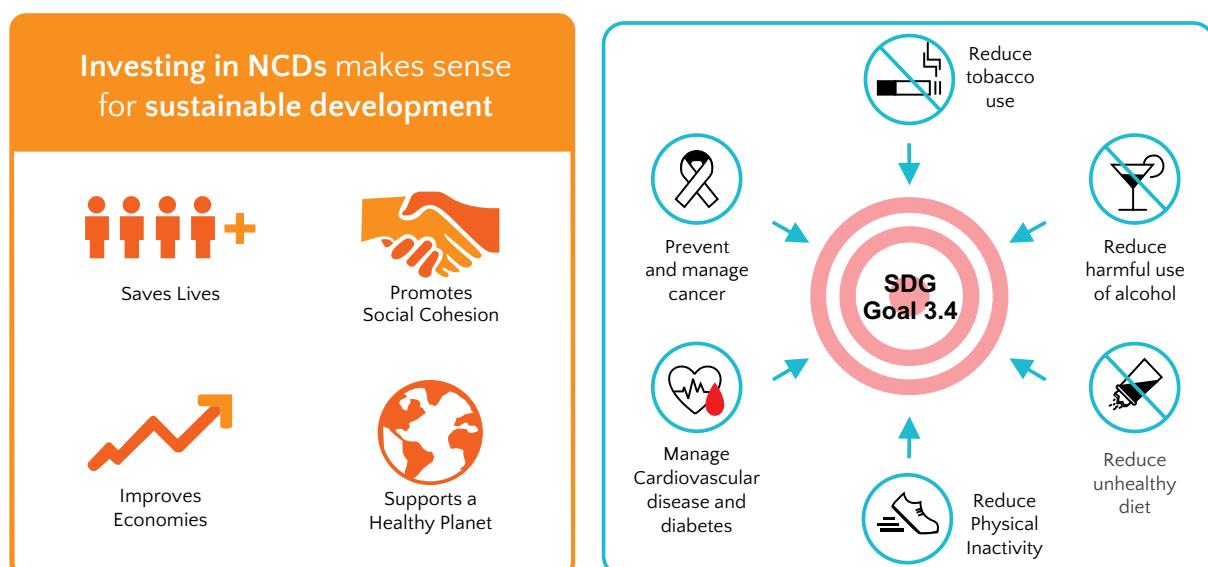
Increasing life expectancy has led to a demographic shift with a larger old age population to cater to in most of the countries. The proportion of the world's geriatric age group (> 60 years) is expected to double from 12% to 22% from 2015 to 2050. In 2020, the number of people aged 60 years and older will outnumber children younger than 5 years as per WHO.

With the increasing incidence of diabetes, there is an increase in its related complications. More than one in three people living with diabetes will develop diabetic retinopathy. Diabetes can also exacerbate other eye conditions such as cataract, glaucoma, loss of focusing ability and double vision. Diabetic retinopathy is an avoidable cause of blindness. Uncontrolled hypertension can cause retinopathy independently and can increase the rate of progression of diabetic retinopathy. According to the International Diabetes Federation (IDF), regular eye examination is the only way to determine the condition of the retina in order to treat the patient.

Diabetic peripheral neuropathy is one of the complications which contributes to the high morbidity of Diabetes Mellitus (DM). Neuropathy leads to poorly healing foot ulcers which get infected and require hospitalization and may eventually lead to amputations. It is imperative therefore to concentrate on preventive aspects of diabetic foot management as per IDF.

Stakeholders

Biocon Foundation believes in delivering quality healthcare and to achieve this we partner with premier institutes like St. John's Medical College & Hospital and Jain Institute of Vascular Sciences (JIVAS). This collaboration facilitates strengthening of the chronic care model and provides referral linkage for patients who need specialized care.





Intervention

Biocon Foundation eLAJ Smart Clinics run NCD clinics every month, focusing on diabetes and hypertension. The clinics conduct screening as well as draw management plans for diet related NCDs, and ensure continuum of care through regular follow-ups by the Community Health Workers (CHWs) regarding lifestyle modifications and medication adherence. The primary objective is retention in care, which is a very important aspect in management of chronic diseases. Such patients are also screened for retinopathy at monthly ophthalmology clinics conducted with specialists. Monthly foot camps to screen for diabetic neuropathy and prevent foot ulcers are part of the comprehensive care that we provide. Monofilament testing and a sensitometer are used to detect neuropathy in patients with diabetes. Patients are counselled regarding the use of protective footwear and daily foot care regimen.

A monthly geriatric clinic was started at the health center in an urban slum, in view of the high proportion of geriatric patients. Special attention is given to specific health needs and co-morbidities of these patients. Most of the beneficiaries in the geriatric clinic are patients with diabetes and hypertension. In addition, other age related conditions like Parkinsonism and osteoarthritis are addressed during these camps.

Outcome

NCD clinics	52
Total footfall at NCD clinics	4763
Average footfall per clinic	92
Average control rate DM Type 2 (Postprandial Blood Sugar <181 mg/dl)	34%
Average control rate HT (Blood pressure <140/90 mmHg)	59%
Average of DM patients attending NCD clinics screened for retinopathy	70%
Average of screened patients with retinopathy	26%

Pivot Points

Non-compliance towards medicines is the most common cause of uncontrolled blood sugar and blood pressure levels in patients. There was no significant improvement in compliance to medication when free medicines were dispensed. The most common excuse for non-compliance was a busy schedule. We have given patients daily dosage pill boxes to store medicines so that CHWs could check for compliance as well as counsel patients.

Screening for complications is an important aspect of disease management; patients are not motivated to do this independently and it has been a challenge to provide these facilities at recommended intervals at the community level. There is also high attrition to follow up in the initial stages of diabetic retinopathy and neuropathy. Referral linkages are also difficult due to economic and logistic constraints. Our tertiary partners help us to conduct screening in the community and bridge this resource gap.

The chronic care model adopted, created a linkage between health systems and communities. This coupled with self-management support and clinical information systems like patient trends provided a systematic approach to manage NCDs.



ORAL CANCER

Baseline

As per the GLOBOCAN 2012 report, oral cancer is the most common cancer among Indian men, and fifth most common cancer among Indian women. According to NFHS-4 (2015-16), 44% of Indian males use tobacco in some form and 29% consume alcohol. The corresponding consumption of tobacco in Nagaland is 69% (1.5% increase during 2005-06 and 2015-16), which is way above the national average. The state of Rajasthan has also shown a high usage of tobacco at 47% in the male population. These figures are significant as tobacco and alcohol consumption are established risk factors for oral cancer.

The initiative to control oral cancer under Sustainable Development Goals include, though not limited to: poverty alleviation (SDG 1), health and wellbeing (SDG 3) and economic growth (SDG 8).

Stakeholders

To enable scale up of our programs across different geographic locations, we have collaborated with the Governments of Karnataka and Rajasthan as well as reliable partners such as KLES Institute of Dental Sciences (KLESIDS) and Narayana Health (NH) in Bengaluru and Christian Institute of Health Sciences and Research (CIHSR), Dimapur, Nagaland.

Biocon Foundation has collaborated with KLESIDS to conduct outreach programs and set up primary dental health facilities in urban slums and rural areas.

An Independent Oral Cancer Task Force comprised of highly acclaimed experts, has been set up to develop a strategy for oral cancer control in India over the next decade. Biocon Foundation will implement programs under their guidance.





Dr Kiran Mazumdar-Shaw, Founder & Managing Trustee, Biocon Foundation

Dr G K Rath, Chief, Dr. B R Ambedkar Institute Rotary Cancer Hospital, Professor of Radiation Oncology & Head, National Cancer Institute, AIIMS, Delhi

Dr Pankaj Chaturvedi, Professor and Head & Neck Cancer Surgeon, Tata Memorial Hospital, Mumbai

Dr Kumar Prabhakar, Professor, Medical Oncologist, Tata Memorial Hospital, Mumbai

Dr Vijay Chandru, Chairman, Strand Life Sciences, Bengaluru

Dr Moni Abraham Kuriakose, Director, Cochin Cancer Research Centre

Dr Praveen Birur N, Professor & Head of Oral Medicine and Radiology, KLESIDS, Bengaluru, Lead - Oral Cancer Program, Biocon Foundation

Guest of honour: **Dr K B Linge Gowda**, Director, Kidwai Memorial Institute of Oncology

Interventions

Oral Cancer Screening

Our mHealth approach for early oral cancer screening is both population-based and opportunistic.

In the population-based approach, Community Health Workers (CHWs) conduct screening by door-to-door visits. They are trained in risk factor assessment and identification of lesions. Images of oral potentially malignant disorders (OPMD) and the risk factor assessment are sent via a mobile phone to remote specialists for recommendation.

In the opportunistic screening model, general physicians and dentists who often see oral lesions in their routine clinical practice are trained to screen high-risk patients as well as treat identified cases of oral cancer.

In both approaches, patients identified with pre-cancerous lesions are provided with chemo-preventive medication, or referred to higher centres for biopsies. The high-risk group is assessed for nicotine dependence using **The Fagerström Test**. Tobacco and areca nut cessation counselling and education about oral self-examination, oral hygiene, and the role of diet in prevention of oral cancer is provided.

Oral Health Promotion

KLESIDS has set up dental chairs at clinics in an urban slum and a rural area to promote oral health as well as provide quality dental care to communities. Outreach camps are conducted for children and young adults at educational institutions. Camps are conducted for the geriatric population and free dentures are dispensed.



Outcomes

Oral Cancer Screening

(a) Population Based Screening

Nagaland

Residents in this community are at high risk for oral cancer because of high prevalence of tobacco usage and alcohol consumption. The problem is further aggravated by poor nutrition and oral hygiene as well as a limited access to dental and medical care. In association with CIHSR, we have initiated a Screen and Treat program for Oral Cancer in Dimapur, Nagaland. The program has been able to successfully screen over 8890 individuals over a period of 10 months.

Biopsies were performed at CIHSR, Dimapur for 30 cases of oral potentially malignant disorders in collaboration with Department of Head & Neck Oncology Narayana Health. Out of these, three were reported to have early micro invasive lesions (Micro invasive carcinoma), indicating a high incidence of oral cancer in this region. There was a high level of attrition to follow up as is often the case with invasive procedures. Local doctors were trained to perform biopsies in order to create a permanent referral loop for patients. For the period under review, this program had the highest level of participation by all stakeholders and at all levels.

Total population screened	8892
High risk population (with positive habit history)	5084 (57%)

Habit prevalence in the high risk population	
Alcohol	26%
Smoking tobacco	23%
Smokeless tobacco/Pan masala/Areca nut	41%
Prevalence of lesions in the high risk population	796 (15%)

Karnataka - A population based Screen & Treat program was implemented in the catchment area of Government Primary Health Centre, Sulebhavi, Bagalkote.

Total population screened	329
Prevalence of lesions	11 (3%)

(b) Opportunistic Screening

Rajasthan

Oral Cancer screening was initiated in the eLAJ clinics set up in primary health centres in Jhalawar and Jaipur using Accredited Social Health Activists (ASHAs).

Total number of patients screened	368
Prevalence of lesions	76 (20%)

(c) Workplace Setting

Oral cancer screenings were provided on-site for low-income, immigrant factory contract workers at seven locations. These were conducted independently and in collaboration with Narayana Health.

Total number of workers screened	2185
Prevalence of lesions	188 (9%)

Outcome Summary: 11774 people were screened for Oral Cancer across the screening approaches in the period under review. The prevalence of lesions was 1071 (9%).

Oral Health Promotion

Clinic Location	Oral Health Check up	Treated
Austin Town	66	17
Kalkunte	390	323
Outreach camps by KLE		
a) Oral health screening and promotion for school children	15651	3964
b) Denture camps for geriatric patients	481	313

Pivot Points

The Oral Cancer Screening Program was implemented in different geographies over the last seven years. The extensive field experience has shaped the program into what it is today. The integration of technology was a great challenge in low resource settings and in the hands of unskilled staff. We experimented with the changing generations of hardware and software and different devices ranging from digital pen and sheet to the smart phone. We are currently using smart phones as all features required for program implementation are available on it.

Community Health Workers were selected from the local population. They were residents in the community where the screenings were conducted, and fluent in that community's dominant language. Detecting an OPMD early alone is not sufficient. It is critical to improve the capacity of ASHAs through training and to empower them to monitor lesions and provide timely referral.

One of the key factors in successfully implementing such programs at a grass-root level is to secure the active buy-in and involvement of local authorities. In our experience, local authorities were predominantly keen to participate. We have aligned our program with the healthcare initiatives of the government agencies in order to achieve scale and sustainability.

On the occasion of World Cancer Day, 4 February 2018, an independent Oral Cancer Task Force was launched to develop a strategy for oral cancer control in India over the next decade and to develop a national, cost-effective, patient-centric and sustainable oral cancer control program. The multidisciplinary task force is comprised of leading specialists who will contribute their expertise to address the burden of oral cancer. The mission of the task force would be to ideate, educate and engage stakeholders, thereby effectively down-staging oral cancer in India. Biocon Foundation is committed to implement programs in line with the vision of this expert task force.

WOMEN'S HEALTH

Baseline

As per GLOBOCAN 2012 data, cervical cancer is the fourth most common cancer in women with an estimated 5,28,000 cases and 2,66,000 deaths worldwide. Breast cancer is the second most common cancer in the world with 1.67 million new cancer cases and 5,22,000 deaths globally.

Indian Council of Medical Research (ICMR) has reported that breast, cervical and ovarian cancers are the most common cancers affecting Indian women. Recent reports show that incidence of breast cancer is greater than the incidence of uterine cancer.

As per NFHS-4 (2015-16), less than 16% women have undergone a cervical examination and less than 13% women have had a breast examination in the age group 15-49 years in Karnataka.

Specialists in International Agency in Research for Cancer (IARC) have observed that Asia is lagging behind in screening. Most of the cases are detected at an advanced stage and result in high mortality. Screening for early diagnosis is cost effective and has shown positive outcomes.

The NFHS-4 (2015-16) reported that only 63% mothers had antenatal check-ups in their first trimester and less than 64% of institutional births took place in public health facilities in Rajasthan. The survey also revealed that less than 64% mothers received postnatal care within 2 days of delivery in the state.

The focus on women's health to improve their access to primary health services, especially sexual and reproductive healthcare has far reaching impacts on improving nutrition (SDG 2), health and well-being (SDG 3), gender equality (SDG 5) and reducing inequalities (SDG 10). Furthermore, it has strong linkages with most of the other SDGs as well.

Stakeholders

The method of screening used at the Biocon Foundation clinics is the Pap Smear, we have therefore collaborated with the best tertiary centres with expertise in Cytopathology and further diagnostic procedures such as Narayana Health and St. John's Medical College and Hospital.

Mahila Dakshata Samiti is a Non-Governmental Organisation (NGO) which provides help to destitute women. Biocon Foundation has been conducting Well Woman clinics in collaboration with this organisation since 2014. Pap Smear reports are processed at the Department of Pathology, M.S.Ramiah Medical College.



Biocon Foundation implemented Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA), a flagship program of the Government, to provide antenatal care to pregnant women at its PHCs adopted under public private partnership with Government of Rajasthan. The Foundation also upgraded infrastructure for institutional delivery at PHCs and associated Sub Centres in Sawai Madhopur and Jhalawar districts. Our postnatal services cater to the health needs of mothers and newborn babies.

Intervention

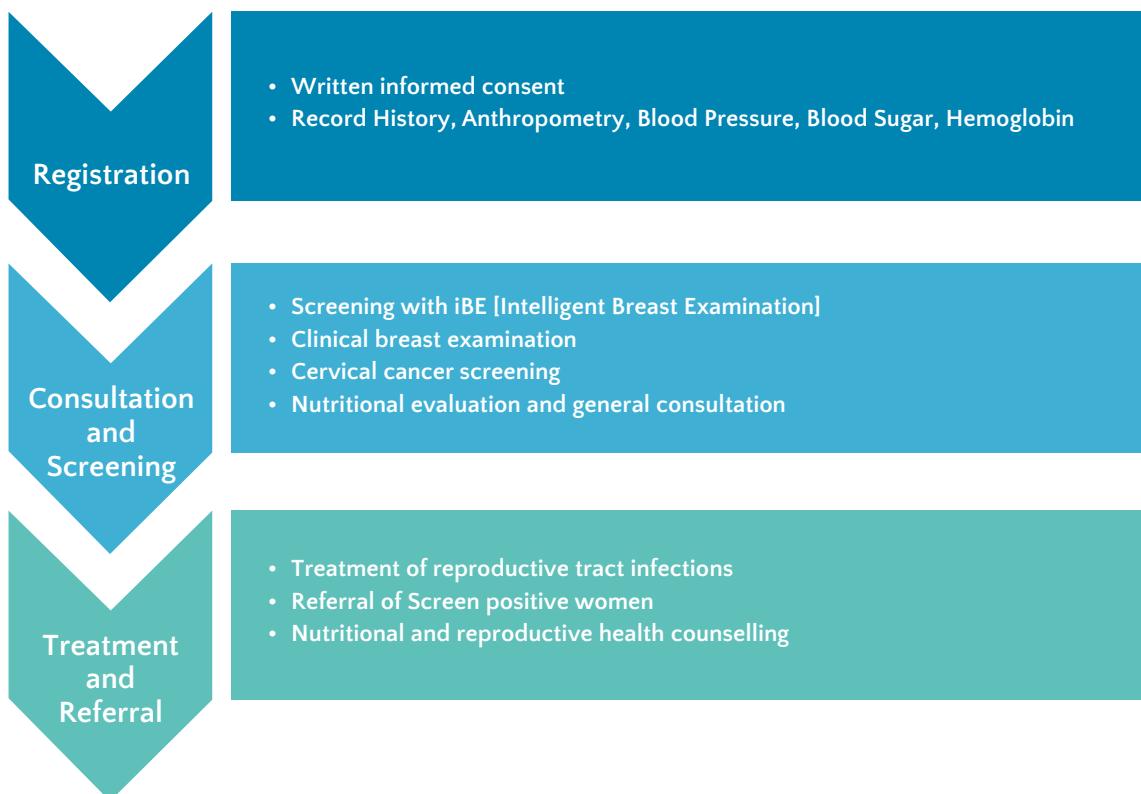
Karnataka

Women are not intrinsically motivated to come forward to be screened, due to the stigma associated with cancer.

The cervical and breast cancer screening camps at Biocon Foundation eLAJ Smart clinics were redesigned as well woman clinics, thereby creating a platform to align with other health needs. In addition to cervical and breast cancer, the clinic also screens for anemia, diabetes mellitus and hypertension. Other medical conditions are addressed as well and nutritional counselling is provided.

In order to bridge resource gaps, the use of technology is encouraged. The iBE, an FDA approved handheld device developed by UE Life Sciences, provides non-invasive, painless and radiation-free detection of breast lesions.

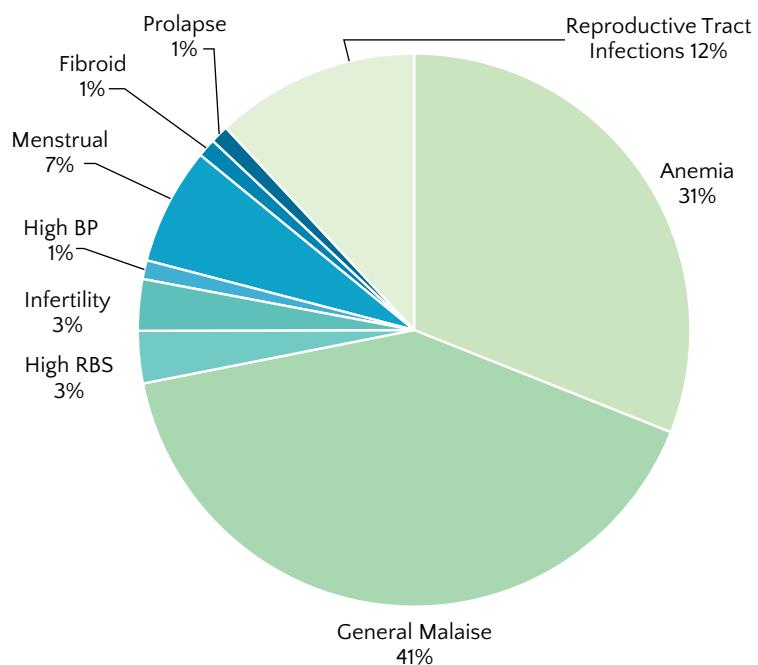
Workflow and Approach



Outcome

Total footfall	521
Number of Pap Smears	360
Cases with atypical cells on Pap Smear	12
Number of cancers detected	0
Number of iBE screenings	272
iBE positive cases	59

Common Conditions



Rajasthan

Biocon Foundation has played a vital role in improving women's health by strengthening public health facilities and supporting government programs in Rajasthan. The Foundation adopted a health system strengthening approach to provide infrastructure, manpower, equipment, medical products and other facilities to the PHCs in accordance with Indian Public Health Standards (IPHS). The pregnant women received health check-ups and required treatment for free on the 9th of every month in the PMSMA camps. The infrastructure upgrade resulted in better utilization of health services for institutional births. Our postnatal services facilitate mothers and newborns during the six weeks after birth. The digital laboratory established at each PHC provided point-of-care diagnostic services in resource-constrained settings. The Foundation also regularly conducted training of health professionals to improve their knowledge, skills and performance in reproductive healthcare.

Outcome

No. of deliveries at PHCs	330
No. of PMSMA camps organised at PHCs	50
PMSMA camp footfall at PHCs	4,400
No. of ANC registrations	1,400
No. of Mothers who received postnatal care (PNC)	674

Pivot Points

The process of screening for cancer intimidates most women. However, when integrated with testing for nutritional deficiencies, reproductive infections, high blood pressure and high blood sugar, these screenings gain more acceptance. We therefore changed the workflow of the screening camps at Biocon Foundation eLAJ Smart Clinics in Karnataka to develop an integrated approach.

The Foundation addressed barriers of distance, unreliable transport and transportation cost to access antenatal services by providing free of cost transport facility to pregnant women on the day of the PMSMA camp in Rajasthan.

The Foundation also developed and adopted effective methods to manage inventory and clinical supply chain, thereby strengthening health systems.



INTEGRATED SCREENING AT THE WORKPLACE

Baseline

A survey conducted by Employee's State Insurance Corporation (ESIC) in 2014 established that more than 60% of women workers in garment factories were anemic. In another survey of International Labour Organisation (ILO) on working conditions in India's garment industries in 2015, lack of healthcare was reported as one of the most prominent reasons of attrition and deterrent for employment. The large influx of migrant workers who face disproportionate health risks, have minimum support and protection. Biocon Foundation was approached by the Department of Labour and Employment to conduct NCD camps for daily wage workers at some garment factories.

This initiative for migrant workers under Sustainable Development Goals include no poverty (SDG 1), improving nutrition (SDG 2), health and wellbeing (SDG 3), gender equality (SDG 5), economic growth (SDG 8) and reducing inequalities (SDG 10).

Stakeholders

Biocon Foundation collaborated with the Department of Factories, Boilers, Industrial Safety & Health to conduct screening for factory workers. Our technical partners in this initiative were Narayana Health and UE Life Sciences.

Intervention

Oral, breast and cervical cancers are major causes of morbidity and mortality in India. Integrated screening of these conditions in a workplace setting creates awareness as well as helps in early detection, prevention and optimal management of these diseases. Biocon Foundation conducted integrated screening in some factories in Anekal taluk. Daily wage factory workers were screened for anemia, obesity, diabetes, hypertension and oral cancer. Women were screened for cervical and breast cancers. Patients with risk factors were counselled and advised further referral and management if required. Free essential medicines were dispensed.



Outcome

Total number of factory workers screened	3916
Screening for diabetes and hypertension	
Individuals with high Random Blood Sugar (>200 mg/dl)	55
Individuals with high Blood Pressure (>140/90 mmHg)	100
Cervical cancer screening	
Women screened for cervical cancer	393 (467 eligible)
Number of cases with atypical cells	4
Number of cases with reproductive tract infections	13
Breast cancer screening	
Women screened for breast cancer using iBE	556
Number of cases with abnormal findings on iBE	69
Oral cancer screening	
Individuals screened	3916
Number of cases with oral lesions	64
Screening for anemia	
Number of men with anemia (Hb <14 g/dl)	121 out of 646 (19%)
Number of women with anemia (Hb < 12 g/dl)	584 out of 2214 (26%)

Pivot Points

Integrated NCD screenings in factory settings gave daily wage workers an opportunity to avail the facilities on offer. As they cannot afford the wage loss that is incurred and the prohibitive costs whilst seeking healthcare, providing this facility at the workplace brings healthcare to their doorstep.

Some of the challenges associated with screening at the workplace were related to time constraints. The time available to screen factory workers is limited as this has to be completed during working hours and interferes with the workflow of the production process. The high volume of Pap Smears given to the laboratory at one time resulted in delay in the reporting process.

MENTAL HEALTH

Baseline

Mental health was the topic for World Health Day 2017, recognizing it as a public health priority with the theme, "Depression, Let's Talk". The Global Burden of Disease report states that mental disorders account for 13% of total days lost for Years Lived with Disability (YLD) with depression being the leading cause. The National Mental Health Survey 2015-16, reports that 15% of the Indian population above the age of 18 years have mental health issues requiring active intervention. The prevalence is more in urban areas. India's National Mental Health Programme (NMHP) and Mental Health Bill 2017 have therefore made provisions to create more awareness about mental health, remove associated stigma and strengthen health centres for its management.

The provision of mental healthcare contributes to attainment of various Sustainable Development Goals including, though not limited to: health and wellbeing (SDG 3) and reducing inequality (SDG 10).

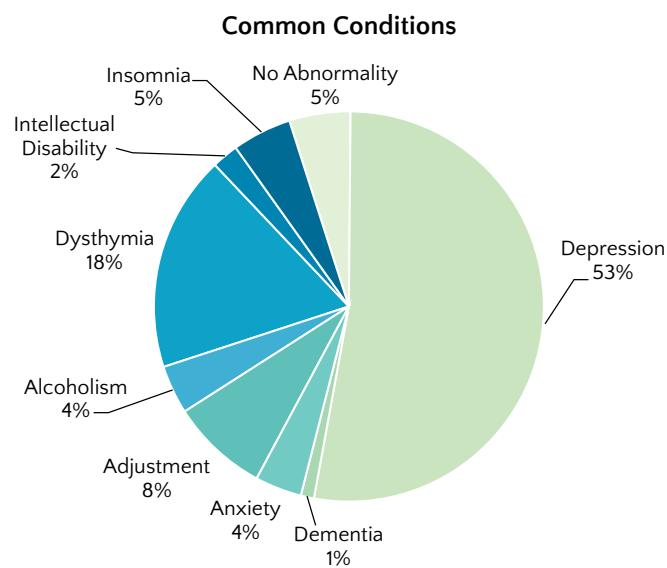
Stakeholders

Doctors from the Department of Community Medicine specialized in the management of common mental disorders at the primary level and psychiatrists from St. John's Medical College & Hospital, provided consultation. The beneficiaries are slum dwellers in an urban setting.

Intervention

There was a need for a mental health clinic to service the community of an urban slum, an environment susceptible to increased mental health issues. Community Health Workers (CHWs) created awareness regarding mental health in the community and bridged the gap by referring potential cases to the clinic held every month. Patients were reassured and encouraged to seek timely help.

Outcome



The clinic diagnosed mental health problems as comorbid conditions or consequences of chronic diseases. Depression was found to be the most common disorder diagnosed at these clinics.

Pivot Points

Our clinic in Austin Town reported a high number of patients with symptoms of depression, stress and anxiety disorders. Medical Officers also noticed that many patients presented with non-specific symptoms that indicate a mental health component to the problem. It is often not possible for a primary physician to counsel the patients and take a detailed behavioural history. In order to provide focussed care in mental health, counsellors from St. John's Medical College & Hospital attend the mental health clinic every month.

SCHOOL HEALTH PROGRAM

Baseline

The 2011 census of India revealed that one-fifth of our population is in the adolescent age group (10-19 years) and the decadal growth of this population is +12.5 %; the highest in the world. According to the Global Strategy for Women's, Children's, and Adolescents' Health (2016-2030), 70% of NCD-related adult deaths are linked to risk factors that begin during adolescence. According to NFHS-4 (2015-16), 42 % of girls between 15-19 years do not use hygienic methods of menstrual protection, which emphasizes the importance of menstrual hygiene education. The report also states that the rate of teenage pregnancy is 8%, 10% of women between 25-49 years had their first sexual encounter before the age of 15 years and 58% women had their first sexual encounter before 20 years.

The National Health Policy 2017 therefore suggests widening the spectrum of health education for this age group to include nutrition, good lifestyle practices, reproductive and sexual health and life skill education.

The focus on health of adolescent girls has significant impacts on improving nutrition (SDG 2), health and well-being (SDG 3), equitable education (SDG 4), gender equality (SDG 5) and reducing inequalities (SDG 10).

Stakeholders

Biocon Foundation obtained permission from Block Education Officer (Anekal), Department of Primary and Secondary Education, to implement a program to promote and sustain the positive behaviors and emotional wellbeing in adolescent girls enrolled in government high schools in semi-urban areas. This was a joint initiative with Federation of Obstetric and Gynecological Society of India (FOGSI) and St. John's Medical College & Hospital (SJMCH).

Intervention

The sessions were conducted for 831 high school girls aged 12 to 16 years in 10 government high schools during December 2017 and January 2018. Biocon Foundation provided support in terms of finance, administration, tools, supplies and logistics and our tertiary partners contributed with technical expertise and trainers.

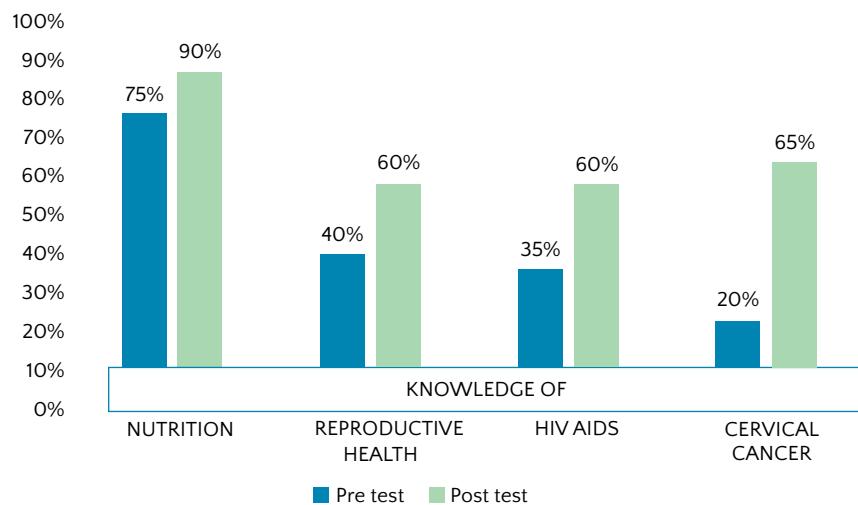
The major themes covered by these sessions were nutrition, the human reproductive system, menstrual hygiene, prevention of reproductive tract and sexually transmitted infections, cervical cancer and prevention of sexual harassment. The mode of instruction was interactive to include presentations and videos. The learnings were reinforced through *Menstrupedia* comic books, which contain information on menstrual and personal hygiene, reproductive health and nutrition.

Pre and post session tests were conducted to evaluate the benefits of the program. A Q&A session was conducted to wrap up the program and 872 *Menstrupedia* comic books were distributed.



Outcome

Correct responses in pre and post tests (n=831)



Pivot Points

Our primary healthcare programs addressed the general needs of the community. Given that the number of adolescents in India is very high and constitute the future workforce, the focus on adolescent health became very relevant. This is also the phase when gender disparities become more evident. The health and nutrition of the adolescent girl is an important aspect to break the intergenerational cycle of undernutrition and anaemia. Knowledge about nutrition was good in this cohort, however their attitude as well as practices were not as per accepted norms. The easy availability of junk food in peri-urban and rural areas is definitely a cause for concern.

The gynecologists fielded a wide range of questions and addressed each query with a scientific and open-minded approach. The quality of questions were indicative of the pressing need for such programs. Access to such sessions prevents exploitation from seeking such information from unreliable sources.

To sustain the learnings, attractive and contemporary resource material through *Menstrupedia* comics was delivered.

As the sessions were conducted in December and January, which interfered with the academic schedule, we plan to conduct future sessions in the first term of the academic year.

CHILD HEALTH & NUTRITION

Baseline

The first five years of a child's life is crucial for her growth and development. It signifies a long-term effect on cognitive ability and health outcomes for the rest of her life. The steep rise in malnutrition in children during the first two years of life is indicative of poor infant feeding practices according to the Government of India's National Guidelines on Infant and Young Child Feeding Practices. India abysmally ranked 100th among the 119 countries on the Global Hunger Index (GHI) 2017 of The International Food Policy Research Institute (IFPRI). According to UNICEF, nearly half of all deaths in children aged under five years are attributable to malnutrition. As per the Global Nutrition Report 2017, 155 million children are stunted (low height for age) and 52 million children are wasted (low weight for height) in India. In Karnataka, among children aged under five years, more than 35% are underweight (low weight for age), 26% are wasted and 36% are stunted, and only 63% of children aged 12-23 months were fully immunized as per the NFHS-4 (2015-16). The World Health Assembly has set global targets to reduce stunting by 40% and wasting to less than 5% by 2025.

Nutrition initiatives for children under Sustainable Development Goals include no poverty (SDG 1), ending hunger, achieving food security and improving nutrition (SDG 2), health and wellbeing (SDG 3), quality education (SDG 4), gender equality (SDG 5), economic growth (SDG 8) and reducing inequalities (SDG 10).

Stakeholders

The Well Baby Clinic is conducted in meaningful partnership with the Department of Community Health, St. John's Medical College and Hospital. The hospital provides medical consultation to children at the monthly Well Baby Camps organised at our eLAI Smart Clinic at Austin Town. The initiative predominantly lends a helping hand to children of migrant workers dwelling in urban slums. The beneficiaries also include children from nearby Anganwadi centres affiliated to the state Department of Women and Child Development (DWCD), private day care centres and government and non-government schools.

The Balaspandana program was a fine model of multi-sectoral convergence in service delivery to curb malnutrition. The intervention was implemented in conjunction and coordination with DWCD, Department of Medical, Health & Family Welfare (DMHFW) and the local administration to supplement functioning of Integrated Child Development Services (ICDS) in Bagalkot.

Community Health Workers (CHWs) have been an integral part of our valuable response to undernutrition and maintain strong connections with grassroots workers (AWW, ASHA and ANM), families and communities.

We provided financial aid to The Akshaya Patra Foundation in support of the Mid-Day Meal Scheme (MDMS). The key stakeholders in this program are the central and state governments, Food Corporation of India, local vendors, school authorities, schoolchildren and their families.



WELL BABY CLINIC

Intervention

Biocon Foundation conducts a Well Baby clinic every month in an urban slum of Austin Town. Key components of this clinic are anthropometric assessment to screen for malnutrition, detection of developmental delays in children, immunization, nutrition and treatment of common childhood illnesses in children under the age of five years. CHWs create awareness, improve nutrition-related behaviour and practices in caregivers, follow up children through home visits and mobilize children from the community in the clinic.

Outcome

Footfall at the Well Baby clinic	400
Children with under-nutrition	33%
Children with anaemia	7%
Most common medical condition among beneficiaries	Respiratory Infections (90%)

Pivot Points

63% of children with mild and moderate malnutrition were in the age group of 2 to 5 years stressing the importance of counselling regarding infant and young child feeding practices.

The specialists in community medicine from St. John's Medical College & Hospital counselled the parents on nutrition and good child rearing practices. Health workers intensified home visits and checked for compliance to recommended diet and medication.

The proportion of anaemia and under-nutrition identified during these camps is lower than the estimated state average. We, therefore, initiated outreach visits to the Anganwadis by the Medical Officers to identify and involve the outliers in the program.

Prescribed medicines for common ailments and nutritional supplements (Iron, Multivitamins and Calcium) were dispensed free of cost which resulted in improved compliance and adherence to the medication.



BALASPANDANA PROGRAMME

Intervention

Biocon Foundation coordinated health check-ups for severely malnourished children at government Primary Health Centres and Taluka Hospitals. Our CHWs made home visits and counselled caretakers about good rearing practices, importance of health check-ups and early management of common ailments.

Outcome (April- September 2017)

Total number of SAM children benefitted	462
Total footfall in camps	494
Number of camps organised	81
Total home visits by our health workers	611
Number of SAM children who improved	112

Pivot Points

In Bagalkot, Biocon Foundation bridged the gaps in inter-sectoral coordination between various government departments. This helped in ensuring that a SAM child receives a health check-up at least once in 2 months. Health workers were employed by Biocon Foundation to help the Anganwadi workers mobilize children for the health camps. A camp protocol was designed and shared with all stakeholders, anthropometry was done using standard measuring tools, and follow up was done on a regular basis. Pictorial sticker prescriptions were used to instruct uneducated mothers about giving nutritional supplements and medicines to the child as prescribed.

We were able to take healthcare intervention to scale and covered all but two Taluks in the district, however other strategies like nutritional gardens and Poushtika Patra were not scalable uniformly.

The burden of malnutrition was reduced to some extent but we were not able to introduce nutrition sensitive interventions to break the intergenerational cycle due to logistic constraints and limitations of monitoring from a remote location.

We closed the Balaspandana programme for management of malnutrition in Bagalkot in September 2017. Overall, it was a good learning experience that gave us precious insights into stark ground realities. It shall go a long way in further strengthening the programming of nutrition interventions in times to come.



SCHOOL MID-DAY MEAL PROGRAMME

Intervention

Akshaya Patra proposed to provide mid-day meals in schools in and around Anekal Taluk by constructing and operating a centralized kitchen at Jigani. Biocon Foundation contributed towards the infrastructure of the kitchen.

Outcomes

The kitchen provides wholesome and nutritious meals to 30,000 children of government as well as government-aided schools. Besides improving nutrition and curbing micronutrient deficiencies, this initiative has also improved school attendance rates.

Pivot Points

Biocon Foundation believes in investing in sustainable solutions. With the high prevalence of stunting and wasting in children aged under five years, it is imperative that a continuous nutrition program is implemented in the growing years as well. The centralised kitchen is an intervention which provides continuous quality nutrition to schools round the year.



WATER, SANITATION & HYGIENE (WASH)

Baseline

The access to WASH is a fundamental need and a human right. Open defecation, unsafe drinking water and poor hygiene have deleterious impacts on public health, education, environment and gender equality.

As per the Annual Status of Education Report (ASER) 2016, only 59% of schools in Karnataka have useable toilets for girls and around 25% schools have no availability of drinking water. Several research findings have established a direct correlation between health and access to WASH. Karnataka has reported 36% stunting and 26% wasting in children under the age of five years in the recent National Family Health Survey. According to the Ministry of Health & Family Welfare, in 2016, more than one million cases of preventable water-borne diseases including Acute Diarrhoeal diseases, Typhoid, Hepatitis and Cholera were reported in Karnataka.

Open defecation is a cause of pollution of ground water sources. There is also a known interaction between access to WASH and improved attendance and retention rates in schools. Conversely, lack of toilets is associated with high drop-out rate and absenteeism in schools. The dignity and safety of girls are also correlated to reliable access to toilets. Furthermore, the critical absence of sanitation facilities is leading to poor management of menstruation hygiene, urinary tract infections, gastro-intestinal problems and mental stress in the vulnerable demographic group of adolescent high school girls.

The WASH initiatives for schools and communities in low-resource settings contribute to attainment of various Sustainable Development Goals including, though not limited to: health and wellbeing (SDG 3), quality education (SDG 4), gender equality (SDG 5) and clean water and sanitation (SDG 6).

Stakeholders

Inclusion of diverse stakeholders including department of education at district and taluk levels, SDMC members, teachers and educator groups, student groups, elected officials, right-based organisations and vendors, has been a concerted and coordinated strategy of the Biocon Foundation WASH program.

A systematic, consultative and transparent need-based approach was adopted in identifying schools that need WASH infrastructure. A rigorous evaluation process has been followed in selection of the vendors and suppliers. A regular two-way flow of information between the Foundation and stakeholders is an ongoing process. Due to the notable nature of the effort and unimpeachable exigency of WASH, it has been easier to build shared understanding of goals and attract support for productive outcomes.



Interventions

School Toilets & Hand Washing Facilities

Biocon Foundation has built two on-site sanitation and hand washing facilities in Bagalur & Mayasandra government high schools, keeping adolescent girls in mind, with a view to bring about long term and multi-generational impact.

Each facility consists of two units; the first unit with 4 urinals and 1 toilet for boys and the second unit with 5 toilets for girls. There are 3 to 5 hand washing sections in each of the respective units. The toilet blocks have messages on hand washing, oral hygiene, personal and environmental health for change in behavioural norms. Safety pits have been constructed for safe waste matter disposal, to prevent contamination to the environment, water, food or hands. To ensure continuous water supply, tanks and bore wells have been installed and commissioned. These initiatives cater to the needs of more than 1,100 students annually.

School Drinking Water Purification Systems

In a bid to support quality infrastructure in government schools, Biocon Foundation in partnership with Bangalore Political Action Committee (BPAC), has developed a plan to install water purification systems in 15 schools. Identification of schools, initial advocacy with school authorities and local government bodies and finalization of suppliers have been completed. The commissioning and installation of RO plants will be completed in the near future. Once fully operational, this initiative will serve a population of more than 5,000 students and teachers annually.

Community Drinking Water Purification Systems

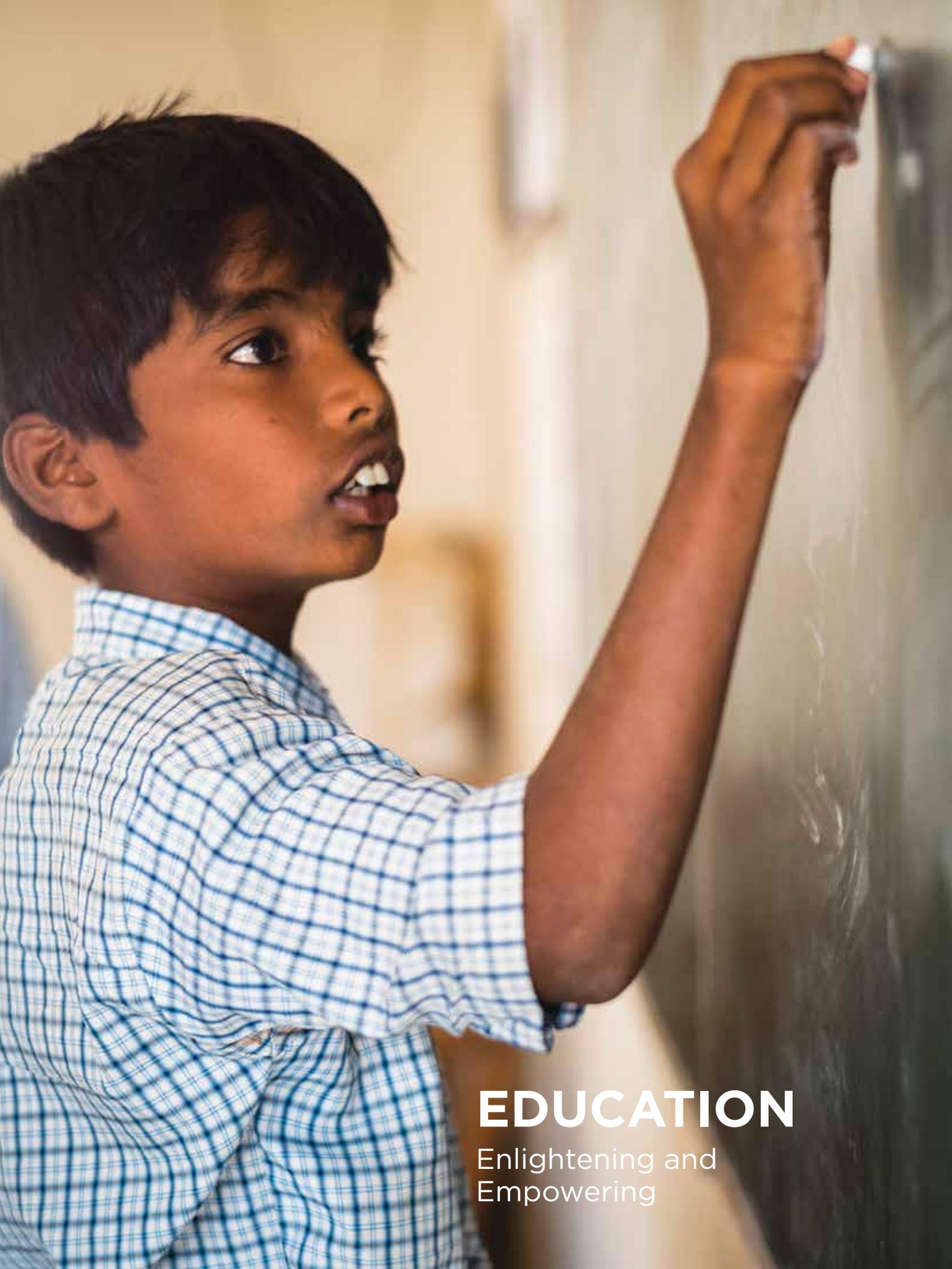
RO water plants of each of 1 kilolitre (kl) capacity have been installed in Kyalasanahalli, Marutinagar and Sriramapura villages of Bengaluru. This intervention caters to the fundamental need for safe drinking water of more than 6,000 residents.

Pivot Points

Besides constructing sanitation facilities, it is also crucial to foster demand amongst target stakeholders for the regular use of toilets by changing deep-rooted cultural attitudes towards the unsafe practice of open defecation. Information, Education and Communication (IEC) should be an integral part of the WASH program. The provision of water supply and drainage is imperative in mitigating hygiene-related risks and also to ensure that the investment is put to good use. These extended facilities help in ensuring the functionality of toilets. Regular maintenance and repair of infrastructure are other conditions for sustained use and benefit.

A community-led total sanitation approach has been prioritized by the Foundation in partnership with BPAC. School administration is being encouraged to practice unbiased division of hygiene-related tasks among students and teachers. A concrete plan has been formulated for need assessment, construction and maintenance of sanitary facilities and installation and maintenance of the RO plants, both in terms of availability and accessibility. Regular monitoring of water quality has been prioritized. Promotion of life skills education, safe physical environment and appropriate hygiene behaviour are integrated into the project.





EDUCATION
Enlightening and
Empowering

CHINNARA GANITHA

Baseline

According to Annual Status of Education Report (ASER) 2016, in the state of Karnataka, only 29% of Grade III children have the ability to carry out a 2-digit subtraction and less than 20% of Grade V children have the ability to solve simple division problems. The Report also advocates that special focus, time and attention be given to help children learn basic and foundational skills in maths.

As per the National Achievement Survey (NAS) 2017, on an average, 75% children of Grade III and 67% children of Grade V are responding to Mathematics in government-run schools in Karnataka. Although the state has performed better than the national average in this learning report, the national average itself is quite low, and therefore there is scope for improvement. Not surprisingly, the survey revealed that students suffer from mathematical anxiety in state-run schools. This finding led to the formation of a national committee by the Ministry of Human Resource Development to find ways to combat the crisis of mathematical anxiety.

Our education initiative for underprivileged children contribute to attainment of a major Sustainable Development Goal (SDG 4) on the road to “inclusive and equitable quality education”. However, it has direct and strong linkages with most of the other SDGs as well.

Stakeholders

Biocon Foundation is working with a range of stakeholder groups involved in this project, including school administration, teachers, students, parents, community members, business vendors, civil society organisations, elected officials and concerned government departments. Inputs from teachers and parents on curriculum, pedagogy and assessment are integral to our implementation process.

Intervention

Chinnara Ganitha is a workbook series which has been exclusively developed by Biocon Foundation to build in children a strong foundation in the basic concepts of mathematics. Its application-based modules are designed to make learning distinctly relevant in the context of the real-life experiences of the child. The curriculum for the series has been distilled to address the development of essential, age-appropriate mental math skills. Math puzzles and games are included to make the learning experience enjoyable. The content is presented with minimal text and includes pictorial representation of mathematical facts.



The workbook series is designed for Standards I to VII and requires minimal teacher intervention. Well-planned exercises in Kannada, the local vernacular, complement the government math curriculum and assist students at the primary and middle school level in overcoming mathematical anxiety.

Since its inception in 2006, the program has touched the lives of more than half a million students. To address the issue of deficient mathematical proficiency, these workbooks have been distributed to over 1,00,000 students in about 1,000 government schools in the current year. Macmillan is the publishing partner and the Bangalore Political Action Committee (BPAC) is a partner for distribution of *Chinnara Ganitha* books.

Pivot Points

For the year under consideration, Biocon Foundation partnered with BPAC, Bengaluru to distribute *Chinnara Ganitha* books in schools in Bengaluru. Hitherto, the books were distributed in rural and semi urban areas only. BPAC team members directly engaged with teachers and provided us with valuable feedback. The books are well received and there is a demand for such books in English. Biocon Foundation has shared this feedback with the Karnataka State Department of Primary and Secondary Education.

The employees of Biocon Ltd under the Employee Engagement initiative VEngage, volunteered with ten schools to teach and assess fundamental mathematical skills using *Chinnara Ganitha* workbooks. The sessions proved to be a fulfilling experience for both the volunteer teachers and the students.



AATA PAATA WADI

Baseline

Thithimati is a village situated in the Western Ghats in Kodagu district of the state of Karnataka. This mountainous region is covered with dense forest and faces unpredictable climatic conditions, which pose significant challenges to the education of the inhabitant tribes and other socially deprived sections. These include commuting long distances, often over difficult terrain, to school due to poor connectivity. Understandably, the community lags behind on several crucial educational indicators.

Stakeholders

The project has multiple interdependent stakeholder relationships, including the Ashrama Residential School administration, teachers, students, parents, families, community members, business, vendors, civil society organisations, elected officials, the Department of Education and State Social Welfare Department of the Karnataka Government.

Intervention

Biocon Foundation has gone the extra mile to bring education and soft skills to children at Thithimati. *Aata Paata Wadi* is an afterschool enrichment program in English and phonics, life skills, art and craft, digital literacy and games for children of government schools. To overcome the challenge of geographical barriers in accessing the services, transport was arranged from school to the Aata Paata Wadi centre. Observation and feedback indicate that students are responding well to this enrichment program.

Pivot Points

In difficult geographical terrains, an afterschool program can offer an effective way of overcoming obstacles confronting the realisation of emotional, social, physical and academic development of children. In the absence of good connectivity, providing a reliable transport facility especially during the monsoon season, posed difficulties. There were challenges associated with systematic monitoring and sustaining support systems due to natural adversities.

In order to achieve better administration and regular monitoring on quality aspects of education, the program was moved to Ashrama Residential School in Thithimati, which is run by the State Social Welfare Department for tribal children from remote regions.





RURAL DEVELOPMENT

Augmenting Essential Resources

RURAL DEVELOPMENT

Baseline

Rural development is critical in Karnataka as more than 60% of its population is rural-based. Compared to its urban counterparts, rural Karnataka lags in the majority of development indicators.

Lake Rejuvenation

Article 21 of the Constitution of India, which deals with the right to life, encompasses the right to live in a clean environment. While the prominent lakes of Bellandur and Varthur have drawn a lot of attention, other lakes are also dying a slow death. A study conducted by Indian Institute of Science (IISc) revealed that 90% of the lakes in and around Bengaluru are polluted due to sustained flow of untreated sewage and industrial effluents, and the dumping of solid wastes and building debris. The study also argues that 98% of the lakes have been encroached upon. According to the Karnataka State Pollution Control Board, the dissolved oxygen content of the water in the majority of lakes in the area has depleted below the acceptable level of 4 mg/l on account of pollution.

The intervention to rejuvenate the lakes will help realize many SDG goals, *inter alia*: improving access to water (SDG 6), resilient infrastructure (SDG 9) and sustainable consumption (SDG 12).

Infrastructure

The Pradhan Mantri Gram Sadak Yojana (PMGSY) targets the speeding up of the execution of road building to achieve 100% rural connectivity prior to March, 2019. According to the Economic Survey of Karnataka (2017-18), 1771 (population between 250 – 499) and 10,296 habitations (population less than 250) do not have road connectivity.

About 27,000 out of 75,489 Karnataka schools have three classrooms or less, according to a latest report by The District Information for System in Education (DISE). The policy of the state to determine classroom requirements based on number of teachers rather than the number of students/grades has led to this crisis and has affected learning outcomes.

The Public Health Policy of Karnataka, 2017 recognises the regional inequities in healthcare; the 8 North Karnataka districts, including Bagalkot have poorer health indicators than do most of the southern districts of the state. Many critical amenities in Public Health Centres including laboratory facilities do not conform to Indian Public Health Standards (IPHS) in these districts.

The efforts to develop rural infrastructure will help realize many SDG goals, *inter alia*: poverty alleviation (SDG 1), health and well-being (SDG 3), access to education (SDG 4), inclusive growth and economic opportunities (SDG 8) and sustainable infrastructure (SDG 9).

Stakeholders

Biocon Foundation has created value-based partnerships and adopted a demand-responsive approach to enhance the socio-economic status of rural communities. Developing community participation by taking into account their concerns and expectations forms the core of our engagement with the rural citizenry. Stakeholders include local public authorities and concerned departments, rural associations, village communities, civil society organisations and businesses, to mention a few.

In the case of the Hebbagodi lake there are many government departments involved with various aspects of lake management; these include the Karnataka Lake Conservation Development Authority (KLCDA), the Hebbagodi City Municipal Corporation (HCMC) and the Minor Irrigation Department. Some of these agencies have overlapping jurisdictions. A multi-sectorial approach for convergence has been adopted to involve agencies, residents and elected representatives at various levels of the project. Wg Cdr (Retd) G B Athri took a lead role to bring together government authorities and other stakeholders and ensure the implementation of the project. Experts were engaged to conduct a feasibility study and prepare a concrete plan for revival of lakes.

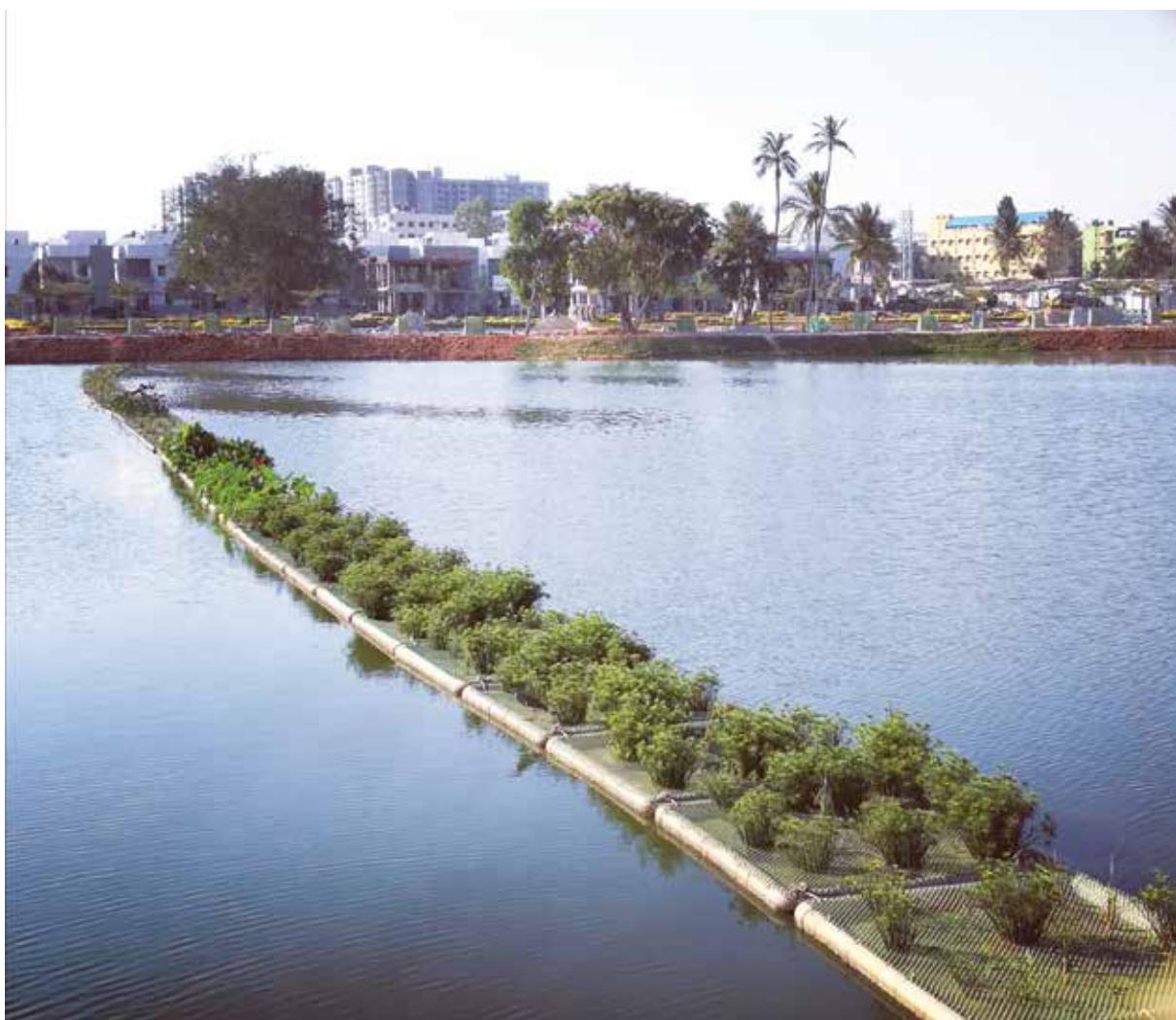
In June 2016, an Expression of Interest (EOI) for Hebbagodi Lake Rejuvenation was signed by Biocon Foundation at the 'Bring Back the Lakes' event organised by KLCDA. In October 2017, this was taken forward with the execution of a formal Memorandum of Understanding (MoU) between the following stakeholders- (i) Deputy Commissioner, Bengaluru Urban District (ii) CEO, Zilla Panchayat (iii) KLCDA and (iv) Biocon Foundation. Teams from the Environmental Health and Safety (EHS) and Central Engineering (CE) departments within Biocon were designated for project implementation, a move which resulted in significant volunteering activities by Biocon employees. Wg Cdr (Retd) G B Athri continues to volunteer his time and efforts to monitor the safety of the lake and its environs.

Intervention and Outcomes

Biocon Foundation is working towards providing a thrust to rural development to bridge the rural-urban divide across various segments in Karnataka. It is strengthening rural areas by provisioning of economic, social and physical infrastructure facilities. By way of illustration, the Foundation undertook the following initiatives for rural development in the year under review:

(a) Hebbagodi Lake is a natural water body spread over an area of 35 acres. It has two upstream catchments from (i) Shikaripalya & Tirupalya lakes and (ii) two Veersandra lakes. The outflow of this lake reaches downstream to the Kammasandra Lake. The lake has five inlets with sewage inflow and two storm-water drain inlets. At the time of the Biocon Foundation intervention, the Hebbagodi Lake was dying a slow death due to severe influx of sewage, garbage and debris from surrounding areas. The physical components of the lake such as the waste weir and draft channels were clogged.

The thick sludge of accumulated garbage and intertwined deep-rooted weeds have been cleared from the lakebed by resorting to a pulling technique by tying ropes around the roots and using boats and earthmovers. Many bar screens have been installed and these are periodically cleaned to filter out and prevent solid waste from entering the lake. Closed underground conduits have been created to address the issues of sewage spill and unbearable stench. The construction of a bund around the periphery of the lake has been completed and a fence erected to prevent encroachment and garbage dumping. A natural and eco-friendly method called **bioremediation** has been adopted for the treatment of sewage. This method involves the application of enzymes-microorganisms that clean up the polluted water, energy efficient **cascading aerators** and **submersible mixers** to enhance the level of dissolved oxygen in the water and **floating wetlands** treatment to further purify the water.



Before our Intervention



After our Intervention



A children's park with recreational facilities has been developed as the neighbourhood had no access to green space; additionally, saplings have been planted all around the lake. Street lights have been installed for the safety and security of the area.



Hebbagodi Lake Rejuvenation Fact Sheet

Total volume of soil used for making the bund	45,000 m ³
Total number of empty bottles recycled in floating wetlands fabrication	9500 nos.
Total number of tree saplings planted on lake bund	400 nos.
Total length of PVC pipe used for floats	1.3 Km
Total area of floating wetland created	10,890 ft ²
Total quantity of bio enzymes dosed into the sewage inlets (till March 2018)	4,03,000 litres

We have been continually sampling the water from the lake at Inlet, Middle and Outlet points and these samples are analysed in laboratories for core parameters such as pH, Total Dissolved Solids, Chemical Oxygen Demand (COD) and Biological Oxygen Demand (BOD). Analysis of data collected over time revealed that pH levels remained largely constant, indicating that the bioremediation process did not affect the property of water with regard to acidity or alkalinity. We observed a noticeable drop in the COD from 500 mg/l to 40 mg/l at the outlet. The BOD has also gone down from 250 mg/L to the level of 20 mg/L at the outlet. Significant decreases in COD and BOD levels demonstrate the positive effects of enzyme dosing and floating wetlands on the quality of water.

- (b) Sub-road construction, connecting Kyalasanahalli village which has limited amenities, and Jigani Town Municipal Corporation, which is a growing industrial area, providing for all-round socio-economic development of the village.
- (c) Commissioning of classrooms at Government Higher Primary School, Hennagara and Government Composite Junior College, Anekal to encourage school and junior college enrolment and enhance employment opportunities.
- (d) Handover of building with furniture and fixtures to the Gram Panchayat, Mangalagudda for their use in social, cultural, recreational, administrative and other activities.
- (e) Donation of furniture to Higher Primary School, Halakurki, Badami District to enhance in-school experience of students and teachers.
- (f) Donation of furniture, fixtures, electrical and medical devices to Taluka Hospital, Haliyal in order to equip the public health facility to respond to the health needs of the local population.

Rural development is an overarching thematic area which entails much more than development of infrastructure facilities in rural areas. Its development dimensions have cross-cutting inter-linkages with other activities of the Foundation and are elucidated in various other sections of this report as well.



Pivot Points

Rural development projects have far-reaching positive impacts and CSR-prompted initiatives can secure real and lasting benefits.

While cleaning of polluted water is salient to deliver on the ambitions of lake revival, creating a sense of belonging amongst stakeholders, improving governance and pursuance of regulatory norms are of vital importance in bringing sustainability to our water resources. Biological restoration techniques, such as the application of enzymes and microorganisms, mechanical aeration and deployment of floating wetlands are effective methods for improving quality of water. Public private partnership in such projects is a relevant model for achieving sustainable change.

The proof of concept established at Hebbagodi Lake has led to the initiation of further lake rejuvenation projects by Biocon Foundation. The work for restoration of Yarandahalli Lake has already begun. In the first phase of the conservation of Yarandahalli Lake project, bund strengthening, bridge construction, cleaning of inlets and installation of bar screen have been completed. Experts have been engaged in preparation of a detailed project report for the rejuvenation of this water body. Our learnings and experience of the rejuvenation of Hebbagodi Lake will significantly increase the efficiency with which we approach and manage the rejuvenation of Yarandahalli Lake.

In both these projects, the involvement of all stakeholders has been a key factor in the success of the project. Constant engagement with governmental authorities, monitoring of the lake and creating awareness among the public are some of the prime enablers of long-term sustainability.

Biocon employees have a high involvement in the community around the facility. Under the **Namma BioCommunity** initiative, employees contributed their valuable time and energy to improve environmental conditions. On Rajyotsava Day, 1st November 2018, the volunteers of Namma BioCommunity cleaned the surroundings of Yarandahalli Lake. They levelled the road, cleared solid waste and painted the walls around the lake.

For all Rural Development programs, an inclusive decision-making process is inherently complex as various social, political, religious and other rigid factors come into play. Maintaining transparency at all levels is a precondition for building trust amongst stakeholders.

Furthermore, the micro-management of programs in rural areas is challenging as it is imperative to sustain activities through village-level management. Therefore, local ownership and support play a significant role in sustaining interventions in community systems.

In view of the importance of regulatory compliance relating to such efforts and the need to provide professional and practical evidence of CSR-based multi-stakeholder partnerships in rural areas, Biocon Foundation's rural development projects have been prioritized in areas around and close to the manufacturing plants and activity areas of Biocon and its subsidiaries.





GRANT-IN-AID

GRANT-IN-AID

Baseline

A study conducted by the IBM Institute for Business Value (IBV) in collaboration with Oxford Economics revealed that 90 percent of start-ups in India fail in the first-five years due to lack of technological innovation, talent and funding among the most prominent reasons. Schedule VII, Section 135 of the Companies Act advocates the provision of financial assistance to technology incubators located within academic institutions which are approved by the Central Government.

India is diverse in almost all aspects, more so in its own traditional forms of art and craft which depicts its rich culture, tradition and heritage. Much as craft and related trade is the largest source of employment in the non-farm rural economy, workers in this sector have declined tremendously from 23.4 million to only 0.4 million during 2004–05 and 2011–12, according to the National Sample Survey. Art and craft is not just a source of employment and economic growth, but holds intrinsic and non-market value in the form of creative ideas, collective thinking, social cohesion and nation-building. Sadly, many art and craft forms are fading away and artisans are moving to alternative income generation methods which might also result in undesirable urban migration. There is a need to preserve and promote the skills and knowledge of traditional arts and crafts and interweave them in our daily lives and experiences to restore their glory.

According to the International Labour Organisation (ILO), participation in the labour force by women has declined from 35 percent to 27 percent in India during the period 1990 – 2017. According to the National Sample Survey, the female labour force participation rate declined to 31 percent in 2011–12 from 43 percent in 2004–05. Though the literacy rate amongst women (age 15–49 years) increased by almost 12 percentage points from 60 percent to 72 percent, women of the same age group who worked and got paid for their work declined from 35 percent to 29 percent over the past decade in Karnataka, as per NFHS-4 (2015–16) figures.

Bengaluru has seen a significant spike in crimes against women and children in recent years. According to a statistics of the National Crime Record Bureau (NCRB), in 2016 the city experienced 84 cases of crime against women per one lakh population. The city had reported 1,333 cases of crime against children in 2016, a more than exponential growth from 54 such cases in 2011.

Stakeholders

The major stakeholders involved are beneficiaries and their families, community, business and governing bodies, law enforcement agencies, grassroots leaders, regulator/government, donor, employees, volunteers and grantees (NGOs, academic institutions and start-ups).

Specific details of specialised stakeholder groups are illustrated below, based on the Foundation's partners in various fields of operation:

- The Institute of Bioinformatics and Applied Biotechnology (IBAB) is an initiative of Department of IT, BT and S&T, Government of Karnataka. The IBAB embraces Governing Body, Scientific Advisory Board, Faculty, Research Scientists, PhD Scholars, Research Assistants, Students, Interns and Alumni.
- Team Indus is the first of its kind entrepreneurial effort in space engineering, exploration and research.
- India Foundation for the Arts, publishers of ArtConnect and newsletters in order to disseminate information on arts to its stakeholders. The not-for-profit organisation also organises festivals, seminars and conferences on arts-related issues and provides grants to artists.
- The V. R. Deshpande Memorial Trust provides vocational skills to young women who come from weaker sections of society.
- The community of women and children covered by the Hebbagodi Police Station.

Intervention

Science, Technology & Innovation

Biocon Foundation is keenly aware of the power of technology in transforming the socio-economic indicators of the country, and therefore supports the technology-based start-up ecosystem in India. The initiative reinforces quality education (SDG 4), sustainable economic growth and productive employment (SDG 8), domestic science and technology development, research and innovation (SDG 9) and some other cross-cutting issues as well.

- a) The Institute of Bioinformatics and Applied Biotechnology (IBAB) is a Centre of Excellence for Research and Training in Bioinformatics and Biotechnology established by the Government of Karnataka. Biocon Foundation has made vital financial contributions to IBAB under its Grant-in-aid initiative to facilitate and enable education, research and entrepreneurship in Biological Sciences.
- b) Team Indus, an aerospace start-up, has been supported by Biocon Foundation to inspire space engineering, innovation and research.
- c) Science Gallery, Bengaluru is envisaged as a platform to interface between science and the arts. The Indian Institute of Science, National Centre for Biological Science and Srishti Institute of Art, Design and Technology will provide their expertise to this enterprise.

Art and Culture

The Foundation values promotion and restoration of national heritage, art and culture for which it has endeavoured to create a supportive atmosphere. India Foundation for the Arts supports “practice, research and education in the arts and culture in India”. This organisation has been financially supported by Biocon Foundation under its Grant-in-aid initiative to open doors of opportunity in the spheres of art, craft and design. The initiative contributes to quality education (SDG 4), sustainable economic growth and productive employment (SDG 8), reducing inequalities (SDG 10), protecting and safeguarding the world’s cultural and natural heritage (SDG 11) and has a positive influence on other related SDGs.

Gender Equality & Women's Empowerment

To achieve exponential social and economic advancement, it is imperative to build capacity of women and link them with the growth story of the country. Giving women a greater sense of physical security is a precondition to the establishment of an inclusive society. The concerted efforts of Biocon Foundation in the area of gender equality and women's empowerment are focussed on giving women their rightful place in the labour pool and ensuring them of safe and secure work and living environments. The ambition has taken us towards achieving good health & well-being (SDG 3), quality education (SDG 4), gender equality and women's empowerment (SDG 5), sustainable economic growth and productive employment (SDG 8), reducing inequalities (SDG 10), peace and justice (SDG 16) and other traversing areas of importance. Some of our work in this area is presented below:

- a) Biocon Foundation has constructed and equipped a women's hostel in Haliyal, in order to enable training in vocational skills for women who come from weaker sections of society at the Deshpande Rural Self-Employment Training Institute. The fully equipped hostel with necessary facilities provides an enabling atmosphere which is conducive for education.
- b) The Foundation has donated two patrol vehicles to the Hebbagodi Police Station so that enhanced surveillance can deter any threat, especially those related to safety of women and children, on the streets, roads and public places.

Pivot Points

The Foundation has stepped outside the traditional grant-making strategy and strengthened it to provide intellectual, technical and financial resources to organisations which are innovative in developing solutions for real-world problems. A due diligence process was followed in determining the risks as well as the benefits of working with a potential implementation partner. A performance-based financing model and measurement of project activities and deliverables on a regular basis was implemented.



BIOCON ACADEMY

Baseline

India has set an ambitious target to become a USD 100 billion economy in the biotech space by 2025. Presently, India's biotech industry holds only 2% of the global market share according to the Achievements Report 2017 of Department of Biotechnology, Government of India. Rigorous investing in human capital to create a competent and responsive workforce is a prerequisite for rapid growth and development of this crucial sector. The National Biotechnology Development Strategy 2015-20 aims to empower human resource scientifically and technologically. The strategy draws attention to building a highly skilled workforce, strengthening the knowledge ecosystem, enhancing research and training, and establishing Centres of Excellence in order to make India a world class hub of biotechnology.

Stakeholders

A strong collaborative network has been created to make the experience of the candidates as experiential as possible. Some of the major stakeholders are as follows:

Biocon Limited provides a unique opportunity to visit and have an experiential learning at their Manufacturing, Quality Control Analytical & Microbiology laboratories, Quality Assurance, Research & Development and Regulatory Sciences departments.

Syngene International collaborates and provides real time case trends for the students of the Clinical Development course to learn from the experts. The trainees are exposed to real time data, statistics and trends in the areas of clinical research. The students directly deal with the CRFs (case report forms) and get acquainted to ICFs (informed consent forms).

Thermofisher gives participants the opportunity to practice the techniques of DNA, RNA extraction, preparing own scripts, amplification, cloning and expression.

Biozeen focuses on training in setting up, cleaning and sterilization of lab-scale, 40L and 125L pilot bio-fermentors, inoculation and plotting a microbial growth curve.

Narayana Health provides training in patient recruitment, test drug delivery, IWRS, bedside observations, sample collection and transport to students of the clinical development course.

Ramanan and team provide a typical Campus-to-Corporate training suite, which includes presentation skills, personal branding, working in teams, interview skills and other soft skills.

Biocon Foundation is the prime benefactor of grants to Biocon Academy. The Foundation also provides an opportunity of a short social immersion to our trainees to inculcate social sector awareness.

Intervention

The objective of Biocon Academy is to **Empower** the eligible graduates by **Leveraging** their potential to **Persevere** and unlock the opportunities through **Innovation** and making a **Connect** between sciences and its application to **Transform** lives.

There are gaps that exist between academic deliverables and the industries' expectations when it comes to employing candidates who are fresh graduates. There exist gaps that include and are not limited to:

- Techniques to technology
- Experimentation based learning to process based understanding
- Working as an individual to working in teams
- Communication skills

The mission of Biocon Academy is to provide high end training to eligible candidates of Biosciences and Pharmacy streams to make them industry ready.

Biocon Academy's four pillars of the most innovative pedagogy include:

- Strong theoretical background created by renowned faculty
- Experiential learning in state-of-the-art facilities at Biocon Limited and Syngene International
- Hands on training in key techniques and technological applications
- Well-knit professional skills training focused on various aspects of communication and team building



Biocon Academy has been conducting the following courses to help Biosciences and Pharmacy students become readily employable:

- I. **Biocon KGI Certificate Program in Biosciences:** Biocon-KGI Certificate Program is Biocon Academy's flagship Program in Biosciences started in 2014 and the following aspects have been the reason for its success which is reflected in consecutive placement record of 100% for 10 batches:
 - a. Well balanced theory to experiential learning components
 - b. Structured hands on training suited to the needs of the aspirants to make a quick start in their careers
 - c. Apt communication skills to help the participants to improve articulation
- II. **Biocon KGI Certificate Program in Bioscience Management:** Biocon Academy introduced a new specialized 'Certificate Program in Bioscience Management' in collaboration with its Education Partner KGI, for working professionals from Pharmaceutical & Bio-Pharmaceutical Industries.
 - a. The course is structured to help the managers to get connected to the business side of technical operations
 - b. The course covers operations management, innovation management, bioscience market and strategies
 - c. Activity driven courses include daily quiz, case study discussions, debates, assignments and projects
- III. **BITS Biocon Certificate Program in Applied Industrial Microbiology:** Biocon Academy partners with Birla Institute of Technology & Science (BITS), Pilani- a leading Institute of Higher Education and a deemed University to deliver a first of its kind Certificate Program in Applied Industrial Microbiology. The special features are as below.
 - a. Strong theoretical foundation created by experienced faculty
 - b. Experiential learning at the state-of-the-art microbiology laboratories of Biocon Limited and Syngene International
 - c. Hands on experiences in key techniques in microbiology at Biozeen

After the success of Biosciences and Applied Industrial Microbiology, the focus of Biocon Academy shifted to the Pharmacy sector in order to train pharmacists in the areas of clinical trials to enable them to find meaningful employment in this domain.

Biocon KGI Certificate in Clinical Development Program is a full time program over 16 weeks, aimed to empower pharmacists and bioscience graduates with practical knowledge of design, implementation and statistics. The features are:

- a. Highly focused program on clinical trials
- b. Experiential learning at Syngene International
- c. Hospital rounds at Narayana Health

The following course is to help the faculty to enhance their practical knowledge by exposing them to the industrial processes and regulatory paradigm.

Biocon Academy Faculty Development Program is a first-of-its-kind initiative to empower Biotech Faculty from various educational institutes by helping them upgrade their knowledge of emerging industry-specific technologies with:

- a. Exposure to industry processes
- b. Exposure to the regulatory framework associated with bio-manufacturing
- c. Visit to key technical domains including R&D, Manufacturing and Quality

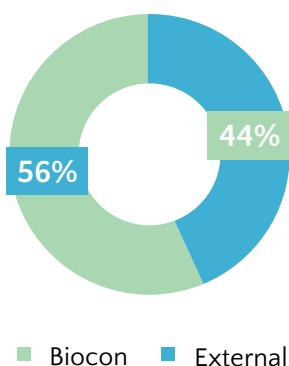
Outcomes

Placement Overview

Course	% Placement
Biocon KGI Certificate Program in Biosciences : Batch 1-10 Batch 11 in progress	100%
BITS Biocon Certificate Program in Applied Industrial Microbiology: Batch 1& 2: 100% Placement Batch 3 in progress	100%
Biocon KGI Certificate Program in Clinical Development Batch 1	100%

More than 40 companies across India have signed up and participated in the placement drive. Biocon Academy contributes to the expansion of talent pool in the Biotech segment.

Placement Scenario



As the course progresses, students are acquainted with the various departments of the organization and have a better understanding of their core competencies which helps them at the time of placement.

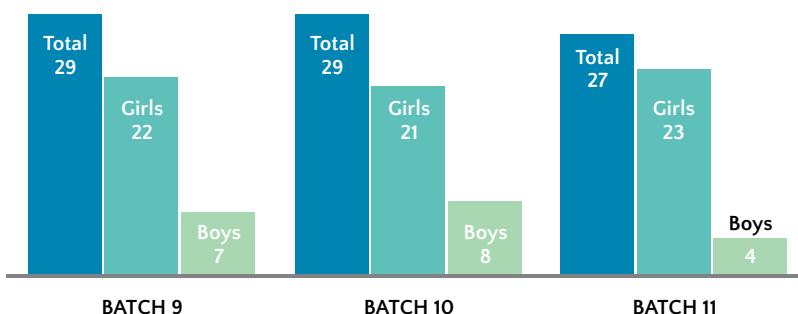
Placement Overview



Gender Diversity

Dr.Kiran Mazumdar Shaw is the Chief Mentor of Biocon Academy and encourages the participation of women in this initiative. A large number of women students have been trained and been given meaningful employment to pursue their careers.

Gender Diversity



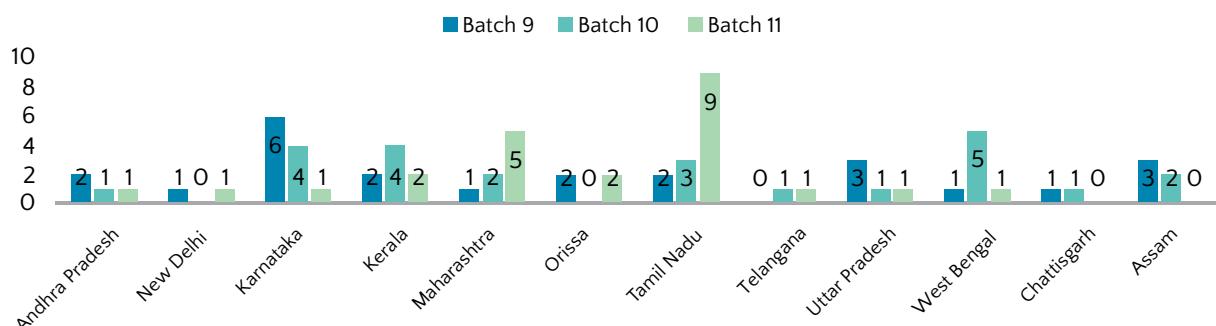
Wide coverage

Biocon Academy has attracted the attention of students from all over India. Over the years, the diversity has significantly increased.

In addition to the wide demographic distribution of Indian students, Biocon Academy has trained 13 Malaysian students this financial year. We also had students who have completed their post graduate degree in reputed universities abroad who trained at our facility. These include:

- University College Dublin, Ireland
- University of Skovde, Sweden.

Demographic Distribution of Students Place of Origin





Pivot Points

Following are the specific changes made in the existing programs to make them more effective:

I. **Biocon KGI Certificate Program in Biosciences** (18 weeks)

The progress we made in this flagship program of Biocon Academy are:

- Partnering with ThermoFisher for hands on training in molecular biology techniques
- Improved soft skills training through external evaluation and one to one communication coaching
- Increased guest lectures to give more exposure to other industries

II. **Biocon KGI Certificate in Clinical Development Program** (16 weeks) This program is newly launched with the following features:

- Highly focused program on clinical trials
- Experiential learning at Syngene International
- Hospital rounds at Narayana Health

III. **BITs Biocon Certificate Program in Applied Industrial Microbiology:** Biocon Academy partners with Birla Institute of Technology & Science (BITS), Pilani- a leading Institute of Higher Education and a deemed University to deliver a first of its kind Certificate Program in Applied Industrial Microbiology.

- Additional case studies and videos were introduced
- Feedback from students on lectures delivered by subject matter experts was introduced
- Presentations were made more crisp and Industry-oriented

IV. **Biocon Academy Faculty Development Program:** a first-of-its-kind initiative to empower Biotech Faculty from various educational institutes by helping them upgrade their knowledge of emerging industry-specific technologies. The second batch will be launched in June

- More guest lectures to be introduced
- Content would be reviewed and improved based on feedback from first program

Biocon Academy is working towards adding innovative programs which include and not limited to:

Quality Control Analytical: program aimed at training the chemistry and biosciences candidates on the principles and applications of key instruments used in quality control function

- Analytical instrumentation
- Qualification and validation
- Application and reporting

MCADDI 2019: Biocon Academy, in association with American Chemical Society Medicinal Chemistry Division and Pharma Innovation Sourcing Center LLC USA, proudly announce Medicinal Chemistry and Drug Discovery India 2019 (MCADDI 2019), scheduled to be conducted in early 2019.

- a residential course in medicinal chemistry and drug discovery
- co-sponsored by the American Chemical Society Division of Medicinal Chemistry and the International Union of Applied and Pure Chemistry (IUPAC)

LEARNING AND DEVELOPMENT



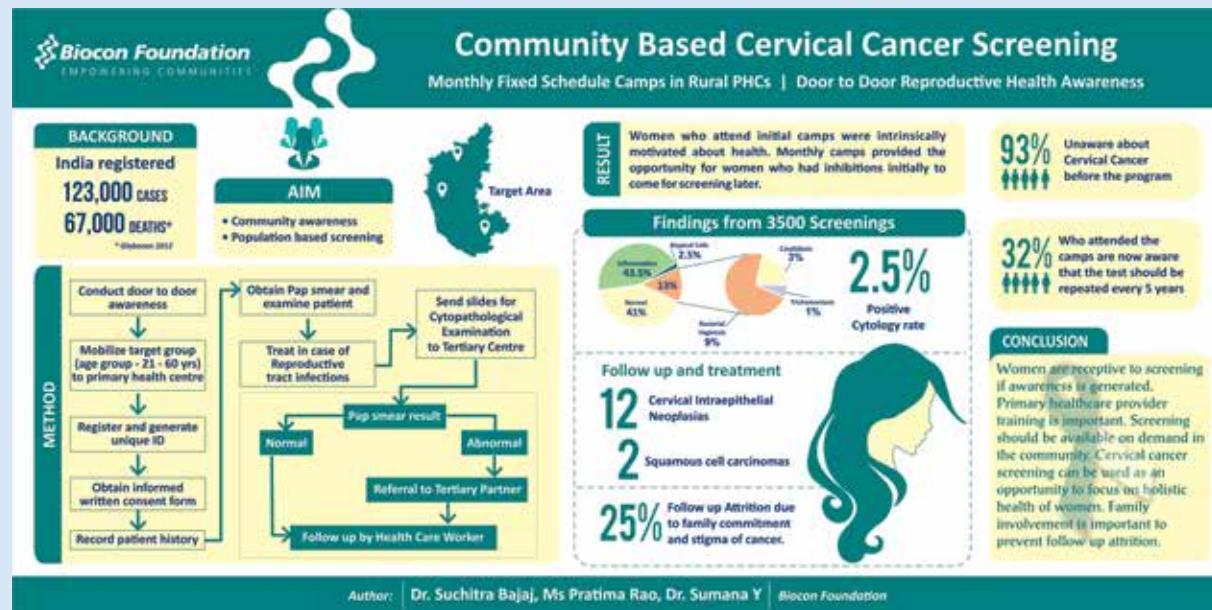
Learning and Development is a continuous process at Biocon Foundation. Insights and feedback from the field help us fine tune our programs for sustainability and scale. Parallel to this, knowledge and skill of the workforce is improved through opportunities to attend conferences and workshops. This improves the overall performance of the individual as well as the team. The exposure is an important tool to check that our programs align with the protocols, strategies and compliance recommended by statutory bodies and experts in the field. Learning and development opportunities are decided based on the roles and responsibilities of the individual.

Lectures and Presentations

Dr Praveen Birur (Lead, Oral Cancer Screening, Biocon Foundation) was invited to speak at these forums:

- 6th World Congress, International Academy of Oral Oncology
- Workshop on "Integrated Concept of Tobacco and Oral Cancer"
- Launch of an Independent Oral Cancer Task Force to downstage oral cancer
- Workshop on "Oral Cancer Prevention" at Nirman Bhavan, New Delhi

Dr Suchitra Bajaj (Senior Manager, Healthcare) delivered a poster presentation at the annual conference of the Indian Society for Colposcopy & Cervical Pathology



Community Health Workers

- Workshops for health workers were conducted in collaboration with the Department of Community Medicine, St. John's Medical College & Hospital for:
 - Family planning methods
 - Screening of common cancers in women
 - Common conditions and the role of a health worker in mental health programs



- A workshop on HIV in children including screening tools and key messages was conducted for health workers working with malnourished children in Bagalkote. This was in collaboration with Karnataka Health Promotion Trust
- Training for Oral Cancer Screening – a workshop was conducted by Biocon Foundation for health workers in Dimapur, Nagaland to use the mHealth application for capture of data and intra-oral images of patients and to recognize symptoms and signs of oral cancer. A similar workshop was conducted in Sulebhavi, Karnataka to use digital pen & sheet for house-to-house survey to identify the high risk group

Medical Officers and Paramedical staff

- HIV, HCV and Co-infection; a medical education program for primary physicians by Gilead Lifesciences
- Cell counter and semi-auto analyzer calibration and testing for Lab Technicians

Program Managers

- Social Return on Investment training workshop conducted by Social Audit Network
- Indian Society for Colposcopy and Cervical Pathology annual conference
- World Oral Cancer Congress at the International Academy of Oral Oncology

Information Technology Managers and Officers

- Information Security Management System Training
- Source Code Management Training
- NASSCOM Foundation CSR Leadership Conference
- Jagriti Enterprise Mela
- MedTech Expo

AWARDS & ACCOLADES

Over the year, Biocon Foundation has received recognition from important and influential government and non-government organisations including the corporate sector. Awards and certificates of appreciation were conferred for the execution of the most innovative, sustainable and impactful CSR programmes of the year in addressing pressing social, environmental and economic issues. The details of the awards and appreciation bestowed on Biocon Foundation in the year under consideration are as follows-



- **Winner**, Indian Drug Manufacturers' Association (IDMA) Corporate Citizen Award 2017
- **Winner**, The Social Change Award 2017
- **Winner**, CSR Health Impact Award- India Health and Wellness Summit 2017
- **Winner**, CSR Excellence Award 2017- CSR Health Project of the Year- IICSR Conclave 2017
- **1st Runner-up**, CSR Journal Excellence Awards 2017
- **Certificate of Appreciation** from Hennagara Gram Panchayat for construction of Hennagara school
- **Certificate of Appreciation** from the DySp Office, Anekal Sub-Division & Hebbagodi Police Station for cooperation
- **Letter of Appreciation** from Chief Medical & Health Officer, Sawai Madhopur for delivering exceptional health services through Soorwal & Shyampura PHCs
- **Award & Certificate** of Appreciation from Government of Rajasthan to Soorwal PHC for exemplary services in Pradhan Mantri Surakshit Matritva Abhiyan
- **Award** from Chief Medical & Health Officer, Jhalawar to Mathania PHC for commendable work in Pradhan Mantri Surakshit Matritva Abhiyan
- **Certificate of Appreciation** from Chief Medical & Health Officer, Sawai Madhopur to Soorwal & Shyampura PHCs for outstanding work in Family Planning Programme

Biocon Foundation

In the News

Biocon's Corporate Social Responsibility initiatives through the Foundation have been recognized as being responsible and inclusive. Various media stories during FY18 talked about programs like eLAJ Smart Clinics, Cervical & breast cancer screening, Chinnara Ganitha, Management of Malnutrition in Bagalkot, Sanitation facilities, Community development work, Project One, Hebbagodi lake rejuvenation etc. In-depth stories on key projects in prime publications like The Times of India, Economic Times, Bangalore Mirror, Prajavani, Vijaya Karnataka, Vijayavani etc... during the financial year captured significant mindshare.

We hope our inspirational CSR project stories will encourage others to join hands with us in these initiatives to make a larger societal impact.



ഓൺ കാൻസർ ടെന്യാൻ ടാസ്ക്‌ഫോറ്മ്

ଶ୍ରୀ ପାତ୍ରକାଳୀ: ଆଜିରାହାନେ ମୁଣ୍ଡ ଏବଂ
ବ୍ୟାପକିତାତ୍ମକ ବ୍ୟାପାରରେ ଯାହାମାତ୍ରି ଏବଂ
ଅନୁଭବ ବାବାକିଲେ ଆମେବୁଦ୍ଧିର ଗାଁର
ବ୍ୟାପକିତାତ୍ମକ ବ୍ୟାପାରରେ ଯାହାମାତ୍ରି

କାହିଁ ପରାମର୍ଶଦାତାଙ୍କର ପାଇଁ ପରାମର୍ଶଦାତାଙ୍କର
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गर्भवती महिलाओं का किया स्वास्थ्य परीक्षण
प्रधानमंत्री सुरक्षित आत्मन और देश के लिए जल्दी करें।

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मुख्यमंत्री नरेंद्र मोदी की दृष्टि जारी

जैसे वहाँ को प्राचीनतमी संस्कृत मालायुग विद्या के अन्तर्गत दर्शनीय तात्पुरी की गणितशक्ति का विविधानविद्यार्थी एवं स्वामीपाल विद्यार्थी विद्यार्थी। जाति के दौरान एवं वह विद्यार्थी में जनने पर उच्चतम् अवधारणा दृष्टिकोण से दर्शन होता था। विद्यार्थी में दृष्टिकोण से जननी जन्मना विद्यार्थी के बलादार एवं वाक्यादार विद्यार्थी ने विद्यार्थी माली की गणितशक्ति विद्यार्थी के विविध विद्यायां में

ज्ञान विद्या के लिए अपनी जीवन को अपनाया जाता है। इसके लिए उन्हें अपनी जीवन की जिम्मेदारी और उत्तमता की जिम्मेदारी बढ़ाव दी जाती है। इसके लिए उन्हें अपनी जीवन की जिम्मेदारी और उत्तमता की जिम्मेदारी बढ़ाव दी जाती है।



परिवार कल्याण व चिकित्सा क्षेत्र में
उत्कृष्ट कार्य करने वाले सम्मानित

World Cancer Day observed in Dimapur

CIHSR oral cancer screening report released

DIMAPUR, NOVEMBER 7: Observing World Cancer Day

goes unnoticed. As per the study conducted at Diphupar area, over 190 shops still sell tobacco products even though it has been declared a Tobacco Zone.

The report also showed an increase in the age of

schools and 9 colleges were also part of the case study along with the public of Diphupar area.

Dr Roshan informed that the case study was conducted via private interviews and the data securely and confidentially uploaded on a mobile app. He also

मुख कैंसर के मामले सबसे ज्यादा, 11.3% मरीज



पूर्ण रूप से बंद हो तंबाकू का उपयोग स्वतंत्र ओरल कैंसर टास्क फोर्स

परिषद न्यूज नेटवर्क

rajasthanpatrika.com

बंगलुरु, कैंसर चिकित्सकों ने ओरल कैंसर से बचाव, प्रबंधन, उपचार व जागरूकता के लिए एक स्वतंत्र ओरल कैंसर टास्क फोर्स का गठन किया है।

प्रवीण चौधरी व खुद डॉ. किरण मजूमदार जॉ शामिल हैं।

डॉ. जॉ ने कहा, देश के पुण्यों में ओरल कैंसर सबसे आम कैंसरों में से है। कैंसरों में 11.3 फीसदी हिस्सेदारी ओरल कैंसर की है। अन्य कैंसरों की तुलना में ओरल कैंसर को आसानी से पहचाना जा सकता है। लोगों को जागरूक व शिक्षित करने की जरूरत है। जिसके जिम्मेदारी इस टास्क फोर्स ने उठाई है। इसके अलावा गढ़ीय कैंसर एंटीकरण की भी

ಒಳಿಯ ಕ್ರಾನಿಕ್ ನಿಯಂತ್ರಣಕ್ಕೆ ಕಾರ್ಯವಹಿ ರಚನೆ



(ಲಭ್ಯೋದ್ಯ) ಡಾ. ಹಂಡಿಪ್ಪ ಬಂಧುವರ್ಮಾ ಮತ್ತು ಮಾರ್ತಿನ್ ಕ್ರಾನಿಕ್ ನಿಯಂತ್ರಣಕ್ಕೆ ಕಾರ್ಯವಹಿ ರಚನೆ ಮಾಡುತ್ತಿರುತ್ತಾರೆ.

Ban tobacco product ads: Kiran

Bengaluru: Why can't advertisements on harmful tobacco products be banned when alcohol-related ads are banned? A poser to this effect by Biocon managing director Kiran Mazumdar-Shaw triggered a debate on Saturday over policy.

Mumbai, said chewing tobacco products are sold in the name of mouth fresheners. "We oppose them being sold as mouth fresheners as it is misleading and causes oral cancer. While India accounts for 40%

This lake can breathe easy

Bangalore Mirror Bureau | Updated: Jun 27, 2017, 21:16 IST

By Kumaran P



ACTIVISTS & RESIDENTS
PAINTSTAKINGLY resurrecte
THE once-moribund water body
AT HEBBAGODI

Thanks to a bunch of residents, activists and organisations, the Heggadodi Lake on Hosur Road is getting a new lease of life. Nearly a year ago, it was in a mess: sewage, mounds of garbage and unbearable stench. By the year-end, activists hope, the lake will go back to its original shape — and beauty.

The revival of the 34-acre lake began in November 2016 with the leading biopharmaceutical company Biocon leading from the front.

Biocon roped in various stakeholders like Karnataka Lake Conservation and Development Authority (KLCPA), district commissioner (Govt. of Karnataka), Heggadodi City Municipal Corporation (CMC) and Karnataka State Pollution Control Board (KSPCB) to take the lake out of the mess.

"The amount of work we have been doing here is tremendous. An expression of interest was signed at a workshop by the Karnataka Lake Conservation and Development Authority (KLCPA) last year. We are keen on bringing back the life of the lake as early as possible," said Lourd Raj Joseph, vice-president and head, central engineering & EHS, Biocon.

Removal of weeds was the biggest challenge when Operation Clean-up began. "Cutting out weeds and debris was a major task. We first started removing the floating garbage before trying to clean up the bottom of the lake. It was tough. We did not even have a path to walk around the lake before," said Joseph.

Activist and wing commander G B Athi (retd) chipped in with his expertise which made a huge difference. Athi said, "We have adopted a natural method by using small boats (theppa) to remove weeds around the lake bund. There were no lake bunds. The stench emanating from the road on one part of the lake and then we started fencing the lake. Even LED street lights were installed."

"Expert consultants were engaged to do an extensive study and analysis to prepare a Detailed Project Report (DPR) and the same was submitted to the Lake Development Authority. Then, a resolution for the lake rejuvenation was passed in Heggadodi town municipality council in November 2016. Later, a technical meeting of KLCPA was convened in March 2017 and after that multiple reviews took place and the DPR was approved during May 2017. I must say wing commander (retd) G B Athi was a key person in getting this done and he has been a constant support in getting any approval from government from the beginning," added Joseph.

G B Athi said, "The inlets were cleaned and conduits were set up. We also cleared the area where there was a huge heap of garbage." Then they started developing a park and planted saplings.

Kiran Mazumdar Shaw, chairperson and managing director of Biocon, who is closely monitoring the lake revival programme, said, "Biocon has taken the initiative to contribute to the lake revival mission in Bengaluru by volunteering to revive and rejuvenate the Heggadodi, Bommasandra, and Kammalanda lakes. We have submitted a DPR to authorities concerned and our teams are working energetically with diverse stakeholders to restore the ecosystem of the Heggadodi Lake. I believe all stakeholders, including civic bodies, government agencies, citizens and corporates, need to come together if we were to achieve the desired results. Only a concerted effort can restore Bengaluru lakes to their erstwhile glory."

Government agencies too showed great interest.

Lakshman, chairman of KSPCB told Mirror, "What the stakeholders are doing to the lake is remarkable. I know how the lake looked before and when I look at it now, it's definitely a positive sign which we all need to adopt and tread ahead. I have observed few borewells near the bunds and buildings. I will issue notices to all such violators soon."

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