Our Reach

Administration

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

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

The members of the Biocon Limited CSR Committee are:
- Ms Mary 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
- Professor Catherine Rosenberg
- Ms Vinita Bali

The Mission Director of Biocon Foundation is Ms Pratima Rao

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

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

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

The current pandemic has re-emphasized the need to align economic pursuits with wider societal benefits, thereby creating shared value.
Dear Stakeholders,

Between the start of a promising new decade and the end of the reporting year, the COVID-19 pandemic has ripped through the world and exposed all our vulnerabilities as a human race. The time has come to carefully reconsider the future and prepare a viable strategy to approach the new normal with which we are confronted. It is now more important than ever before, to put social needs at the centre of economic pursuit and work towards the long-term benefit of society.

At Biocon Foundation, due to the nature of our existing programs, we are fortunate that we have not had to make significant course corrections due to the drastic change in events; we have only had to modify timelines. This is largely due to the fact that our programs focus on creating shared value and align strongly with Sustainable Development Goals.

Primary Healthcare

Our programs focus on creating shared value and align strongly with Sustainable Development Goals.
An effective primary healthcare system plays a vital role in combating disease. The Government Primary Health Centre (PHC) is the ideal vehicle of the public health system to deal with the pandemic. However remote and resource constrained the location, the PHC enables decentralising responsibilities and empowering district administrations to manage the disease by tracing, tracking, isolating and treating infected persons.

Our primary healthcare model of eLAJ Smart Clinics supports the public healthcare delivery in Karnataka by equipping PHCs with digital records that can efficiently monitor patients and providing free diagnostic services. The real-time analytics and dashboard, report specific disease profiles for each PHC. We have equipped 23 eLAJ clinics in seven districts of Karnataka which serve over one million people.

A significant program that we initiated towards the end of the year, was the forging of a partnership with National Institute of Mental Health & Neurosciences (NIMHANS) to integrate mental health as an essential component of primary healthcare. We will work towards strengthening the delivery of mental healthcare which is now more necessary than ever, at a time when so much uncertainty may lead to high levels of anxiety.

**Integrated Screening for Non-Communicable Diseases (NCDs) Including Common Cancers**

India is staggering under the double burden of communicable and non-communicable diseases. High mortality due to communicable diseases is compounded by the rise in incidences of NCDs such as cardiovascular disease, diabetes and common cancers. The COVID-19 pandemic has brought into sharp focus the vulnerability of people with comorbidities arising from NCDs, making our efforts all the more crucial. In the year under review, we have conducted two impactful integrated screening programs in two very different locales.

The first was a program that we ran in partnership with Christian Institute of Health Sciences & Research in the remote government Community Health Centre (CHC) at Medziphema village of...
Dimapur District in Nagaland. Our team of health workers were trained to counsel and screen the population for NCDs and refer them to the CHC for continuum of care. The population-based screening was particularly necessary as the difficult terrain discouraged the rural population from seeking medical services. We have also provided the CHC with diagnostic facilities to ensure evidence-based care.

India is staggering under the double burden of communicable and non-communicable diseases.
The second program was the integrated screening for NCDs conducted for Pourakarmikas, the municipal sanitation staff in 44 wards of the West Zone of the Bruhat Bengaluru Mahanagara Palike (BBMP). When the rest of the country was in lockdown and in the safe environs of their homes, the sanitation staff worked without a break to keep the city clean and safe. They are our first line of defence and are most vulnerable, given the nature of their work. Between August and November 2019, we were able to complete the counselling and health screening of over 2000 Pourakarmikas. BBMP doctors of each ward were provided with a list of patients who required follow up. We were able to overcome the challenges of schedules and locally available clinical facilities due to the perfectly synchronized efforts of BBMP, Bangalore Political Action Committee (BPAC) and KLES Institute of Dental Sciences. the program has resulted in a replicable model for other voluntary organisations to work with municipal corporations to take better care of our sanitation staff.
Through relevant health education and activities, children will be equipped to cope with life-threatening situations.

Primary & Secondary Education

For the very first time, school education has been disrupted by closures the world over. Through relevant health education and activities, children will be equipped to cope with life-threatening situations. The right choice of content will contribute in imparting a vital life skill.

Under the expert mentorship of Dr Devi Prasad Shetty and his team at Narayana Health, we delivered a unique health education program, designed to educate students about hypertension and its risk factors. The CHAMPS (Child Health Activists Mentoring and Promoting Health in Society) program was implemented by Agastya International Foundation via a mobile science lab provided by Biocon Foundation.
Environmental Sustainability

The Foundation continued its work of lake restoration through the lockdown. Special passes were obtained and work continued uninterrupted. Apart from the improvement to the environment, the effort ensured the retention of daily wage labourers, who suffered the most during this period.

In another similar meaningful initiative, the Foundation team developed training material and participated as resource persons in Train the Trainer programs organised by the Department of State Educational Research & Training, Karnataka to enable teachers in government schools to impart life skills to adolescents and train them in emergency first aid.

In projects as complex as lake revival, it is important to share our learnings and learn from others.
COVID-19 Response

Disaster management is an essential part of governance, now and in the future as we will continue to be confronted with new challenges. Experience teaches us that lack of preparedness increases the magnitude of devastation. In 2019, we were better prepared and more effective in responding to the floods that devastated Kerala and Karnataka. However, though nothing could have prepared us for the pandemic, we were able to respond quickly by providing dry ration kits to thousands of people in the most vulnerable segments in and around Bengaluru who were critically affected by the lockdown. At a time when all resources were constrained, Biocon employees immediately rose to the occasion and provided volunteers to complete packing and transportation of dry ration kits. This effort serves as a fine example of creating shared value amongst various stakeholders.

Syngene International Ltd has committed a significant part of its CSR contribution towards setting up an ICMR approved COVID-19 testing laboratory based on RT-PCR technology to augment the testing in Bengaluru. The lab was set up in a record time of six weeks, which exemplifies how scientific capabilities effectively respond to health emergencies.
In the year ahead, we will contribute towards programs that will mitigate the effects of the Coronavirus. In particular, our interventions in healthcare and education will be streamlined to meet the demands of emerging exigencies.

As events unfold, we will see that Corporate Social Responsibility is changing, moving from merely projecting an empathetic public image to becoming a deeper and more lasting process of creating shared value. The way forward is to redefine stakeholder engagement through social and environmental innovation. Organisations will have to reengineer business models to address social issues which can no longer be wished away.

We are as always, grateful to our partners who have collaborated with us in our endeavour to create shared value.

With best wishes,

Kiran Mazumdar-Shaw
Founder & Managing Trustee
Bengaluru, May 30, 2020
Sustainable Development Goals are a set of 17 goals set by the UN to transform the world by 2030.

Biocon Foundation Programs

- **No Hunger**: Midday Meal, Curbing Malnutrition, Tackling Anaemia
- **No Poverty**: Primary Healthcare, Nutrition, WASH
- **Education For All**: Learning Resources, After-School Enrichment, Grants to Institutions, School Infrastructure, WASH
- **Health & Wellbeing For All**: Primary Healthcare, eHealth, Management of NCDs, Child-Mediated Health Promotion, Women's Health
- **Gender Equality & Women's Employment**: Vocational Training, Women's Safety, Women's Health
- **Water & Sanitation For All**: Lake Rejuvenation, WASH
- **Resilient Industry, Infrastructure & Innovation**: Science, Technology, & Innovation, Vocational Training, Rural Development, WASH, Lake Rejuvenation
- **Inclusive, Safe, Resilient And Sustainable Cities & Human Settlements**: Women's Safety, Children’s Park, Lake Rejuvenation, Rural Development
- **Peace, Justice & Strong Institutions**: Women's Safety, Rescue & Police Support
- **Sustainable Consumption & Production Pattern**: Lake Rejuvenation
- **Reduce Inequality**: Women's Health, Child Health, Geriatric Health, Mental Health, Vocational Training, Women's Safety
- **Sustainable & Inclusive Growth And Full & Productive Employment**: Vocational Training, Art & Culture, Science, Technology & Innovation, Women's Safety
- **Partnership For Sustainable Development**: Government, Tertiary Hospitals, Research Institutions, Data Sharing, Capacity Building, Grant-in-Aid, Employee Volunteerism
Biocon Foundation’s Programs Align with the Activities Represented Below.

- Eradicating Hunger & Malnutrition
- Promotion of Health & WASH
- Rural Development
- Promotion of Education
- Promotion of Gender Equality & Women’s Empowerment
- Ensuring Environmental Sustainability
- Disaster Relief, Rehabilitation & Reconstruction
- Funds to Incubators
HEALTHCARE
Vitalising Disease Prevention & Management
Rationale

As India is experiencing a third wave of digital transformation, electronic medical record systems are no longer unattainable. However, the low utilisation of such technological innovations in healthcare is a matter of concern. There is a vast untapped potential to harness large amounts of data produced in the primary healthcare space to improve productivity through efficient data analysis.

Some of the latest trends suggest that the digital trajectory of the country is promising. The NITI Aayog proposed National Health Stack (NHS), a framework for shared digital infrastructure, aims to create digital health records for the whole population by 2022. The National Digital Health Blueprint (NDHB) adds further impetus to converge digital platforms and build a health ecosystem to achieve the goal of Universal Health Coverage (UHC).

Approach

In pursuit of technology enabled innovation in healthcare, Biocon Foundation developed the eLAJ Smart Clinic model, a real-time health information system which was integrated into Primary Health Centres (PHCs) of the Government of Karnataka. Focused on individual patient needs, the innovation stores patient records and facilitates seamless information flow to improve physician productivity and operational efficiency. It promotes opportunistic screening in routine clinical practice. The provision of a trained laboratory technician, haematology and biochemistry testing equipment, and supplies provides high-quality diagnostic capabilities.
Developments

In the year under review, the eLAJ Smart Clinic process has led to better operations management at the PHCs, improved patient experience, scaled reach of intervention to benefit more people, and the creation of a technology roadmap to meet future needs. Diagnostic facilities have been added at 5 PHCs across 3 districts, bringing the number of eLAJ-enabled centres to 23, which includes 20 PHCs of the government and 3 clinics of Biocon Foundation, across 7 districts of Karnataka.

The eLAJ dashboard improves analytical capabilities as it organizes massive amounts of information into actionable insights in real time. The longitudinal patient data facilitates preventive actions against non-communicable diseases (NCDs) and enables risk factor surveillance.
On account of high prevalence of behavioural risk factors and the need for additional support for management of NCDs in Nagaland, a program to deliver community screening and preventive health services is underway. The key attributes of the program are health education, door-to-door screening, and clinical care at the NCD desk set-up at Community Health Centre, Medziphema, with the technical and financial support of the Foundation.

- **Bengaluru Urban** - Mallathahalli, Singasandra, Hebbagodi, Jigani, Chandapura & Attibele
- **Chikkaballapur** - Dibbur, Manchenahalli & Jangamakote
- **Kolar** - Lakshmipura & Ronuru
- **Tumakuru** - Huliyaru & Kuripalya
- **Bagalkote** - Kaladgi, Pattadakal, Sulebhavi
- **Dakshina Kannada** - Bondel & Bajpe
- **Yadgir** - Kaulura & Kotagera

eLAJ has led to better operations management at the Primary Health Centres and improved patient experience.

The program in Nagaland encompasses population-based screening, and medical care at the NCD desk set-up at Community Health Centre, Medziphema.
Outcomes

Karnataka

Service utilization
Patients benefitted: 80,000
Newly registered patients: 50,000
Patient visits: 1,50,000

Screening results
Blood pressure measurements: 1,29,166
High blood pressure (≥ 140/90 mmHg) instances: 30,725 (24%)

Random blood sugar measurements: 1,51,751
High random blood sugar (≥ 140 mg/dL) instances: 26,138 (17%)

Nagaland

Population-based screening
Beneficiaries: 1,593
Overweight (23 - 25 kg/m²): 16%
Obese (≥ 25 kg/m²): 29%
Current smoker : 20%
Former smoker : 8%
Current tobacco chewers: 37%
Former tobacco chewers: 6%

Service utilization at NCD desk
Patient visits: 2,689

Challenges

There is a resistance to the adoption of digital technologies in primary healthcare. This acts as a deterrent to capitalise on the massive data generated in the first-tier of the health system to deliver data-driven and personalised care. Seamless flow of information in an integrated environment can reduce costs while improving patient care. Digital platforms should be designed to integrate rather than operate in silos. In this respect, mobile health (mHealth) platforms are ubiquitous and we are evaluating a new android version of the eLAJ software.

Acknowledgement

We value our partnership with Department of Health and Family Welfare, Government of Karnataka who have come forward to implement digital strategies to reinforce service delivery. Our collaboration with Christian Institute of Health Sciences and Research, Nagaland will result in a proof of concept for screening, testing and treatment of non-communicable diseases in the Northeast, both in population-based and opportunistic settings.
Rationale

Oral cancer is the most common malignancy among males while breast and cervical cancers are the most common malignancies among females in India. The three cancers result in a staggering one-third of the total cancer burden in the country.

According to National Health Profile, the screening results suggest that India experienced an increase of common cancers cases by 136% during 2017 - 18. In the year 2018, 0.26% of the screened individuals were diagnosed with common cancers, as against 0.11% in 2017. According to National Cancer Registry Program of ICMR, India will experience an incidence of more than 2.25 lakhs tobacco-related cancers in 2020, an increase of 18% from 2010. The national strategy for artificial intelligence of the NITI Aayog has identified early detection of common cancers as one of the focus areas for AI intervention.

<table>
<thead>
<tr>
<th>State</th>
<th>Common Cancers Diagnosis*</th>
<th>Tobacco use among adults (age 15 - 49 years)**</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Male</td>
</tr>
<tr>
<td>Karnataka</td>
<td>0.85%</td>
<td>34.3%</td>
</tr>
<tr>
<td>Nagaland</td>
<td>0.96%</td>
<td>69.2%</td>
</tr>
<tr>
<td>Assam</td>
<td>0.16%</td>
<td>63.9%</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>0.24%</td>
<td>36.5%</td>
</tr>
<tr>
<td>Punjab</td>
<td>0.11%</td>
<td>19.2%</td>
</tr>
<tr>
<td>Uttar Pradesh</td>
<td>0.07%</td>
<td>53%</td>
</tr>
<tr>
<td>India</td>
<td>0.26%</td>
<td>44.5%</td>
</tr>
</tbody>
</table>

*NPCDCS screening data published in National Health Profile 2019
**National Family Health Survey 4

Approach

The Foundation has invested in community screening programs for the three most commonly occurring cancers. The oral cancer screening (OCS) program has made great strides to put combined efforts for prevention, treatment and research.

In a secure network, the mHealth creates a robust electronic health record which includes intra-oral image-based data for active treatment and surveillance.
The asymptomatic attribute of oral cancer in the early stages results in delayed presentation and late-stage diagnosis and therefore high morbidity and mortality. Our technological innovation supports cancer care practices by mobile devices (mHealth). In a secure network, it creates a robust electronic health record which includes intra-oral image-based data for active treatment and surveillance. The health workers are trained in oral cancer prevention, early detection and subsequent treatment with the help of remote specialists even in settings where health resources are generally scarce. It varies from conventional screening which relies heavily on the specialists when there is acute shortage of trained workforce. Tobacco cessation counselling and proactive outreach in the community mitigate tobacco and areca nut usage.
Developments

Oral Cancer Screening

A population based screening and awareness program for oral cancer is in progress in Nagaland. For the management of positive and high-risk cases, the program has recourse to an NCD desk set up at Community Health Centre, Medziphema of the government, with the support of the Foundation. The program dovetails with the national and state initiatives.

Oral Cancer Task Force (OCTF)

OCTF is a result-oriented expert group driving policy formulation and clinical research to implement innovative projects at the ground level to prevent oral cancer in India. Our oral cancer screening program has evolved further under the aegis of the OCTF.

The consensus document on Guidelines for Management of Head and Neck cancers by an expert committee meeting of more than 24 eminent oncologists from across India, called by the Oral Cancer Task Force has been published in the Indian Journal of Cancer.
A consensus document on Management of Leukoplakia, Oral Sub Mucous Fibrosis (OSMF) and Lichen Planus emerged from the meeting convened in November 2019 by the OCTF as part of the CanQuer 3rd Annual Symposium at Kochi. The meeting was attended by Dr Pankaj Chaturvedi (Head & Neck Cancer Surgeon, Tata Memorial Hospital), Dr Kumar Prabhash (Medical Oncologist, Tata Memorial Hospital), Dr G K Rath (Head, National Cancer Institute, AIIMS), Dr Moni Abraham Kuriakose (Director, Cochin Cancer Research Centre), Dr Vijay Chandru (Co-founder, Strand Life Sciences) and Dr Praveen Birur (Vice Principal, KLESIDS and Lead - Oral Cancer Screening, Biocon Foundation). The consensus document is currently under review by the National Cancer Grid.

Presentation at National Cancer Institute, Washington, DC

Our oral cancer program was presented at the 4th Annual Affordable Cancer Technologies (ACT) Principal Investigators Meeting of National Cancer Institute - Centre for Global Health held at Washington, DC on 23rd and 24th May 2019. The meeting was held to receive critical feedback from the scientific community and foster the dissemination of important findings that emerge from ACT- supported researchers.

The project entitled Low-cost Mobile Oral Cancer Screening for Low Resource Setting, was presented by Dr Rongguang Liang, University of Arizona and Dr Praveen Birur and Dr Sanjana Patrick from Biocon Foundation. The objective was to empower primary healthcare providers with an auto fluorescence probe snapped on to a mobile phone to improve the diagnostic accuracy in oral cancer screening. The presentation was reviewed by the experts and future directions were discussed. The technology was demonstrated in the table clinic session.

Breast & Cervical Cancer Screenings

Huskur, Hennagara and Austin Town clinics have extended routine breast and cervical cancer screening services to low-income and underserved women. In the process, reproductive tract infections and associated complications were also diagnosed.
Outcomes

### Oral Cancer Screening

<table>
<thead>
<tr>
<th>Screening Site</th>
<th>Screened</th>
<th>Positive for OPMD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimapur, Nagaland</td>
<td>1646</td>
<td>7.2%</td>
</tr>
<tr>
<td>Guwahati, Assam</td>
<td>546</td>
<td>5.5%</td>
</tr>
<tr>
<td>Total</td>
<td>2,192</td>
<td>6.8%</td>
</tr>
</tbody>
</table>

### Oral Cancer Research

- Publication of consensus document on Guidelines for Management of Head and Neck cancers in Indian Journal of Cancer
- Publication on “Small form factor, flexible, dual-modality handheld probe for smartphone-based, point of care oral and oropharyngeal cancer screening” in the Journal of Biomedical Optics

**In a secure network, the mHealth creates a robust electronic health record which includes intra-oral image-based data for active treatment and surveillance.**

**Acknowledgements**

The Foundation will leverage its collaborations with CIHSE, BBCI, TMC and SGRDUHS to scale the impact in various regions of the country. The fellowship with IISc has the potential to change the way oral cancer will be diagnosed in time to come. The guidance and support of the OCTF has been fundamental to build research expertise and forge productive partnerships in recent years. KLES Institute of Dental Sciences has played a significant role in steering the program since its inception.

**Challenges**

Tackling common cancers requires a multi-pronged response. Deficient public funding, infrastructure and human resource are some of the key challenges. A strong focus on preventive care and linkage of primary level of care with secondary and tertiary levels is crucial. A concerted effort to develop a cancer network of government and private service providers can be a stepping stone. As a potential pathway for reform, the NITI Aayog has also suggested the development of models which enable virtual networks of existing providers (secondary or primary) to derive synergies and standardization across them, to increase efficiency. The promotion of affordable point-of-care technologies and research can change the way common cancers are diagnosed. The data collection has to be more robust and linked with population-based and hospital-based cancer registries.
Rationale

India aims at 25% relative reduction in the risk of premature mortality from cardiovascular diseases, cancer, diabetes, and chronic respiratory diseases by 2025. The country experienced about 6 million deaths due to NCDs which accounts for more than 60% of total deaths, according to WHO - NCD Country Profiles, 2018. The risk of premature death between 30-70 years is 27% in males and 20% in females.

As per ICMR, state-level disease burden due to four major NCDs comprises about 25% of all disease burden in the age group 15–39 years and it leaps to 70% in the age group 40–69 years in Karnataka.

The care of women and children needs major consideration. According to Sample Registration System (SRS), Maternal Mortality Rate (MMR) was 97 per 1,00,000 live births in the female population (15-49 years) during 2015-17 in Karnataka while Infant Mortality Rate (IMR) was recorded at 25 per 1,000 live births in 2017. About 11% Disability-Adjusted Life Years (DALYs) can be attributed to maternal and child malnutrition in the state, as per ICMR.

Oral disorders pose a major health burden as it ranks among top 15 causes of years lived with disability (YLDs) in both sexes combined in Karnataka, according to ICMR.

Approach

The three clinics of the Foundation at Huskur, Hennagara and Austin Town in Bengaluru conduct monthly specialised clinics. These clinics provide coordinated community-based services free of charge.

The NCD clinic provides a broad array of services, including screening, diagnosis and management of type-2 diabetes, hypertension and associated microvascular complications (neuropathy and retinopathy). The counselling and follow up home visits reduce behaviour risk factors and augment medication adherence.
The well woman clinic offers nutrition, sexual and reproductive health and related services. It involves anaemia screening, breast and pelvic examinations, counselling and referrals.

The well baby clinic primarily deals with anaemia, worm infestations, upper respiratory tract infections, vitamin deficiencies and protein energy malnutrition.

At the geriatric clinic, managing diabetes and hypertension in the elderly population presents a great challenge owing to the high rate of complications and comorbidities that affect glucose and blood pressure control. The clinic provides special elder care specific to their health condition.

Developments

Diet-related NCDs & Comorbidities

The WHO gathered the evidence of affordable, feasible and cost-effective intervention strategies for NCDs called “best buys” along with some other recommended interventions. Our services, aligned with WHO guidelines, tackle key risk factors for NCDs (tobacco, unhealthy diet and physical inactivity) and cardiovascular disease, diabetes and common cancers.

Reducing modifiable risk factors for non-communicable diseases and underlying social determinants through creation of health - promoting environments:

- Reducing salt intake through a behaviour change communication
- Implementing nutrition education and counselling
- Promoting breastfeeding; exclusive breastfeeding for the first 6 months
- Reducing physical inactivity by public education, awareness and counselling
- Providing mobile phone based tobacco cessation services

The fixed and portable dental clinics have been designed to address common problems caused by oral health conditions. Our dentists are also trained to examine patients for oral cancer lesions and counsel patients on tobacco and areca nut habit cessation.
Strengthening health systems to address the prevention and control of non-communicable diseases and the underlying social determinants through people-centred primary healthcare:

- **Drug therapy for cardiovascular disease**, including blood pressure controls and counselling
- **Drug therapy for glycaemic control**, counselling, preventive foot care, diabetic retinopathy screening and lifestyle interventions

**Woman and Child Health**

WHO has proposed a framework on child wasting called Global Action Plan (GAP) to attain SDG targets to end all forms of malnutrition by 2030. In line with the GAP, the intervention of the Foundation has extended micronutrient supplements including iron and folic acid tablets to reproductive age and pregnant women. It promotes age-appropriate infant and young child feeding and care practices and sensitises adolescent girls to nutrition and reproductive health. There is a provision for healthy diets for pregnant and lactating women, and under-five as well as school age children including adolescent girls. WASH program has expanded the coverage of sanitation, water and handwashing facilities.

The well baby clinics have improved local access of treatment for common childhood illnesses with a focus on management of protein energy malnutrition. Community health workers empower caregivers to monitor the growth of their children using anthropometric tools and adopt appropriate child-rearing practices.

In addition to attending to conditions that present most frequently in women, the well women clinics performed routine physical examinations to identify any signs and symptoms of breast and cervical cancers.

**Dental Health**

The Foundation rolled out a well-equipped dental clinic with dental chair at Urban Primary Health Centre (UPHC) Sonnenahalli, of Bruhat Bengaluru Mahanagara Palike (BBMP). The clinic, situated in a densely populated area, provides treatment for dental caries (tooth decay), periodontal diseases and screening for oral cancer with tobacco cessation counselling. Mobile dental clinics provide the solution to limited access in remote areas.
Outcomes

**NCD Clinic**

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients</td>
<td>427</td>
</tr>
<tr>
<td>Consultations</td>
<td>1,874</td>
</tr>
<tr>
<td>Disease Profile</td>
<td></td>
</tr>
<tr>
<td>Only Hypertensive</td>
<td>12%</td>
</tr>
<tr>
<td>Only Diabetic</td>
<td>57%</td>
</tr>
<tr>
<td>Hypertensive Diabetic</td>
<td>31%</td>
</tr>
<tr>
<td>Body Mass Index</td>
<td></td>
</tr>
<tr>
<td>Underweight (&lt; 18.5 kg/m²)</td>
<td>2%</td>
</tr>
<tr>
<td>Normal (18.5 to 22.9 kg/m²)</td>
<td>14%</td>
</tr>
<tr>
<td>Overweight (23.0 to 24.9 kg/m²)</td>
<td>19%</td>
</tr>
<tr>
<td>Obese (≥ 25.0 kg/m²)</td>
<td>65%</td>
</tr>
<tr>
<td>Eye Check-up</td>
<td></td>
</tr>
<tr>
<td>Consultations</td>
<td>117</td>
</tr>
<tr>
<td>Diabetic Retinopathy</td>
<td>11</td>
</tr>
<tr>
<td>Cataract</td>
<td>15</td>
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**Blood Pressure Control**

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertensive Patients</td>
<td>109</td>
</tr>
<tr>
<td>Hypertensive Diabetic Patients</td>
<td>269</td>
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</tbody>
</table>

**Blood Sugar Control**

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetic Patients</td>
<td>293</td>
</tr>
<tr>
<td>Hypertensive Diabetic Patients</td>
<td>664</td>
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</tbody>
</table>

**Geriatric Clinic**

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients</td>
<td>427</td>
</tr>
<tr>
<td>Consultations</td>
<td>1,874</td>
</tr>
<tr>
<td>Disease Profile</td>
<td></td>
</tr>
<tr>
<td>Only Hypertensive</td>
<td>18%</td>
</tr>
<tr>
<td>Only Diabetic</td>
<td>17%</td>
</tr>
<tr>
<td>Hypertensive Diabetic</td>
<td>58%</td>
</tr>
<tr>
<td>Others</td>
<td>7%</td>
</tr>
<tr>
<td>Body Mass Index</td>
<td></td>
</tr>
<tr>
<td>Underweight (&lt; 18.5 kg/m²)</td>
<td>0.3%</td>
</tr>
<tr>
<td>Normal (18.5 to 22.9 kg/m²)</td>
<td>24.4%</td>
</tr>
<tr>
<td>Overweight (23.0 to 24.9 kg/m²)</td>
<td>11.8%</td>
</tr>
<tr>
<td>Obese (≥ 25.0 kg/m²)</td>
<td>63.5%</td>
</tr>
<tr>
<td>Blood Sugar Control Rates (&lt; 140 mg/dL)</td>
<td></td>
</tr>
<tr>
<td>Diabetic Patients</td>
<td>32%</td>
</tr>
<tr>
<td>Hypertensive Diabetic Patients</td>
<td>29%</td>
</tr>
<tr>
<td>Blood Pressure Control Rates (&lt; 140/90 mmHg)</td>
<td></td>
</tr>
<tr>
<td>Hypertensive Patients</td>
<td>63%</td>
</tr>
<tr>
<td>Hypertensive Diabetic Patients</td>
<td>61%</td>
</tr>
</tbody>
</table>
Under-5 children
Stunting – low height for age (<-2 Z-score)
Wasting – low weight for height (<-2 Z-score)
Underweight – low weight for age (<-2 Z-score)

Dental health problems detected and treated

Well Baby Clinic

<table>
<thead>
<tr>
<th>Condition</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under-5 children</td>
<td>234</td>
<td>33%</td>
</tr>
<tr>
<td>Stunting – low height for age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(&lt;=-2 Z-score)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wasting – low weight for height</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(&lt;=-2 Z-score)</td>
<td></td>
<td>19%</td>
</tr>
<tr>
<td>Underweight – low weight for age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(&lt;=-2 Z-score)</td>
<td></td>
<td>27%</td>
</tr>
</tbody>
</table>

Dental Clinic

<table>
<thead>
<tr>
<th>Service</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beneficiaries</td>
<td>28,122</td>
</tr>
<tr>
<td>Dental health problems detected and</td>
<td></td>
</tr>
<tr>
<td>treated</td>
<td>17%</td>
</tr>
</tbody>
</table>

Challenges:

The huge burden, wide range of conditions and complexity of treatment demand a holistic approach and multi-sectoral action for chronic illnesses. A strong linkage needs to be established between preventive, curative and rehabilitative services. Notwithstanding the high prevalence and disproportionately greater effects of NCDs in aging populations, access to care is low. Inadequate focus on risk factor prevention, minimal awareness and lack of research are some of the limitations in the way of realising the SDG target of reducing by one third, premature mortality from NCDs by 2030.

Malnutrition in children is the consequence of a range of factors. The comprehensive food and nutrition policies and programs and an inclusive approach for effective implementation is imperative to eradicate malnutrition.

The huge burden, wide range of conditions and complexity of treatment demand a holistic approach and multi-sectoral action for chronic illnesses.

Acknowledgement

The Foundation recognises the assistance of St. John’s Medical College Hospital and Vimalalaya Hospital in delivering high quality services at Austin Town and Huskur health centres. The role of KLE Society’s Institute of Dental Sciences (KLESIDS) has been pivotal in taking dental care to the doorsteps of remote populations through mobile clinics. The dental clinic launched at UPHC Sonnenahalli in association with BBMP and KLESIDS will go a long way in ensuring better oral health for the community.
INTEGRATED SCREENING IN POURAKARMIKAS

Rationale

Pourakarmikas are sanitation workers of the Bruhat Bengaluru Mahanagara Palike (BBMP), the city municipal corporation that is responsible for public sanitation and hygiene in Bengaluru. The vulnerable group, comprised mostly of women, collects and segregates thousands of tons of solid waste generated in a city with a population of over 13 million, every day. In the process, Pourakarmikas have inordinate risk exposures and chances of developing chronic diseases which result in serious health conditions.

The sanitation workers play a vital role to help us achieve sanitation for all (SDG 6) and reduce the adverse per capita environmental impact of cities, including municipal and other waste management (SDG 11.2). It is a collective responsibility to put in concerted efforts to substantially reduce the number of deaths and illnesses from hazardous chemicals, pollution and contamination (SDG 3.9), and protect the labour rights of sanitation workers and promote safe and secure working environments for them (SDG 8.8). The WHO also recognises that workplace health risks are higher in the informal sector.

Approach

The project was designed to improve the health and wellbeing of vulnerable populations involved in high-risk occupations and settings. The integrated screening for non-communicable diseases (NCDs) was focused on reducing shared risk factors, morbidity and mortality related to three groups of diseases - cardiovascular diseases, diabetes, and most common (oral, breast and cervical) cancers in Pourakarmikas, garbage loaders and drivers.

Developments

Inauguration

An integrated screening was conducted for 89 Pourakarmikas of Shankar Mutt ward at KLES Institute of Dental Sciences (KLESIDS) as a pilot in 2018. The pilot established the vulnerability of sanitation workers to NCDs due to unhealthy diet, high abdominal obesity, high blood pressure and deleterious habits. The occupational stressors increase the dependency on tobacco, areca nut and alcohol. Therefore, a full-scale project was inaugurated at KLESIDS, Bengaluru on July 30, 2019 by prominent experts in the fields of oncology and public health.
Dr G Srivatsa, Principal, KLESIDS, Bengaluru - Welcome address

Dr Praveen Birur, Lead- Oral Cancer Screening, Biocon Foundation, Bengaluru - An introduction to the program

Dr G K Rath, Chief, National Cancer Institute, AIIMS, New Delhi - An overview of cancer screening in India

Dr Prasanth Mathur, Director, National Centre for Disease Informatics & Research, Bengaluru - Development of cancer registries

Dr C Ramachandra, Director, Kidwai Memorial Institute of Oncology, Bengaluru - The importance of early detection

Dr Pranay Tanwar, Associate Professor, Laboratory Oncology Unit, AIIMS, New Delhi - HPV DNA test as primary screening modality for cervical cancer

Implementation

- Information about screening, prevention and treatment options
- Creation of electronic health record and identity unique to every patient
- Permission from every patient before conducting health intervention
- Measurement of blood pressure, blood glucose, pulse, body mass index & waist to hip ratio
- Diagnosis of oral lesions by mHealth, breast abnormalities by clinical examination and cervical cancer by VIA & Pap tests
- Health advice and treatment by specialists
- Counselling for tobacco cessation, self-breast examination, risk mitigation and timely referral

The project was implemented at designated health centres of Bruhat Bengaluru Mahanagara Palike (BBMP) and covered 44 wards of the west zone of BBMP.
Conclusion

On conclusion of the screening program which covered all wards of the west zone, a review meeting was held on December 07, 2019 at IPP Training Centre, Malleswaram. Dr Balasundar, Health Officer, BBMP, West Zone presented the findings of the screening. Ms Revathy Ashok, Managing Trustee & CEO of BPAC highlighted the significance of the program. Ms Pratima Rao, Mission Director of Biocon Foundation acknowledged the valuable partnership forged by BBMP, KLESIDS, BPAC and Biocon Foundation which contributed to the success of the program. The project completion report was handed over to BBMP.

A total of 45 physicians from different wards of Bengaluru West were trained to conduct oral visual examination to detect oral potentially malignant disorders or oral cancer. The ward-wise lists of Pourakarmikas were provided to physicians of the respective wards for further follow up and treatment.

Outcomes

<table>
<thead>
<tr>
<th>Location: BBMP West Zone (44 Wards), Bengaluru</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral cancer screening (n=2030)</td>
</tr>
<tr>
<td>• Prevalence of tobacco usage: 32.6%</td>
</tr>
<tr>
<td>• Detection of Oral Potentially Malignant Disorders (OPMDs) in tobacco users: 9.2%</td>
</tr>
<tr>
<td>Cervical cancer screening (VIA: n=789) (Pap test: n=871)</td>
</tr>
<tr>
<td>• VIA positive: 0.8%</td>
</tr>
<tr>
<td>• Abnormal Pap result: 0.6%</td>
</tr>
<tr>
<td>Breast cancer screening (n=1508)</td>
</tr>
<tr>
<td>• Lump detection rate on clinical breast examination: 0.7%</td>
</tr>
<tr>
<td>High Blood Sugar (n=2076) (RBS ≥ 200 mg/dL)</td>
</tr>
<tr>
<td>• Prevalence: 5.6%</td>
</tr>
<tr>
<td>• Unaware about existence: 3.3%</td>
</tr>
<tr>
<td>High Blood Pressure (n=2076) (≥ 140/90 mmHg)</td>
</tr>
<tr>
<td>• Prevalence: 32.8%</td>
</tr>
<tr>
<td>• Unaware about existence: 28.3%</td>
</tr>
</tbody>
</table>
Challenges

One key action area is to improve all the aspects of occupational health and safety. On the preventive health front, poor health seeking behaviour and dismal uptake of health services are considerable challenges. The poor socio-economic status, socio-cultural factors, lack of awareness and low literacy level are some of the realities of the target group. The everyday hardships and high stress levels due to the nature of their work, takes the focus away from the compelling need for treatment of chronic conditions, as no significant impact on their health is seen in the short term.

On the implementation front, setting up screenings at 29 locations, managing the logistics and mobilising Pourakarmikas to the health centres posed great challenges. However, it was important to organise screenings in different Urban Primary Health Centres of BBMP to make it more accessible for Pourakarmikas outside of their normal working hours. The effective planning and coordination between the partners helped overcome such difficulties.

The abysmal awareness about cancer prevention and invasive procedures resulted in low uptake of cervical cancer screening and oral biopsy despite pre-test counselling. Post-test counselling was crucial to increase the comprehension of screening results in Pourakarmikas as the low literacy level was a barrier.

Acknowledgment

The cross-organizational collaboration was one of the enabling factors for the effective implementation of the program. BBMP granted approvals and extended health facilities within the wards, to conduct check-ups. The leaders from the civic leadership program (B-CLIP) of BPAC organized ward-level pre-screening meetings for mobilisation of sanitation workers. The B-CLIP leaders played crucial roles in coordination and monitoring of the project. KLESIDS supported the program with medical staff for oral cancer screening and lab services for pap testing. Corporators, community leaders and volunteers interacted with Pourakarmikas to encourage them to prioritize health. The screening for breast and cervical cancers required an able hand. Dr Shashirekha Purushotham came on-board as a consultant and rendered her services to perform cervical cytology tests, and clinical breast examination.

The ‘good 2 Great’ campaign of Human Resources division of Biocon aligns employees with the values of the company and drives positive action. Under the campaign, employees volunteered to facilitate Pourakarmikas at the screening sites. A notable engagement of Mr Sandesh, Associate Scientific Manager, Cell Culture Lab, Biocon Biologics resulted in visual documentation of the project.

The multisectoral collaboration was one of the crucial ingredients of project’s success. Biocon employees actively volunteered under ‘good 2 Great’ initiative.
NEW INITIATIVE
MENTAL HEALTH PROMOTION

Rationale

India is confronted with a profound burden of mental, behavioural and substance abuse disorders. Mental disorders are highly stigmatised, leading to social exclusion, isolation, discrimination, diminished quality of life and underreporting of the illnesses. The India State-Level Disease Burden Initiative estimates that one in seven Indians are affected by mental disorders; 14.3% of the total population of the country or about 197 million individuals were suffering from mental health disorders in 2017. It contributed to 4.7% of total DALYs and 14.5% of total YLDs.

The mental health delivery system is ailing and fragmented. The National Mental Health Survey of India, 2015-16 reported the abominably high treatment gap for mental disorders at 83%. Urban metro residents have a higher prevalence (14.7%) of mental morbidity. It can be attributed to fast-paced lifestyle, work life imbalance and financial stress among some of the prominent reasons.

SDG 3.4 prioritises the reduction in premature mortality from non-communicable diseases by one-third through prevention and treatment and promotion of mental health and well-being by 2030.

Intervention

The Foundation has partnered with the National Institute of Mental Health and Neurosciences (NIMHANS) for innovation, integration and advocacy for public mental health. The programs include:

1. Bangalore Urban Mental Health Initiative (BUMHI) to study the perceptions, priorities and concerns about mental health, develop a mental health resource kit for supporting community informal care and self-care, and create community spaces for protecting mental health.

2. Healthy Hearing Initiative to bridge the communication gap in the elderly by screening for hearing loss and by the provision of hearing aids.

3. School Mental Health to study the technology addiction amongst adolescents, develop a Teacher Training Module (TTM) to address the issue, and set up a School Wellness Cell to track behaviours and encourage teacher-led intervention.

The preparatory activities such as recruiting, training and literature review are in progress. The Healthy Hearing project will operate at the upcoming Community Centre for Hearing Health (C2H2) in Srinivasapura, Kolar; the Public Health Observatory of the Department of Epidemiology, NIMHANS. The South Zone of Bruhat Bengaluru Mahanagara Palike administrative limits will be the coverage area for BUMHI and School Mental Health initiatives. The emphasis is to develop a replicable model underscoring its scalability in the context of the three-tier health care delivery system. In view of the same, the South Zone of BBMP would correspond to the District Health Care Delivery set-up.
WHO Pyramid Framework for Mental Health Services

- **Informal Services**
  - High
  - Low

- **Self-Care**
  - High
  - Low

- **Informal Community Care**
  - Frequency of need:
    - Low
  - Costs:
    - High
    - Low

- **Community Mental Health Services**
  - Frequency of need:
    - Low
  - Costs:
    - High
    - Low

- **Mental Health Services Through PHC**
  - Frequency of need:
    - Low
  - Costs:
    - High
    - Low

- **Psychiatry Services in General Hospitals**
  - Frequency of need:
    - Low
  - Costs:
    - High
    - Low

- **Long-Stay Facilities & Specialist Services**
  - Frequency of need:
    - Low
  - Costs:
    - High
    - Low

WHO Pyramid Framework for Mental Health Services
Rationale

Over the last 73 years since independence, India has achieved numerous milestones in education. Tangible changes have been observed in enrolment, attendance and retention of children in public-school education. As a result, the literacy rate which was at 18.33% in 1953 has improved to 74.04% in 2011, according to the Census of India. National policies on Education (1968, 1986 and 2016) have given impetus to the public education system. The Right to Education Act of 2009 allows every child between the age of 6 and 14 to have access to compulsory free and fair education. It requires all private schools to reserve 25 percent of seats for children belonging to the weaker sections of the society.

However, there still remains much scope to improve equity and quality in education. Lack of motivation and professional development of educators and deficient learning materials and learning conditions need to be addressed. The focus must shift from merely achieving literacy to transform the country into a knowledge society.

In a state like Karnataka, where most of the education indicators are better than the national average, according to Annual Survey of Education Report (ASER), 2018:

- Only 47.6% children in Class V and 70.1% children in Class VIII can do division
- Only 19.6% children in Class V and 36.1% children in Class VIII can read Class II level text
- 58.2% schools have no access to computers

It is important to consider that above 65% of all school-going children are enrolled in government and government-aided schools in India, as per the District Information System for Education (DISE). The report highlights that more than 10 million students were enrolled in about 76,000 schools in Karnataka in 2016-17. While more girls are enrolled in government schools than boys, it is not the case in private schools. This draws attention to gender disparity in education system and calls for action to strengthen the public school education system.

Approach

Learning is a complex system of interactive processes. Therefore, the Foundation has adopted a holistic approach to its school education program which involves improving teaching and learning resources, augmenting the school environment by filling critical infrastructure gaps, training teachers, designing after-school enrichment, providing nutritious mid-day meals and a wide range of other activities to make school life meaningful and enabling. The initiatives benefit disadvantaged students and help level the playing field.

Our holistic approach to quality education involves transforming teaching-learning processes, filling infrastructure gaps, after-school support and provision of nutritious meals.
**Developments**

**Guruchetana**
As part of the State Resource Team of Department of State Educational Research and Training (DSERT), Government of Karnataka, the Foundation has developed interactive life skills and first-aid modules, thus contributing valuable resource material and training through Guruchetana, a professional development program which includes an online portal, for government school teachers. In addition, modules on gender-sensitivity and hygiene were also designed for *No Bag Days*, held on the 3rd Saturday of every month. Teacher trainers at state and district levels were equipped to disseminate practical skills to teachers in all locations of the state.

**Aata Paata Wadi**
The after-school enrichment program stimulates the emotional, social and physical growth of the underprivileged tribal children in an unconventional learning environment. In association with Department of Social Welfare, the residential centre in Thithimathi, Kodagu provides pupils from remote tribal areas an opportunity to acquire proficiency in spoken English, computer literacy and life skills such as problem-solving, critical thinking, self-awareness and interpersonal skills. Training in sports and art & craft were integrated to reinforce holistic learning.

136 Resource Persons trained who in turn will train 5,000 District Resource Persons.

150 socially disadvantaged children benefitted from the multiple learning approach.

**Soapy Heroes**
The Foundation extended its support to the Government of Victoria to launch a program to promote healthy hand hygiene habits in schoolchildren. The launch was organised at Hennagara Government School in the presence of a high-level delegation led by Minister Jenny Mikakos, Health Minister, Government of Victoria, Australia.

100 students enjoyed an interactive session with Minister Jenny Mikakos.
350 students in Classes 6 & 7 received first-aid training.

280 students in Class 9 benefitted from the career guidance initiative.

160 students in Class 5 honed their skills in mathematics.

600 students in Classes 5, 6 & 7 participated in sports events.

VEngage
At Biocon, employees align themselves to the organisation’s values and ethics through outreach programs that are integrated into their schedules. A strong culture of volunteerism goes a long way in creating shared value.

In the year under review, the Foundation collaborated with the strong VEngage employee engagement program at Biocon to provide employees an opportunity to participate in several programs organised in government schools.

The vocational guidance and career counselling program assisted students in self-assessment of aptitudes and interests, career goal setting and fostered self-awareness and confidence.

A workbook-based Mathematics program was focused on activity-based teaching and learning using real-life contexts and problems to help students grasp basic concepts.

The provision of first-aid kits and emergency first-aid training and awareness was aimed at improving the safety of students.

Biocon Sports and Adventures Club (BASC) organised exciting sports competitions and extracurricular activities to the absolute delight of the students.
Child Health Activists Mentoring & Promoting Health in Society (CHAMPS)

STEM education must constantly be reinvented to maintain its relevance to the changing societal and personal needs of the learner. The approach should move away from remembering facts and formulae and towards critical thinking and problem solving. Students should be able to apply their knowledge to real-life situations to make learning more relevant and generate change. CHAMPS is one such program that nurtures a generation of empowered change-makers by fostering social responsibility.

The CHAMPS program was a result of a collaboration between Syngene International and Biocon Foundation as funding partners, Narayana Health as knowledge partner and Agastya International Foundation as implementation partner. The Foundation provided the resources for the operation of a mobile science lab to take hands-on science learning to government schools.

Students from classes 8 and 9 were trained by the expert team from Narayana Health. Students were equipped with blood pressure monitors to screen for high blood pressure, improve health seeking behaviour and promote healthy lifestyles in their communities to prevent early onset of hypertension and associated cardio-vascular ailments. Interactive visual aids were used to deliver engaging lessons. Repeated training ensured the accurate use of the BP monitor and understanding of concepts related to BP screening and hypertension. A flip-chart was created to equip students to use visual explanations when they took the program to the community. The results of the pre-test and post-test showed that the training was effective.

The program was formally launched on August 03, 2019 at the Mazumdar Shaw Cancer Center in the presence of Dr Devi Prasad Shetty, Chairman of Narayana Health, Dr Kiran Mazumdar Shaw, Managing Trustee of Biocon Foundation and Mr Ramji Raghavan, Chairman of Agastya International Foundation. Mr N. Kenchegowda, Deputy Director, DSERT and Mr H S Ramesh, Block Education Officer, Anekal Taluk represented the Department of Education at the event. Teachers and students from 14 government schools from Anekal participated in the event. First-aid kits, pre-loaded science software on Tabs and digital BP monitors were presented to each school to facilitate conducting the CHAMPS program in their communities.
Through the CHAMPS initiative, we shall engage high school students as change agents within their communities. They will be trained to screen for symptoms of high blood pressure and counsel patients on its adverse effects. In doing so, they will encourage their families and communities to adopt healthy life-styles, enjoy good health and reduce the burden on the healthcare system.

Ms Kiran Mazumdar-Shaw  
Managing Trustee, Biocon Foundation

Most of the patients with high blood pressure are not aware of the problem and the consequences. In the process, a large number of Indians develop heart failure, kidney failure or stroke due to uncontrolled high blood pressure. By training school students to record blood pressure, we are introducing passionate young kids to the exciting world of the medical profession which can change the way healthcare is delivered across the world.

Dr Devi Prasad Shetty  
Chairman & Executive Director, Narayana Health

We are thrilled to partner with Syngene International, Biocon Foundation and Narayana Health on this unique program combining science and health education. The fundamental idea of the CHAMPS initiative of developing children as change agents in raising awareness of hypertension, ties in well with Agastya’s philosophy of developing children as young instructor leaders, who are change agents inculcated with a scientific temper.

Mr Ramji Raghavan  
Founder & Chairman, Agastya International Foundation

Mobile Science Lab (MSL)

To trigger curiosity and help children develop scientific temperament in 14 government schools in Anekal Taluk through hands-on learning, Biocon Foundation in association with Agastya International Foundation launched the MSL. Equipped with more than 100 scientific instruments and models, the MSL provides an opportunity for learning science with a strong emphasis on experience-based learning methods.

The program was officially inaugurated on August 03, 2019 along with the CHAMPS program. Ms Kiran Mazumdar-Shaw, Managing Trustee, Biocon Foundation handed over the key of the MSL to Mr Ramji Raghavan, Founder and Chairman, Agastya International Foundation.

84 students from 14 schools were trained as CHAMPS.

2,100 individuals screened for BP; 43% males and 57% females.

26% detected with high BP ($\geq$ 139/90 mmHg).

47% of those detected with high BP were unaware of the condition.
Today MSL Instructors delivered lessons on light and its properties, and image formation by mirrors. It was really easy for our students to understand the concepts by learning through experience using science models.

Ms Prabhavathi
Science Teacher, GHS Huskur

School Infrastructure
A newly constructed and fully furnished school building for Government Lower Primary School, Kyalasanahalli was handed over to Block Education Officer, Anekal on November 8, 2019. The building consists of three classrooms, kitchen-cum-storage and separate washrooms for girls and boys with hand wash facilities for a clean, safe and secure learning environment.

Feedback

MSL Instructors taught us about structure and function of the cell, basic microscope setup and use, and slide preparation. We saw the pictures of Amoeba and Euglena. It was a really interesting class.

Akash
9th Class Student, GHS Marasuru

The Instructors of MSL conducted a maths fair in our school in the memory of Late Srinivasa Ramanujan. I took part and exhibited some useful maths models. Thanks for the opportunity.

Nalini
8th Class Student, GMPHS Anekal

MSL is a very useful program for students, teachers and the community. Training was delivered in an effective manner.

Mr Narayan
Community Member, Sidihosakote

25 students have enrolled in Classes I-IV in the GLPS Kyalasanahalli.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Indicator</th>
<th>Figure</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Visit</td>
<td>School visits</td>
<td>179</td>
</tr>
<tr>
<td></td>
<td>Boy exposures</td>
<td>8,091</td>
</tr>
<tr>
<td></td>
<td>Girl exposures</td>
<td>9,369</td>
</tr>
<tr>
<td></td>
<td>Teacher exposures</td>
<td>378</td>
</tr>
<tr>
<td>Community Outreach</td>
<td>Community visits</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>Children exposures</td>
<td>2,045</td>
</tr>
<tr>
<td></td>
<td>Adult exposures</td>
<td>2,126</td>
</tr>
<tr>
<td>Teacher Training</td>
<td>Teacher training programs</td>
<td>2</td>
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<tr>
<td></td>
<td>Teachers Trained</td>
<td>61</td>
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<tr>
<td>Science Fair</td>
<td>Science Fairs</td>
<td>179</td>
</tr>
<tr>
<td></td>
<td>Young Instructors</td>
<td>8,091</td>
</tr>
<tr>
<td></td>
<td>Student exposures</td>
<td>9,369</td>
</tr>
<tr>
<td></td>
<td>Teacher exposures</td>
<td>378</td>
</tr>
</tbody>
</table>

Exposure is a count of the number of face-to-face interactions with a beneficiary. Each exposure is 2-3 hours in duration.
WASH Program in Schools

Reverse osmosis water purification units, each of capacity 50 LPH, were installed in 2 government schools in Dakshina Kannada to make safe drinking water accessible to students and staff.

Challenges

Despite the fact that government and private enterprises are constantly working to reform the existing education system, we are still grappling with issues such as rote learning instead of practical training, curriculum that is not in tune with the needs of the changing times and pressures of the evaluation system that lead to a high drop-out rate. Bringing consensus on issues related to quality education has always been a challenge as understanding of core education values varies among different stakeholders. Non availability of assessed needs list with critical stakeholders is another aspect leading to ad hoc decisions.

In November 2018, Biocon Foundation entered into a memorandum of understanding with Department of Primary and Secondary Education, Government of Karnataka to strengthen the government school education system in the state. Inadequate investments in public education has led to poor infrastructure facilities and quality standards. Public private partnership is the key to address the issue to a great extent as government has financial constraints.

Digital Learning

As the world is increasingly digital, technology has immense potential to ameliorate school education. The Foundation provided computers, tablets and projectors to government schools to improve access to basic digital learning tools.

350 students availed clean drinking water.

40 computers provided to SFS Kannada High School, Hebbagodi.

10 computers and 2 projectors installed at 5 government schools in Dakshina Kannada helped children in getting access to digital learning.

14 tablets with science learning tools given to 14 schools in Anekal.

The opportunity for the private sector to partner with the government can fill the critical resource gaps to improve the quality of education outcomes.
ENVIRONMENTAL SUSTAINABILITY
Resuscitating Natural Resources
Rationale

Rapid urbanisation has resulted in a significant decline of vegetation and wetlands in Bengaluru. According to a study by IISc, about 98% lakes have been encroached and about 90% lakes are affected due to the sustained inflow of untreated sewage and industrial effluents.

Deterioration of urban tanks and depleting water table have reached alarming levels. Due to increasing urbanisation in Anekal, groundwater level in some wells fell from 17 m in 2005 to 50 m in 2017. Between 2016 and 2017, levels fell by 2 to 9 m, as per the Central Ground Water Board.

Recreational facilities have been added around the lake. Tree plantation has improved the green cover. The fully rejuvenated lake is under maintenance by Biocon Foundation.

The polluted Yarandahalli Lake has been improved by bund strengthening, fencing, de-weeding and cleaning. Greenbelt development is undertaken.

To improve the condition of Huskur Kalyani certain remedial measures such as removal of weeds and solid waste from the pond and cleaning of the walkway and surroundings have been undertaken.

Approach

Biocon Foundation has resuscitated a 35-acre Hebbagodi Lake using biological restoration techniques – bioremediation, mechanical aeration (surface, submersible and mixers) and floating treatment wetlands (FTWs).

Lake Maintenance

The preservation of Hebbagodi Lake involves regular application of a blend of bio-enzymes and specially selected eco-friendly microorganisms that rapidly liquefy the organic waste and clean the polluted water. The liquefied organic waste is then degraded into water and gases that are totally harmless to the environment. Trash barrier and bar screens have been installed to arrest floating matter. Additional aerators have been installed to increase dissolved oxygen and reduce sludge. Aerators micronize air to yield bubbles of size 10 microns, making high surface area available for oxygen transfer. Artificial wetlands have been added to cover large surface area to reduce the excess nutrients. It enhances the micro ecosystem underneath the water surface to clean the pollutants.
Aquatic weeds, trash and sludge were regularly removed from Yarandahalli Lake and Huskur Kalyani to keep the waterbodies and their environs in good condition.

Knowledge Sharing

CSR-Anekal is a forum that promotes convergence between the institutions that operate in and around Anekal. Biocon Foundation hosted a consultation on “Rejuvenation of Lakes” on April 29, 2019 at Biocon Campus, Bengaluru. Speakers and delegates represented corporates, NGOs, academia and government agencies. Karnataka Tank Conservation & Development Authority (KTCDA) and Electronic City Industrial Township Authority (ELCITA) actively participated in the deliberations. The shared purpose of the consultation was to exchange ideas on how different organisations are engaged in waterbody conservation and restoration. The platform provided an opportunity to learn from the best practices adopted by other corporates. The site visit to Hebbagodi Lake provided first-hand experience of the combination of eco-friendly treatment methods employed by Biocon Foundation.

Dr Chandan Banerjee, Associate Director and Project Scientist, Bengaluru Water Solutions Lab, Divecha Centre for Climate Change, Indian Institute of Science highlighted the findings of scientific studies on hydrology of Bengaluru. The evidence suggested shallower groundwater due to anthropogenic recharge in Central Bengaluru. An analysis of the data on ground water level in Anekal in the outskirts of Bengaluru demonstrated higher population growth than the national average, translating to higher water demand and rapid depletion of the water table. The high percentage of rainfall as runoff laid greater stress on adoption of appropriate techniques to manage and control runoff. Views on Integrated Urban Water Management (IUWM) approach were exchanged for sustainability of water resources.

Mr Ravi Kumar, AGM, Sansera Engineering highlighted the efforts put into the revival of a 36-acre Kyalasanahalli Lake. Once completely dry, encroached and fed with industrial waste, the lake and its ecosystem is restored by Sansera Foundation. It has resulted in improvements in the ground water table, increasing water availability for agriculture and restoration of flora and fauna.

Mr Prakash B S, Manager- Corporate Sustainability, Titan Company Limited spoke about the ongoing endeavour with Bengaluru Metro Rail Corporation Ltd. (BMRCL) to bring a 17-acre Veerasandra Lake to life.

Dr P M Kulkarni, Managing Director, JMS Biotech Pvt Ltd shared his experience on “Innovative Approaches to Rejuvenate Polluted Water Bodies”.

The convention was unique as it addressed the challenges specific to Anekal and provided know-how of change in hydrological conditions and remediation techniques.
Outcomes

<table>
<thead>
<tr>
<th>Third-Party Assessment of Water Quality of Hebbagodi Lake</th>
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<tbody>
<tr>
<td>Increase in Dissolved Oxygen (DO) from 0 to 4.2 mg/L indicates that aeration and bio-enzyme treatment are effective.</td>
</tr>
<tr>
<td>Decreasing trends in the chemical oxygen demand (COD) and biological oxygen demand (BOD) in the samples suggest that level of pollution has reduced.</td>
</tr>
<tr>
<td>pH, TDS, Nitrates have fallen in line with the norms after the treatment.</td>
</tr>
</tbody>
</table>

Challenges

Most of the wetlands are either dry or completely fed with untreated sewage. Lack of drainage and sewerage system, and treatment facilities result in disposal of raw sewage into the lakes. Illegal dumping of solid waste and construction debris aggravate the situation.

A framework for integrated urban water management is essential. Urban administration needs to be improved to manage water and sewage. Regulatory enforcement and regular inspection by the concerned authorities is the need of the hour. Since water bodies are common resources, collaboration and sharing responsibilities is crucial for their protection and sustainability.

It is imperative to improve the sewage treatment and waste management operations to achieve the sustainability of urban waterbodies.
RURAL DEVELOPMENT
Augmenting Essential Resources
Rationale

The fallout of the COVID-19 pandemic was the reverse migration of low-wage workers to their homes in rural areas. Karnataka has experienced massive intra and interstate migration. The return not only increases the risk of disease spread but also renders rural households and the rural health systems overburdened and exposes the vulnerability of the unorganised workforce. Against this backdrop, the crisis has brought rural India back into sharp focus. The UN SDG promotes planned and well-managed migration policies to leave no one behind.

Approach

The current situation provides an opportunity to repurpose the strategies for rural development in order to cater to the increased demand for basic services and amenities. The Foundation has been constantly investing in rural areas to build resilient healthcare, education, water and sanitation, and public infrastructure. These interventions are an attempt at establishing inclusion and social reintegration to mitigate the social and economic impact of the pandemic.

Developments

Rural health services are hinged upon Primary Health Centres (PHCs). The eLAJ Smart Clinic is an initiative that strengthens the services of PHCs, mostly for rural inhabitants, in convergence with the Government processes. We have introduced ICT-based primary healthcare delivery using mobile devices to improve access and quality. ASHAs were trained to improve management of non-communicable diseases including common cancers at the grass roots. A mobile dental unit delivered outreach dental services at the doorstep of the rural population.

Education programs addressed key elements of quality and accessibility- nutrition, teacher education, learning resources and infrastructure in government schools. The Foundation inaugurated a building for a Lower Primary School in Kyalasanahalli. Computers and projectors were provided to facilitate digital literacy in 5 government schools in Dakshina Kannada.

1,00,000 patient visits at 9 rural PHCs. 20,000 individuals availed services of mobile dental clinic.
Tablets installed with learning applications were distributed to 14 government schools in Bengaluru Rural. Pre-school education received a makeover with the refurbishing of 6 anganwadi centres. The Mobile Science Lab (MSL) delivers experiential learning to students of government schools in remote rural locations.

Two toilets blocks were refurbished in government schools in Kalavaru, Dakshina Kannada. In order to provide safe and clean drinking water facilities, RO water systems were installed in 6 anganwadis and 2 schools in Dakshina Kannada.

Challenges

Social and cultural particularities, low digital literacy levels, insufficient awareness, lack of communication and retention of skilled people are some of the challenges facing rural health and education, particularly in remote locations. Availability of resources, difficult terrain and transport are some of the major issues pertaining to rural infrastructure development.

Acknowledgement

The successful implementation of all the projects were a result of cooperative efforts in which local governments and non-government partners worked in tandem with local communities. The Foundation recognises the role of Taluk and District Health Officers, Block Education Officers, Child Development Project Officers, local panchayat officials and communities in extending their support to the projects.
Rationale

In the 2019 Global Hunger Index, India ranks 102nd out of 117 qualifying countries, behind Nepal, Pakistan and Bangladesh. With a score of 30.3, India suffers from a level of hunger that is serious. Malnutrition caused 69% of deaths of under-five children in India, according to The State of the World’s Children 2019. 22% of school-age children (5–9 years) were stunted, while 10% were underweight in India, as per Comprehensive National Nutrition Survey (CNNS). Every second woman in the country is anaemic. According to CNNS, among the children aged 0–4 years, stunting, wasting and underweight prevalences were 29.3%, 17.9% and 30.8% respectively in Telangana, and 32.5%, 19% and 32% respectively in Karnataka.

According to The World Bank, India’s public investment in R&D was a mere 0.65% of GDP in 2018. India’s share was 2.8% of the global expenditure of R&D in 2017, according to the Economic Advisory Council to The Prime Minister (EAC-PM). It has set the target for R&D expenditure of 2% of GDP by 2022.

According to the National Crime Records Bureau (NCRB), Bengaluru recorded 3,412 cases of crime against women in 2016, higher than 3,109 such cases reported in 2015. However, the increase in cases may be due to improved reporting. The SDG 5.2 set out a target to “eliminate all forms of violence against all women and girls in public and private spheres” by 2030.

Karnataka ranks 6th in the list of Indian states, vulnerable to natural disasters, according to the National Disaster Risk Index 2018. The state faced a double whammy of floods and pandemic in the year under consideration.

Approach

In addition to direct implementation, the Foundation also implements CSR projects and programs through independently registered non-profit organisations that have a track record of at least three years in similar activities. The Foundation carries out due diligence to determine the risks and benefits of working with a potential partner. In the year under review, the Foundation funded initiatives in some of the core areas of development - nutrition, scientific research, women’s safety and disaster relief.

Developments

Nutrition

In Partnership with The Akshaya Patra Foundation, the provision of nutritious meals for pregnant and lactating women and children under six years of age have been made through anganwadi centres in Sangareddy, Telangana. The initiative deals with the burden of undernutrition and hidden hunger and lays a strong foundation for survival, growth and development of children in early years.

The supply of mid-day meals to schools in Bengaluru is to improve the nutritional status and educational attainment and achievement.
The research studies have made significant progress to develop new drugs for tuberculosis and therapies for cancer.

Scientific Research

The Foundation has established a “Biocon Chair” at the Institute of Bioinformatics and Applied Biotechnology (IBAB). Dr. H S Subramanya, Director IBAB holds the scientific chair which is focused on discovering new drugs that works through a novel mechanism of action to treat tuberculosis (TB) using traditional medicine and natural products, and targeting DNA Polymerase Theta (Pol θ) for development of cancer therapeutics.

559 students of Government schools in Jigani, Karnataka and 2,070 children and pregnant women of anganwadi centres in Sangareddy, Telangana received nutritious meals for one year.

Women’s Safety

Parihar is an initiative of Bengaluru City Police, situated in the office of the Police Commissioner. Comprised of professional counsellors, trained volunteers and police staff, Parihar provides support to women and children in distress.

In September 2019, Biocon Foundation and Parihar entered into a memorandum of understanding to inculcate a sense of dignity, safety and trust among women. The initiatives include Family Counselling Centre, Vanitha Sahayavani (Women Helpline), Makkala Sahayavani (Child Helpline) and Vanitha Sahayavani Santwana Centers to provide relief and consolation to women who are victims of domestic and gender-based violence. The services also include short stay home facility, medical service, psychological counselling and legal aid to women.

In addition, Parihar organises workshops to sensitize people and catalyse action to make the city safer for women and children.
• Workshop for police personnel to sensitize them on handling cases with regard to distressed women and children

• Workshop for college students on Women Safety, Drug Abuse, and Cyber Crime and Cyber Safety


• Workshop for women empowerment through self-help groups

• One-week workshop for vocational skills development for women

In the last quarter of the financial year under evaluation –

• 612 counselling cases attended, 392 cases were reconciled and settled amicably.

• 11 awareness sessions conducted in schools, colleges, convention centres and other public places around Woman and Child Safety, Social Media Addiction and Drug Abuse.

• 2 training programs – one-day session to sensitize police on handling cases with regard to distressed women and children and a three-day skill development training for sustainable livelihoods attended by 80 women.

Disaster Relief

In the wake of 2019 Karnataka floods, the Foundation made a donation to Karnataka State Disaster Management Authority and employees of Biocon contributed to CM’s Relief Fund to aid the relief measures in the state. In addition, essential medicines were donated to Karnataka & Kerala Governments to support medical assistance for flood victims.
In order to provide immediate relief to disproportionately affected daily wagers and the underprivileged due to the COVID-19 pandemic and lockdown, dry ration kits with basic grocery items were distributed in partnership with The Akshaya Patra Foundation. Employees of Biocon coordinated the efforts for logistics and transportation to ensure timely delivery of relief materials to the most vulnerable groups in different locations in Bengaluru.

Challenges
Prioritising one developmental issue over the other poses a big challenge. However, the decision is made on criteria such as need assessment, benefit to underserved and impoverished populations, availability of a right implementation partner in the target geography and an emphasis on innovation, sustainability and impact.

Due diligence checks such as evaluating the competence, identity, management, transparency and financial capability of the implementation partner, and assessment of medium and longer-term results are required.

Acknowledgment
The Foundation has always given emphasis to partnerships and joint initiatives. The grantees are leaders in their respective fields and have been instrumental in bringing about the desired change.

10,000 individuals benefitted from dry ration kits, sufficient to sustain them for 21 days.
Awards & Accolades

Institute of Public Enterprise - Best Practices in CSR Awards 2020 for Oral Cancer Control Program in the Category of Preventive Healthcare

Karnataka Tank Conservation and Development Authority - Felicitation for Development of Hebbagodi Lake & Yarandahalli Lake

18th FICCI CSR Summit & Awards - Jury Commendation Certificate for Oral Cancer Control Program in the Category of Exemplary Innovation

World CSR Congress & Awards 2020 - 101 Fabulous Global CSR Leaders Award
Presented to Ms Pratima Rao, Mission Director, Biocon Foundation
BIOCON FOUNDATION IN THE NEWS

Biocon Foundation to screen sanitation workers for NCDs in Bengaluru

Biocon Foundation conducted an awareness campaign and a screening initiative of non-communicable diseases (NCDs) in collaboration with BHMP in the city as a pilot project. A meeting was critical on the Commission, which aims to revitalize the area, stressed on the need for community involvement.

89% of B’luru civic workers anaemic, shows study

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