TRANSFORMING HEALTH CARE IN INDIA

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TRANSFORMING HEALTH CARE IN INDIA

A presentation

By

Jasani Center

For

Social Entrepreneurship

&

Sustainability Management

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Foreword

A nation's capacity to deliver basic healthcare is perhaps one of the best markers of its concern and responsibility for its citizens. Though India is one of the fastest growing economies in the world, it ranks among the lowest achievers of good health. According to the Global Burden of Disease study 2017, published in The Lancet, India ranked 154 out of 195 countries regarding healthcare access, far behind nations like Bangladesh, Nepal, Ghana and Liberia. According to the latest National Health Profile (NHP) 2018, India is among the countries with the least public health spending. This conveys the message of the abject failure of our healthcare delivery. The underperformance of India's health attainments compared with those of China in health indicators like longevity, decreasing infant and maternal mortality, malnutrition and other indicators are growing larger due to our marginal investment in healthcare. The Indian government plans to live up to its promise of 'health assurance to all Indians' with a health spending of just INR 3 per person per day that counts for 1.02 per cent of the GDP. Surely, we cannot expect to get what other countries achieve by allocating much more resources.

The poor find it difficult to make use public health services as they are inefficient and at times inaccessible and not available. Consequentially people are pushed towards the private sector for their healthcare needs. Medical fees, drug costs, transportation costs to reach a health centre are devastating. In the worst cases, the burden of illness may mean that families sell their property, take children out of school to earn a living or even start begging. According to a study published in Lancet (2017), India stands sixth in the out-of-pocket (OOP) health spending among the low-middle income group of 50 nations. 7 per cent of Indians fall below the poverty line just because of indebtedness due to health expenditure. As a result, about 23 per cent of the sick cannot afford healthcare.

There is a silent crisis in access to essential medicines due to inadequate budgetary provision for healthcare, the lack of a comprehensive policy on medicines, and a weak regulatory framework governing production and pricing. Health regulations to restrain pilferage and enforce accountability are recognized as important but are often successfully circumvented. Laws governing clinical establishments, which exist in theory, remain quite largely unimplemented. Health demands a kind of trust relation. Possibly as a consequence of the increasing distrust in the system, there are many more reports of physical violence against healthcare providers.

The students through their We Care: Civic Engagement internship have realised denial of basic healthcare for the poor are symptomatic of a deep-rooted crisis. They have observed that the public health infrastructure is weak and possibly under-funded, but the additional corrosion caused by corruption has aggravated matters. Consequentially the trust deficit between healthcare and ordinary citizens is at an all-time low.

India is committed to achieving universal healthcare. The universal care will not become a reality unless a well-regulated, transparent, and functioning system is in place. This is, of course, in addition to adequate financial resources and well-trained health human resources at every level.

The contributors to this volume are our MBA students. The articles capture the essence of their experiential learning. They have been fortunate to examine that despite various challenges, NGOs and social enterprises were able to make a difference. They have realized that NGOs and social enterprises in the health sector are built on a platform of hard professionalism. They have a role to play in healthcare delivery which government, at least in the immediate future, will not be in a position to play.

I am confident that the experiential learning gained through the internship will guide them to design pro-poor health care interventions.

Dr. Rajan Saxena
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Unfolding the Pages of the Anthology...

Acknowledgments

Preface

The School of Business Management initiated *We Care: Civic Engagement* internship in 2010 to instil values of socially responsible behaviour amongst its FTMBA students. The internship was coined with an intent of helping future business leaders develop understanding about the needs and wants of the bottom of pyramid. Being in its eighth year, the initiative has expanded to 121 cities spread across 22 states and two union territories.

The present publication *Transforming Healthcare in India* is an outcome of the experiences gained by our students through the *We Care: Civic Engagement* internship. It provides an overview of the health concerns prevailing in India and the associated challenges. It documents the innovations developed by organizations to address the healthcare concerns with the focus on prevention.

The publication consists of three sections. The article on *Mapping Healthcare Scenario in India* Section I traces the development of public healthcare infrastructure in India. The article details out the journey from National Health Policy I to III by highlighting the key schemes introduced during each phase. The current healthcare indicators and challenges encountered are also discussed in the paper.

Section II consists of three articles focussing on maternal health and access to basic and affordable healthcare. The articles bring forth the efforts made by different NGOs for improving the health and reducing the mortality and morbidity in the country.

The first article, *Capacity Building for effective Maternal Care - A case of Jhpiego*, focusses on the importance of pre and post-natal care to reduce maternal and infant mortality. The article describes the details of the Manyata project that offers capacity building services to local practitioners in Jharkhand on improving their quality to deliver better, respectful and quality pre and post-natal care services to pregnant women. The article highlights the importance of following standard protocols laid out by FOGSI to provide appropriate gynaecological care pre and post-delivery.

The second article *Reaching the Last Mile: Case Study of PRASAR* examines the impact of the services extended by the organization in the remote areas of Uttar Pradesh. The findings highlight positive impacts on the health indicators of malnutrition, infant mortality, breast feeding and institutional deliveries. Menstrual hygiene improvised as a result of trainings. The

article provides insights to the role of community health workers for achieving better results in health delivery process.

The third article *Mission 5K:* Case of Preventive Healthcare by Empowering Micro Entrepreneurs studies the scenario of general health in Channapatna, Karnataka and offers access to basic healthcare at the doorstep. In the context of affordable access to basic healthcare, the article describes the strategy of empowering local women as healthcare providers. Appropriate package of products, competitive pricing, effective training to local women and easy access is highlighted as a promising mix for addressing the dual challenge of women empowerment and affordable and timely healthcare.

Section III highlights the issue of sexually transmitted diseases, substance abuse, waste management and access to affordable drinking water that directly and indirectly affects community health. *Reintroducing Branded Condoms by Aastha Parivaar* is the first article in the Section III. The paper assesses the situation of HIV AIDS in the context of sex workers at four sites in Mumbai. Regular use of condoms being a preventive measure to the spread of HIV infection, the paper highlights the condom buying behaviour in the sex trade and demand-supply gap in the supply of free condoms by the Government. The article assesses the possibilities of introducing low cost 'Aastha Condoms' in the market by associating with large corporations and small NGOs to create sustainable access.

The second article Drug Abuse: Concern among Youth in Maharashtra studies the knowledge and beliefs about drug abuse among students studying in post graduate and undergraduate colleges. Based on a primary research, an attempt is made to identify drug consumption practices among users and the extent of abuse in colleges. The study derives that respondents were majorly influenced by friends to engage into drug consumption. Although alcohol and tobacco were reported as the most consumed, consumption of Cocaine and Heroin and other drugs was also reported. 48 per cent respondents were unaware about the treatment and rehabilitation process for substance abuse hence raising the need for awareness generation on the same.

The third article *Green Audit: A Revenue Generating Model for Waste Management* explores the innovative ways of waste management for educational institutions in Kerala. The article examines the amount of solid waste generated by educational institutes in a year and their

requirement to comply with the certification norms. Optimising on the need and available expertise, the article explores the opportunity of offering green audit as a service at a nominal cost to educational institutes along with collecting and recycling their solid waste at zero cost. The article details out a social and financial analysis of the proposed model and claims to be profitable.

The next article *Segregation at Source: Awareness Building for Waste Management* focusses on children Municipal schools. With the belief that children are the future of the nation, article focusses on awareness building about segregation at source among children to move towards a circular economy. The article tests the IEC content developed by Saahas Zero Waste to derive improvement areas for replicating in multiple schools. Along with developing young influencers, the article suggests using organizational expertise to involve multiple stakeholder and create a robust system for laying the foundation of circular economy.

The last article, *Potable Water: Case of Spring Health Water India* describes a business model offering affordable decentralized drinking water solution. The paper details out the factors influencing the rural consumer buying behaviour and the efforts made to redesign the marketing content to meet the organizations' aspirations to scale up. It recommends adopting certain changes in the business model and marketing strategies.

It has taken nine months to enable students to draft their articles and subsequently edit them. Despite observing due diligence in editing the document, there is a possibility of grammatical/typographical errors in the publication. Readers are requested to kindly excuse us for the same.

Dr.Meena Galliara,
Director,
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Prologue

UN officially adopted a set of 17 Sustainable Development Goals (SDGs) as part of the 2030 Agenda for Sustainable Development in January 2016. These goals will be an important part of the process which will guide the nations to set their priorities and influence strategy of sustainable development. The business sector is an integral part of this development, and therefore, business schools have an obligation to train their students who prospectively will join the businesses so that practice move closer to SDGs in terms of their understanding and action

Globally more than 800 business schools, including many AACSB accredited schools are signatories to the U.N. Principles for Responsible Management Education (PRME). SBM, NMIMS University is working towards making our student learning experience which is engaged in and contributing to the SDGs. We Care Program of the SBM is one of the unique programmes among the business schools offering the service-learning opportunity to MBA students through internship experience over three weeks period during their first-year curriculum and engage with various SDGs. We Care Program aims to provide exposure to social realities and helping them to develop managerial solutions to address social problems.

In February 2019, as a part of We Care: Civic Engagement internship 624 full-time MBA students were placed in social sector organizations for three weeks. Students worked on various social issues during this duration. Students undertook projects under different sustainable development goals (SDGs). Prominent among those were quality education (SDG 4), gender equality (SDG 5), good health and well-being (SDG 3), zero hunger (SDG 2), decent work and economic growth and overall peace and justice. About 100,000 person-hours deployed by our students in 250 organizations across the country is an essential feature of our effort towards meeting the expectation of SDGs.

Many of these initiatives are working in innovative and having the potential of making an impact. For us at the School, the efforts undertaken by students is an exciting journey towards meeting the expectations of SDGs.

The current Anthology: Transforming Healthcare in India is the result of the internship projects undertaken by the students at organizations working in the areas of pre-natal and post-natal health care, community health services, HIV prevention, substance abuse, waste management, and potable drinking water.

According to the Supreme Court of India, healthcare is a fundamental right under Article 21 of the Constitution. The fact that the public spending of little over a percent of GDP on healthcare makes the country's healthcare needs most underserved. While care in government-run

hospitals is technically free for everyone, the system faces many challenges in areas of quality of care and a lack of human resources. Consequentially, people are forced to turn to avail health care services from private players at higher costs. According to Oxfam's latest report, 63 million Indians are pushed into poverty every year due to increasing health costs.

One observes disparity in healthcare across India. Health is a state subject, and consequentially, there is a discrepancy in investment and approach to healthcare. Some provinces such as Kerala, Tamil Nadu, Gujarat, Mizoram, Manipur, and Goa have invested in bettering their health systems. Some improvements in public health care facilities in these states have been experiences which focus on the deployment of accredited social health activists, the launch of public services such as the free distribution of generic drugs, ambulance services.

Alongside government health care facilities, NGOs, and social enterprises almost in all states/UT are involved in the health care sector with a primary focus of providing curative, preventive, and rehabilitative care services. NGOs and social enterprises besides collaborating with the government also innovate health care solutions to accelerate health equity and reach out to the marginalized.

School of Business Management, NMIMS University students worked on specific assignments in the areas of designing entrepreneurial strategies for community health projects, research on substance abuse, impact assessment of health services and developing accessibility for potable drinking water. The We Care experience has allowed the students to examine how NGOs are transforming healthcare through their value based interventions. In a few instances, students were delighted to see how the process of reverse innovations in health care have fixed health problems of the communities.

The articles in this volume based on the experiences of the students showcase the innovative solutions executed by NGOs/social enterprises to address a few health care issues. The articles present that to reduce the 'disease burden' and attain sustainability; there is a need to collaborate with multiple stakeholders.

We are delighted to present this publication and hope it will be of use to readers who are interested in sustainable development goals related to health and well-being.

Dr. Ramesh Bhat,
Provost - Management Education, NMIMS &
Dean, School of Business Management

Section I

The article in this section traces the efforts taken by Government of India to transform the public healthcare over the last seven decades. Despite notable achievements, India's health system is confronted with multiple challenges. Structural weaknesses in the system can be addressed through increased investments in community sanitation, technical, financial and human resources. To achieve the government's vision of assuring health for all, India's healthcare delivery system needs a radical transformation.

Mapping Healthcare Scenario in India[1]

Abstract: The current article highlights the critical situation of healthcare in the country and the need for increasing public investment in healthcare. The article is divided into four sections. Section I describes the genesis of Millennium Development Goals (MDGs) and Sustainable Development Goals (SDGs) in general and 'Health' in particular. Section II discusses major public health policies & programmes in India from 1950 to 2017. The crux of each of the three health policies is explained along with the key schemes introduced during the period. The section maps the transformational efforts undertaken by the government address the health needs of its population. An attempt is made to briefly discuss the role of NGOs/social enterprises in healthcare. The pressing issues affecting the health scenario of the country is a part of Section III. Facts about the child and maternal mortality, spread of communicable and non-communicable diseases, condition of health infrastructure and associated cost of treatment have been elucidated in this section. Section IV puts forth a discussion about the reasons for the slow progress and critically analyses the National Health Policy 2017. The paper concludes by indicating the need for political will to address the issues of quality, cost and equitable access to healthcare. Recommendations pertaining to developing robust healthcare systems, facilitating public private partnership, data management and focusing on community sanitation schemes are offered to transform the healthcare scenario in India.

1. Introduction

Good health and well-being of the citizens forms the foundation of development for any country. The health of people across the globe is not the same. Countries across the world vary tremendously in terms of their burden of disease, and performance in terms of doing what is required. Shortfall in performance can be attributed to several factors like policy, infrastructure, medical staff, and front-line workers. When the world entered the new millennium, there was a consensus among 191 UN member states along with multilateral agencies to reduce multi-dimensional poverty, ensure economic well-being and social development through global partnership. This was the genesis of the millennium development goals (MDGs) which were to be attained between 2000-2015. The MDGs were a set of eight broad metrics that ranged from addressing issues related to eradicating extreme poverty, provision of universal education, ensuring environmental sustainability, gender equality and

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specifically with regard to health were in the area of reducing child mortality (MDG 4), improving maternal health (MDG 5) and combating HIV/AIDS and malaria (MDG 6) (WHO, n.d.).

1.1 From MDG to SDG:

By the end of the MDG era, there was a feeling that MDGs were too narrow in their scope as they did not touch upon the broader health and developmental issues confronting the world. This led to more than 150 world leaders adopting the new 2030 Agenda for Sustainable Development, with the objective of finishing the unfinished business of the MDGs. The Sustainable Development Goals (SDG) having a span of 15 years (2016-2030) are wider in scope and they aim to end poverty, hunger and inequality, take action on climate change and the environment, improve access to health and education, build strong institutions and partnerships.

Health is a central dimension of the Sustainable Development Goal (SDG). Goal 3 states "Ensure healthy lives and promote wellbeing for all at all ages". It puts forward targets and indicators relating to ensuring healthy lives and promoting well-being for all at all ages. The Goal comprises of indicators in the area of maternal, infant and neo-natal mortality, institutional deliveries, incidence of communicable and non-communicable diseases and end of any related epidemics, prevention and treatment of substance abuse, road accidents, access to affordable medicines and treatment on a sustainable basis and so on.

Health-related indicators directly pertaining to health services, health outcomes, and environmental, occupational, behavioral, or metabolic risks with well-established causal connections to health- are present in 10 of the other 16 goals (Singh, n.d.).

In 2015 193 countries of the UN General Assembly adopted the development agenda titled 'Transforming our world: the 2030 Agenda for Sustainable Development'. India is also one of the

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signatories to the declaration and attaches high priority to it. Specifically, in relation to 'Health' since India considers it is a constitutional obligation of the state.

2. Health Policies & Programmes: India

Health systems and polices have a critical role in determining the manner in which health services are delivered, utilized and affect health outcomes. 'Health' in India being a state subject, despite the issuance of the guidelines by the central government, the final prerogative on implementation of the initiatives lies with the states. The Bhore Committee Report (1946) has been a landmark report for India, from which the current health policy and systems have evolved (NHP, 2015). Considering the poor socio-economic status of majority of Indians, the committee recommended the three-tiered health-care system to provide preventive and curative health care in rural and urban areas placing health workers on government payrolls and limiting the need for private practitioners. However, lack of capacity of public health systems to provide access to quality care resulted in a simultaneous evolution of the private health-care systems which gradually expanded (NHP, 2015).

2.1 National Health Policy I (NHP I):

To acknowledge health as a basic human right, India formulated its first National Health Policy (NHP) in 1983 with its main focus on provision of primary health care to all by 2000 (Sundaram, 2017). It prioritized setting up a network of primary health-care services using health volunteers and simple technologies establishing well-functioning referral systems and an integrated network of specialty facilities (Duggal, 2001). In the early days of 1970's and 1980's health issues such as tuberculosis, malaria, visual impairment, mental health, leprosy and AIDS received prime attention via programmes such as National Tuberculosis Control Programme (NTCP), National Leprosy Eradication Programme (NLEP), National Mental Health Programme (NMHP) and so on. Among these National AIDS Control Programme was one of the major programmes launched during NHP I.

2.1.1 National AIDS Control Programme (NACP):

Government launched NACP-I in 1992 to combat the widespread disease across the country. The first phase comprised of awareness generation, systems for monitoring the spread of HIV epidemic, procedures for accessing safe blood and preventive services for high risk groups. The second phase was launched in 1999 and it focussed on introducing national level policies such as National AIDS Prevention and Control Policy, National Blood Policy for safe blood transfusion and transmission and scaling up of existing interventions for high risk groups at key locations. National Adolescent Education Programme (NAEP) and National Anti-Retroviral Treatment (ART) programme were also launched in this phase (NACO.gov, n.d.).

NACP III was launched in 2007 with the focus on halting and reversing the HIV epidemic in India within a period of five years. The target was set to reduce new infections by 60 per cent in high prevalence states to obtain reversal of the epidemic and by 40 per cent in the vulnerable states to stabilize the epidemic. The MDG target for 2015 was in alignment with the XIth Five Year Plan and aimed at halting and reversing the trend (Planning Commission, 2008, p100). Prevention & Care, Support & Treatment (CST) were the two important pillars for AIDS control in India. The capacities of State AIDS Control Societies (SACS) and District AIDS Prevention and Control Units (DAPCUs) were strengthened. Technical Support Units (TSUs) were established at National and State level to assist in the Programme monitoring and technical areas (NACO.gov, n.d.).

2.2 National Health Policy II (NHP II):

The second health policy was introduced in 2002 and was built on NHP I. The goals outlined in the policy aligned with the MDGs especially with respect to reduction in cases of HIV/AIDS, malaria and other diseases (Agarwal, 2005). The policy directed the states to provide health services to the general public through decentralization and collaborating with the private sector. It proposed increased public expenditure on health care and emphasized on increasing the use of non-allopathic form of medicines such as ayurveda, unani and siddha (Duggal, 2006). Several programmes and schemes were launched to achieve the MDGs such as National Rural Health Mission (NRHM), National Urban Health Mission (NUHM), Janani Suraksha Yojana to improve maternal health (MDG 5) and reduce child mortality (MDG 4). The existing National Aids Control Organization (NACO) and National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS) aimed at achieving the MDG 6 of combating AIDS, malaria and other such diseases.

The other programmes launched during NHP II were National Tobacco Control Programme (NTCP), National Programme for the

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Health Care of Elderly (NPHCE), National Palliative Care Program and others.

2.2.1 National Rural Health Mission (NRHM):

NRHM was launched on 12th April, 2005 to provide equitable, affordable and quality health care to the rural population, especially the vulnerable groups. NRHM focused on Reproductive, Maternal, Newborn, Child Health and Adolescent (RMNCH+A) services. The thrust of the mission was on establishing a fully functional, community owned, decentralized health delivery system with inter-sectoral convergence at all levels (NHM, n.d.). To accomplish the same, the key focus of NRHM was on provision of trained human resources such as Accredited Social Health Activists (ASHA), Community Health Centres (CHC), doctors, staff nurses, Auxiliary Nurse Midwife (ANM) and management systems for the same. The Village Health Sanitation and Nutrition Committees (VHSNCs) and Patient Welfare Committees were created at public facilities to ensure community participation. A web based mother and child tracking system was established to track the progress of 105 million mothers and babies (Chokshi et al, 2016).

2.2.2 National Urban Health Mission (NHUM):

To meet health care needs of the growing urban population especially the marginalized urban poor, and improving their access to essential primary health care services GoI launched NUHM a sub-mission of the National Health Mission (NHM) on 1st May 2013. The scheme converges with various schemes relating to wider determinants of health like drinking water, sanitation, school education and so on. The scheme is implemented by the Ministries of Urban Development, Housing & Urban Poverty Alleviation, Human Resource Development and Women & Child Development (NHM, n.d.).

2.2.3 National Health Mission (NHM)

Both NUHM and NRHM were subsumed to form NHM in 2013 (NHP, 2018). The focus of NHM was on decentralized health planning, service delivery, creation of knowledge hubs within district hospitals, strengthening secondary level care at district hospitals and expanding outreach services. It also focused on increasing community participation, behaviour change communication, human resources development, public health management, and health management information systems (HMIS). NHM aims at reducing the out-of-pocket (OOP) expenses by enabling dignified treatment for the poor and facilitate remarkable improvements in the health indicators. The scheme targets for holistic development by attaining wider social determinant factors such as water, sanitation, nutrition, gender and education which affect health indirectly (Darpg.gov.in, n.d.).

2.2.4 Janani Suraksha Yojana (JSY) & Janani Shishu Suraksha Karyakram (JSSK):

In 2005 the MMR was 254 per 1,00,000 live births and IMR was 58 per 1000 live births. In order to improve maternal health and reduce child mortality, targets of MMR 109 and IMR 27 were set to be achieved by 2015 (Ministry of Statistics..., n.d., Niti Aayog, n.d.). As a result, the National Maternity Benefit Scheme (NMBS) was modified to JSY, a safe motherhood intervention under the NRHM in April 2005.

JSY focused on ensuring skilled attendance at birth for the mothers and new born babies to save them from pregnancy related complications and deaths. This was targeted to be achieved by promoting institutional delivery among pregnant women (Vikaspedia, n.d.).

In 2011 the Ministry of Health & Family Welfare (MoHFW) launched JSSK on 1st June with the objective of reduction of both maternal and infant mortality and morbidity. The scheme provides free entitlements for drugs and consumables, diagnostics, blood and diet up to three days for normal delivery and seven days for C-section. The scheme also provides to and fro free transportation of patients. For the sick newborns, access is provided to public health institutions for treatment till 30 days after birth (Narzary, 2012).

2.2.5 National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS):

Non Communicable Diseases (NCDs) such as cardiovascular diseases, cancer, chronic respiratory diseases, diabetes, cause considerable loss in potentially productive years of life. Losses due to premature deaths related to heart diseases, stroke and diabetes have cascading impact. With the aim to prevent and control NCDs thorough awareness generation, behaviour and life-style changes and early diagnosis of diseases MoHFW launched NPCDCS in 2010 (NHM.gov.in, n.d.).

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Under the programme, for opportunistic screening outreach camps were organized. For the management of chronic NCDs, cells and clinics were set up exclusively at district level for NCDs. Also Cardiac Care Units for emergency cardiac care and Day-Care Centres for cancer care were also established at district levels in the country (NHM.gov.in, n.d.).

2.2.6 Medical Insurance

Despite India being global supplier of life-saving, affordable and good quality generic medicines, lakhs of families are driven into poverty because they are forced to spend much of their earnings and savings on medications to treat chronic and life-threatening diseases (Business Line, 2018). According to Public Health Foundation of India (PHFI) study (2011), about 68 per cent of the Indian population has limited or no access to essential medicines. The availability of free medicines in public health facilities declined from 31.2 per cent to 8.9 per cent for inpatient care and from 17.8 per cent to 5.9 per cent for outpatient care. India has one of the lowest per capita healthcare expenditures in the world (Salve, 2018). To address this issue GoI introduced health insurance for the poor. Schemes such as Rashtriya Swasthya Bima Yojana, Pradhan Mantri Jeevan Jyoti Bima Yojana and Ayushman Bharat – National Health Protection Mission were launched in 2008, 2015 and 2018 respectively.

2.2.7 Rashtriya Swasthya Bima Yojana (RSBY):

RSBY was launched in 2008 by Ministry of Labour and Employment, GoI. The policy offers a total sum insured of INR 30000/- per annum on a family floater basis. It also ensures coverage of all pre-existing diseases, cashless facilities and transportation cost of up to INR 1000/-. The cost of the smart card (i.e. insurance card) and 75 per cent of the annual premium is borne by the Central Government. Whereas the remaining 25 per cent of annual premium and other administrative costs are borne by the State Government. The beneficiaries are required to pay INR 30/- as registration fee and henceforth as renewal fee.

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2.2.8 Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY)

PMJJBY was launched in 2015 with the aim to cover the poorest of India with a life insurance (Vishwanathan, 2015). The scheme was open for all individuals in the age group between 18-50 years provided they have their bank accounts opened under the Pradhan Mantri Jan Dhan Yojana. The annual premium INR 330/- is tax exempted and provides life cover of INR 2 lakh (Garg, n.d.). The cover under PMJJBY is only for death hence it benefits only the nominees (Dhawan, 2018).

2.2.9 Ayushman Bharat – National Health Protection Mission:

As a major step towards universal health coverage for making it equitable, affordable and accessible, GoI launched the Ayushman Bharat scheme in 2018 under Ministry of Health and Family Welfare (MoHFW). It aims to cover 50 crore people from catastrophic healthcare spending by offering a coverage of upto INR 5 lakh per year for secondary and tertiary care. Under the scheme, the beneficiary can avail benefits in both public and empanelled private facilities. With the underlying aim of reducing the OOP on healthcare, the scheme also ensures improvement in the quality of care provided at healthcare institutions.

2.2.10 NGOs & Social Enterprises: Transforming Health Care

As the government has its own limitations it has received active support from the NGOs to supplement public-health services in specific geographical areas underserved by government facilities. NGOs in India have played a key role in managing polio, tuberculosis, malnutrition, infant and maternal mortality and other diseases. Grassroot NGOs like SNEHA, Care India, Karuna Trust, Maya, JHPIEGO, Aastha Parivaar, PACE, Prasar and others are more effective in reaching the poor than public and private providers because they are locally based and are also more accountable to their communities. NGOs like Cehat, Chetana, Voluntary Health Association of India and few others have lobbied with the Government for support in fulfilling the Government's health agenda.

In the post liberalization social entrepreneurs are increasingly active in the healthcare space - setting up ventures ranging from low-cost hospitals and tele medicine clinics like Aravind Eye Care, Narayana Multi Speciality Hospital, Vatsalya Health Care and so on. With the support of social investors social entrepreneurs are designing progressive delivery models combined with innovative technologies that can bring down the cost of care while improving accessibility and quality.

3. India Health Scenario

It is an irony that India, being one of the largest emerging economies has a long way to go to improve its human development index (HDI). India is one of the top five countries where 60 per cent of the world's one billion extreme poor people live (United Nations, 2015). The poverty head count ratio at the national level was as high as 21.9 percent in 2011-2012 (Ministry of Statistics..., 2017). Poverty has a direct correlation with poor health. It is both a cause and consequence of lack of nutrition and unhealthy living conditions. Some key factors to understand the health scenario in India have been highlighted further below.

3.1 Child and Maternal Health:

The annual number of under-five deaths in India was as high as 1.2 million in 2015 and is more than six times higher than China. Though India was close to attaining the MDG set for the under-five mortality rate, it had missed the targets for infant mortality (37 per 1000 births vs. targeted 27 for 2015) (Niti Aayog, n.d.). Among the states, only Kerala and Tamil Nadu achieved the MDG target of decline in infant death per thousand live births. It is a matter of concern that although the level of mortality has reduced substantially in the MDG period, the absolute numbers of maternal and child deaths are massive. The performance on health and nutrition has improved but stayed sub-optimal. India continues to have widespread hunger. In 2016, it ranked 97 among 118 developing countries in the Global Hunger Index (Varma, 2016).

In case of maternal mortality India achieved MMR 130 for 2014-16 vs. target of 109 in 2015 (Niti Aayog, n.d.). As per UNICEF data, it was estimated that annually 44,000 women died due to preventable-pregnancy related causes in India. As per the National Family Health Survey – four (NFHS-4), the percentage of births attended by a doctor/ nurse/ lady health visitor (LHV)/ auxiliary nurse midwife (ANM)/ other health personnel in 2015-16 was 81.4 per cent (Ministry of Statistics..., 2017). Only Kerala

Among the states, only Kerala and Tamil Nadu achieved the MDG target of decline in infant death per thousand live births. It is a matter of concern that although the level of mortality has reduced substantially in the MDG period, the absolute numbers of maternal and child deaths are massive.

and West Bengal managed to achieve the target of decline in maternal deaths. Many populous districts from north-central and eastern India lagged behind. Maternal mortality is associated with low incomes and poor socio-economic backgrounds. The need for appropriate pre-natal and anti-natal care forms the basis of healthy mother and child. Lack of knowledge about the correct care and nutrition, dearth of professionals, inaccessibility to the healthcare institutes lead to the death of mother and child.

3.2 Communicable and Non-communicable diseases:

NACO & National Institute of Medical Statistics's Report (2015), indicate that India successfully achieved the MDG 6 of halting and reversing the HIV epidemic from 0.86 per cent in 2004 to 0.32 per cent in 2012-13 (Ministry of Statistics…, 2017). Albeit, HIV infection still holds a paramount threat to the health of the country. In spite of the reducing number of cases, the India HIV Estimation 2017 report highlighted that, the national adult (15–49 years) HIV prevalence in India was estimated at 0.22 per cent. An estimated 69.11 thousand people died of AIDS-related causes nationally in 2017. The estimated prevalence was highest in north-eastern parts of India such as Mizoram, Manipur and Nagaland ranging from 2.04 per cent to 1.15 per cent. The total number of people living with HIV (PLHIV) in India was estimated at 21.40 lakhs whereas Maharashtra had the highest number of PLHIV i.e. 3.30 lakhs (NACO, 2017). Commercial sex worker groups showing high risk behaviour has been one of the main drivers of HIV epidemic in India. "It is estimated that up to 10 million Asian women sell sex and that at least 75 million men buy it regularly". Men having sex with men (MSM) and injecting drug users (IDU) driven infections are also on a rise (Parannjape & Challacombe, 2016). Similarly, India's performance has been reported as moderately off-track for the reversal of the incidence of malaria and other major diseases.

In the current decade India is facing an increased burden of Non Communicable Diseases (NCDs). Although the occurrence of

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NCDs in developed countries is associated with an age of 55+ the onset of the same in India occurs much earlier i.e. 45+. Consequentially, there is increased rate of cardiovascular and respiratory diseases, diabetes and so on. The country faces double burden of non-communicable and communicable diseases. According to Arokiasamy (2018), "The three leading causes of mortality—cardiovascular diseases, respiratory diseases, and diabetes—together accounted for a substantial proportion of total deaths in India in 2016. In absolute terms, cardiovascular diseases, respiratory diseases, and diabetes kills around 4 million Indians annually (as on 2016), and most of these deaths are premature, occurring among Indians in the age group of 30–70 years".

3.3 Health Infrastructure and Cost:

The increased number of deaths brings the focus to the next major challenge i.e. access to quality and affordable healthcare in the context of inaccessibility and lack of trust in the public healthcare system. Rural India faces acute shortage of medical health professionals. The sub centres have been short of staff such as ANMs and health assistants whereas the Primary Health Centres (PHCs) lack doctors (Chettri, 2018). According to Rural Health Statistics (2017), of the 156,231 sub-centres in India, 78,569 were without male health workers, 6,371 without ANMs and 4,263 without either. As per Indian Public Health Standards (IPHS), PHCs are required to have 25,650 doctors across India to tend to a minimum of 40 patients per doctor per day for outpatient care. Meeting these standards would enable reaching out to one million patients per day. Chettri (2018) reports that the shortage of doctors at the PHCs left 12 per cent patients without primary healthcare. The distribution of qualified health workers is also skewed as the concentration is more in urban areas than rural areas. Consequentially, patients prefer to avail treatment at private healthcare institutions at higher costs and subsequently pushes the middle and lower income groups into poverty. The healthcare expenditure in India has been predominantly supported by the out-of-pocket (OOP) expenses. Study

The three leading causes of mortality—cardio vascular diseases, respiratory diseases, and diabetes—together accounted for a substantial proportion of total deaths in India in 2016. In absolute terms, cardiovascular diseases, respiratory diseases, and diabetes kills around 4 million Indians annually (as on 2016).

conducted by Public Health Foundation of India highlights that about 55 million Indians are pushed into poverty in a single year because of spending on health care cost. 38 million of them fell below the poverty line due to spending on medicines alone (Salve, 2018).

3.4 Waste Management:

Community health is an underlying principle that impacts the overall well-being of the society. Sanitation and hygiene in the community directly impacts the health of the residents. The country faces a gigantic challenge of waste management. "Over 377 million urban people live in 7,935 towns and cities and generate 62 million tonnes (MT) of municipal solid waste per annum. Only 43 MT of the waste is collected, 11.9 MT is treated and 31 MT is dumped in landfill sites" (Lahiry, 2019). The absence of segregation at source and the subsequent treatment of waste has led to the excessive garbage going to the landfills. It has been observed that three-fourth of the total budget allocated for solid waste management is utilized for collection and transportation, leaving less room for treatment and disposal (Lahiry, 2019). The untreated accumulated solid waste within and outside the city is the root cause for various diseases affecting the population across all age groups. Waste management is hence a major component of the community health (Lahiry, 2019).

To achieve nationwide sanitation coverage and prioritize sanitation, Swachh Bharat Mission (SBM) was launched in 2014 to achieve clean India by 2019. Under the Ministry of Drinking Water and Sanitation (MDWS) the mission has two sub missions, the Swachh Bharat Mission (Gramin) and the Swachh Bharat Mission (Urban). Under the mission in a span of less than five years more than 9 crore household toilets were built and 30 states/union territories were declared open defecation free (Sbm.gov.in).

A study by an independent verification agency under the World Bank (2019) reported that "96.5% of the households in rural India who have access to a toilet use it. It also re-confirmed the Open Defecation Free (ODF) status of 90.7% of villages which were previously declared and verified as ODF by various districts and states". The study also reported that 95.4 per cent villages minimal litter stagnant water (Sharma, 2019). The positive outcome of the programme shall go a long way in curbing the issue of waste management.

4. Discussion

Economic growth of a country is directly dependent on the health of the population. Despite various challenges India has made considerable progress in few health indicators. Life expectancy at birth has increased, infant mortality and crude death rates have been reduced, and diseases such as small pox, polio and guinea worm have been eradicated. With each health policy there has been transformation in approaches to health care.

4.1 Reasons: Slow Progress:

Considering the financial and non-financial investments made so far, what prevents India's healthcare system from delivering world-class services, especially for rural India? One of the key reasons being that under the VIIth schedule of the Indian Constitution, 'Health' is a state subject. As there is a huge disparity in the social conditions in the rural and urban areas and also between different states based on gender, geographical area, economic status and political will healthcare outcomes have remained divergent. Further, health being a state subject, the quality of the state administration and inter-district disparities in coverage of health services also affects the outcomes (Ministry of Health..., 2016). Consequentially in the absence of adequate public health system, a large section of the society is exposed to financial health shocks as they are dependent on private healthcare. Though the government has designed insurance schemes to ease out the burden on citizens, they have been largely unsuccessful due to lack of awareness, inadequate insurance cover and lack of coverage for outpatient costs (Salve & Yadavar, 2018).

Experts attribute country's health problems on its appalling spending of little over one percent of GDP on public health. The Xth, XIth &XIIth Five Year Plans adopted the MDG framework for attaining social development. The targets of the MDGs converged with India's own development goals. Data indicates that India's progress toward health related MDGs, has been mixed. The nation achieved the required trend reversal in the fight against HIV/AIDS. Child mortality and maternal mortality were moderately on track. Trend reversal was achieved in the fight against malaria and TB (Pandave, 2015).

Shortage of health infrastructure, health manpower and inefficiency in capturing the economic benefits of good health or the direct financial consequences of ill health were some of the major reasons for non-attainment of MDGs (Ministry of Health..., 2016). In the scenario of growing NCDs, MDGs did not capture the importance of prevention, early detection and response to

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the threats from chronic diseases. The need for reducing behavioural risk factors related to alcohol and tobacco consumption, dietary intake of sugar, salt and fats and physical inactivity were also not covered in the MDGs. On the whole in the MDGs the focus was on aggregate targets ignoring the inequalities within the country (Ministry of Health..., 2016).

4.2 SDG & NHP 2017:

In 2015 Sustainable Development Goals replaced the MDGs as millions of people around the world still struggled with various social issues. The SDGs intend to shift the world onto a more sustainable path. There were unfinished agendas in India too with regard to addressing issues of hunger, gender equality, improving health services and getting every child into school beyond primary level. The objective for SDGs "No one is to be left behind" —in context of India is indicative of the overarching goal to reduce inequalities across gender, region, class, and caste (Singh, n.d.). Positioned as a key feature of human development, SDG 3, the 'Health Goal' aims at "ensuring healthy lives and promote well-being for all in all ages". It has 13 broad targets that cover a wide spectrum of health areas some of which have received little attention in the past. All the other 16 SDGs are also interlinked and connected to the Goal 3.

4.3 National Health Policy 2017: Critique:

To address the contemporary and emerging challenges rising from changing demographic, socio-economic and epidemio-logical environments there is marked shift in healthcare priorities. In this context GoI formulated National Health Policy 2017. The policy recognizes SDG's to be of "pivotal importance" and aligns with it by identifying seven priority areas- "air pollution, better solid waste management, water quality, occupational safety, road safety, housing, vector control, and reduction of violence and urban stress." The policy provides for raising public health expenditure to 2.5 per cent of the GDP by 2025.

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ensure equity and quality of services NHP 2017 calls for "achieving convergence among the wider determinants of health" and indicates to drive convergent action with other sectors like nutrition, water sanitation & hygiene, environment education, housing and so on. The policy also addresses "neglected health issues such as disability and transgender health" (PIB, 2017).

The policy gives importance on Panchayati Raj Institutions "to play an enhanced role at different levels for health governance, including the social determinants of health." In emphasizing the need for "an empowered public health cadre," the NHP elucidates the need to "to address social determinants of health effectively, by enforcing regulatory provisions." The addition of gender based violence in national programmes, and the demand for improved sensitization of health systems to provide health care "free and with dignity in the public and private sector," are pioneering contributions to better health care in India (PIB, 2017).

To improve the efficiency and outcome of the healthcare system NHP promotes extensive deployment of digital tools. The policy lays emphasis on developing sustainable health care models to provide curative, preventive and promotive healthcare through public private partnership in the area of secondary and tertiary care (PIB, 2017).

Attaining universal health coverage is at the core of SDGs. In this context to enable economically deprived citizens to meet OOP expenditure, India has introduced Ayushman Bharat: National Health Protection Scheme (AB-NHPS) in 2018 which has a defined benefit cover of Rs.5 lakhs per family per year covering over 10 crore families (India.gov.in, n.d.). The scheme though is well conceptualized in terms of helping the citizen to procure quality healthcare, the execution of the same is likely to be problematic because each state is mandated to contribute funds

Attaining universal health coverage is at the core of SDGs. In this context to enable economically deprived citizens to meet OOP expenditure, India has introduced Ayushman Bharat: National Health Protection Scheme (AB-NHPS) in 2018. The scheme though is well conceptualized in terms of helping the citizen to procure quality healthcare, the execution of the same is likely to be problematic because each state is mandated to contribute funds for insurance. In such scenario states will divert funds allocated to building healthcare infrastructure to insurance.

for insurance. In such scenario states will divert funds allocated to building healthcare infrastructure to insurance. If the state has poor health infrastructure, patients are likely to access hospitals of other states which have better facilities. Additionally, as of now there is no regulatory mechanism in place to monitor the quality of service provided to the patients by private hospitals. It is likely that private hospitals may charge more to the patients than what the scheme covers (Raman, 2018).

According to the policy each state can set its own health standards, this can also be an area of concern as quality of healthcare across the country has to be uniform. As taxation reforms have reduced the fiscal space of states, contribution from Centre for health care is essential. Experts have identified critical gaps in the policy document and are apprehensive about the seriousness and ability of the government to implement the policy (Sundaram, 2017).

5. Conclusion & Recommendations

Experts predict that India cannot become a knowledge economy or a global superpower with its current quality of healthcare. Health must be high on the national and state agenda as it is the cornerstone for economic growth of the nation. To implement the new health policy intent, it remains to be seen if the government will demonstrate the required political will to address the questions of quality, cost and equitable access to healthcare.

As each state in India is responsible for healthcare there is a need to develop a heath investment plan for each state to strengthen and build robust health systems, infrastructure and staffing with a focus on rural areas. As there is sizable magnitude of the private sector in India, a more effective engagement with private health care providers/ NGOs and social enterprises is essential. Alongside there is a need to develop a strong and robust system for monitoring, evaluation and accountability. It is essential to regularly review the collated data and analyse the progress made for revising strategies based on the challenges.

Given the state of primary healthcare in India, government needs to introduce more community schemes such as the Swacch Bharat Abhiyan to maintain hygiene and sanitation, Swajal to ensure access to clean drinking and waste management initiatives to reduce actual spread of diseases and not concentrate merely on curative health. It is essential to raise the number of healthcare professionals and adopt a decentralized approach to medical governance.

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Section II

This section consists of three articles which discuss the acute shortage of primary healthcare facilities in India. The articles describe the innovative strategies adopted by grass-root NGOs to promote health seeking behaviour among the target audience and to prevent mortality and morbidity. Further, the challenges faced by NGOs to provide cost effective and quality healthcare to the beneficiaries are also discussed in this section.

24

Capacity Building for Effective Maternal Care
Case of Jhpiego

Abstract: *Maternal and neonatal mortality has been a prevailing problem in India since many years. Although, the figures have improved over the years, many facilities in rural areas still lack the basic infrastructure and knowledge required for the care of 'to-be' and new mothers and their infants. India contributes to 15 per cent of the global maternal death toll. About 44, 000 Indian women die each year due to complications arising during childbirth. About 70 per cent of these can be prevented (Googai, n.d.). Manyata, an initiative led by Jhpiego, reaches out to such facilities in the private healthcare sector to provide trainings and ensure standardisation of the procedures in order to prevent such cases of infant and maternal deaths.*

The article here describes the impact of the programme in Jharkhand and also analyses if it can eventually be transformed into a business model with possible up scaling and penetration. The primary research revealed that there existed gaps between the programme's implementation and the expectations of the facilities, like costs involved, time required, perceived need of programme, the ease of implementation considering the existing infrastructure and readiness to change. The article proposes the recommendations to the existing system by infusing it with technology and better ways of engagement to fill in those gaps. The paper is an outcome of Mr. Tanay Purnesh's and Ms. Surabhi Jha's 'We Care: Civic Engagement' internship with Jhpiego in February, 2018.

1. Introduction

Approximately 830 women die from preventable causes related to pregnancy and childbirth every day around the globe (WHO, 2018). According to the estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division, in 2015, 99 per cent of global maternal deaths were reported in the developing nations with approximately 40 per cent from Southern Asia (Worldbank.org, 2015). With the initiatives taken under Sustainable Development Goal (SDG) - 3 which promotes "Healthy lives and well-being for all at all ages" of the population, there has been a decline in the maternal mortality by 45 per cent globally. However, there remains a lot to be addressed in various parts of the world. In many rural areas, even today, only 56 per cent of the births are attended by skilled professionals (Undp.org, n.d.).

India ranks 129 among 184 nations on maternal mortality (World Bank) and 145 out of 193 nations on infant mortality (Dey, 2018). In India, the Maternal Mortality Rate (MMR) has

declined by approximately 69 per cent from 1990 up to 2015 (Worldbank.org, 2015) due to launch of National Rural Health Mission (NRHM) in 2005. Schemes like Janani Suraksha Yojna (JSY) and Janani- Shishu Suraksha Karyakram (JSSK) under NRHM provide incentives to pregnant women to access health care and ensuring nil out-of-pocket expenses resulting in a huge turnaround (Kaul, 2017). Disappointingly, the country still loses around 130 women during child birth for every one lakh live births as estimated in 2014-16 (Niti.gov.in, n.d.). According to UNICEF (2018), India still shares 24 per cent of all global new born deaths. The neo-natal mortality rate in India was 25.4 deaths per thousand live births in 2016. More than 80 per cent of the new born deaths in 2016 were from preventable and treatable causes (UNICEF, 2018). In spite of increase in institutional deliveries and the increasing share of private sector, more than six lakh children died in the country during their first month in 2016 (PTI, 2018).

The varying mortality ratios across various geographies in India are due to the inequities and differences in the quality of healthcare services and facilities. On one hand there is state like Kerala with very low number of deaths during childbirth and on the other hand, are states like Uttar Pradesh and Rajasthan with almost 400 per cent higher ratio points. Such differences demand a need of standardization and best practices to be adopted across the healthcare facilities to minimize the overall death rate in the country (Dey, 2018).

According to NITI Aayog in 2004-06, in the newly formed tribal state of Jharkhand, the MMR was observed to be 312 per lakh live births. The Infant Mortality Rate (IMR) was also high i.e. 49 per thousand live births in 2004 (Niti.gov.in, n.d.). The reasons are substandard health facilities, poor anti-natal care facilities, low percentage of women opting for institutional deliveries and so on (IANS, 2015). Consequentially, Jharkhand's MMR was higher than the national average, tagging it as one of the 10 most underperforming states of the country (Panday, 2016).

According to UNICEF (2018), India still shares 24 per cent of all global new born deaths. The neo-natal mortality rate in India was 25.4 deaths per thousand live births in 2016.

There has been a considerable decline in MRR to 165 per lakh live births in 2014-16 and IMR 29 per thousand live births in 2016 (Niti.gov.in, n.d.). The gradual improvement have been observed due to initiatives undertaken by the government to promote institutional deliveries through JSY, provision of 24x7 obstetric care services, provision of anti-natal, intra-natal and post-natal care and other similar programmes (PIB, 2015). Despite these efforts, even in 2016, of the total deliveries in Jharkhand, only 61.9 per cent were institutional deliveries as against the national average of 78.9 per cent (Niti.gov.in, n.d.).

As observed by UNICEF, there is a direct linkage between reduction of MMR to the conduct of deliveries by skilled birth attendants with appropriate pre and post-natal care. Evidence reveals that "midwives who are equipped with the required skills and competencies are able to provide 87 per cent of the needs of all women and newborns" hence impacting MMR and IMR (WHO, 2018). UNICEF puts trained midwives as an essential pillar for upgrading universal health coverage (UNICEF.org, n.d.). To reduce MMR and IMR in Jharkhand, Johns Hopkins Programme for International Education in Gynaecology and Obstetrics (Jhpiego) has been executing "Manyata" – a programme with the objective of improving the quality of maternal and new born health.

2. About Jhpiego

Jhpiego is an international, non-profit health organization affiliated to The Johns Hopkins University and is present in over 155 countries. Jhpiego works with health experts, governments and community leaders to provide high-quality health care for the poor. It has been working in the fields of maternal, new-born & child health, family planning & reproductive health, cervical cancer prevention & treatment, infection prevention and control (Jhpiego.org, n.d.).

Since its inception in 1974, Jhpiego has been innovating in the areas of maternal and neonatal health worldwide. It began working in India in 1980 by collaborating with Ministry of Health and Family Welfare, Government of India (GoI) to strengthen reproductive health services (Jhpiego, 2017).

In 2016, of the total deliveries in Jharkhand, only 61.9 per cent were institutional deliveries as against the national average of 78.9 per cent. There is a direct linkage between reduction of MMR to the conduct of deliveries by skilled birth attendants with appropriate pre and post-natal care.

In 2009, Jhpiego set up its office in India. It has been working with GoI at national and state levels for providing technical assistance in the areas of strengthening postpartum family planning (PPFP) services, strengthening the nursery midwifery cadre in India and improving quality of Maternal & New born Health (MNH) (Jhpiego, 2018).

The organization has been providing technical assistance to 'Manyata' - an initiative to work with the local health practitioners for improving their quality to deliver better, respectful and quality pre and post-natal care services to pregnant women. It is a programme that aims to create a robust quality improvement and assurance system to help private maternity care facilities improve their quality of services. Manyata is a joint initiative by the Federation of Obstetric and Gynaecological Societies of India (FOGSI), Jhpiego, MacArthur Foundation and MSD for Mothers (known as Merck for Mothers in U.S. and Canada) (Jhpiego, 2018).

3. Project Focus

Manyata is currently funded by 'MSD for Mothers'. To sustain the programme post funding phase, the organization wanted to test its financial viability. In this context, the "We Care interns", were assigned the task to study the cost involved (direct and indirect) for the healthcare facilities in the implementation of Manyata. Costing was to be determined in terms of number of hours of training, up-gradation of equipment, latest tools/techniques like adhering to a set of 15 clinical standards, trainings on key lifesaving practices and post training on-site mentorship and other components. Interns were required to work out a business plan. The objectives of the assignment were as follows:

1. To explore the impact of Manyata and challenges faced towards implementation at four healthcare facilities.
2. To gather recommendations for Manyata from four healthcare facilities.
3. To determine the financial viability of Manyata, for making it self-sustainable in future.

It has been working with GoI at national and state levels for providing technical assistance in the areas of strengthening postpartum family planning (PPFP) services, strengthening the nursery midwifery cadre in India and improving quality of Maternal & New born Health (MNH)

4. Methodology

To begin with, basic understanding about Manyata programme was gathered from secondary literature like internal presentations, white paper-MSD for Mothers, Jhpiego factsheet and so on. Personal discussions with Jhpiego's core team also assisted in getting information. To achieve the above objectives, it was decided to conduct an exploratory research. Out of 64 private healthcare facilities affiliated with Jhpiego spread across eight cities of Jharkhand, four facilities from Ranchi were selected for the study based on convenience sampling method. The healthcare facilities were selected on the following parameters: a) interest in quality improvement, b) facility having less than 100 beds, c) conducting 50-100 deliveries per month, d) ability to meet basic infrastructure requirements for safe care practices. Based on the above parameters healthcare facilities covered for the study were: a) Nath Nursing Home, b) St. Barnabas Hospital, c) Summer Hospital, d) Aastha Mother & Child Care. To explore the opinions of the various aspects of the execution of Manyata programme it was decided to interview: a) doctors, b) nurses, c) administrative team at the healthcare facility. Primary data was collected through personal interviews.

The data points for the study were: a) improvement in the performance of nurses, b) improved hygiene practices, c) patient record keeping and usage of standardised manuals, d) improved compliance, e) actual expenses incurred f) expectations and areas of improvement of Manyata intervention, g) willingness to adopt a fee for service model, h) perceptions about expenses incurred by Jhpiego, i) future plans for nurse training.

The data collected was documented qualitatively. Data analysis was carried out with the help of content analysis technique. Comparison among the facilities was carried out to develop a correlation based on the findings. On the basis of the initial correlation and analysis, feedback from the Jhpiego team was gathered and follow up visits were scheduled to the healthcare facilities to collect the missing data. Post follow up final data analysis was conducted.

5. About Manyata programme

Through the Manyata programme, FOGSI's 16 clinical standards on care during and after delivery are being implemented. Manyata's team comprising of Quality Improvement (QI) Hub officer's conduct trainings on essential labour room practices. This is followed by six structured 'Mentorship and Supportive Visits' (MSVs), over four-and-a-half-month period, where the QI Hub officers handhold and provide necessary orientation on skills considered important for quality care in the labour room. After completion of the six MSVs, the facilities are put up for the assessment on FOGSI's 16 clinical standards for Manyata's certification. FOGSI/Jhpiego also conducts pre assessment of healthcare facility prior to their application for National Accreditation Board for Hospitals (NABH) certification.

[1] Federation of Obstetric and Gynaecological Societies of India (FOGSI).

6. Findings

The four healthcare facilities i.e. Nath Nursing Home, St. Barbanas Hospital, Aastha Nursing Home and Summer Hospital based in Ranchi were affiliated to Jhpiego as they met the prerequisites of Manyata programme. Based on the data collected through personal visits and interventions with the respondents, the findings of Manyata's intervention are elucidated below:

6.1. Nath Nursing Home

Set up in 2001, the nursing home accredited by NABH certification, has over 50 beds. It has speciality in gynaecology and obstetrics. The clinic is equipped with latest equipment and has advanced surgical instruments to deliver meticulous surgeries and procedures.

Prior to the commencement of Manyata programme in 2014, all the doctors in the department varied in their treatment approach. Absence of standard pre and post-natal care procedures posed various implementation challenges for nurses. Even the sanitation and hygiene facilities at the nursing home were of sub-standard quality and required up-gradation.

The hospital team felt the need to improvise the staff capacities to offer better quality treatment for their patients. This urge prompted them to be a part of Manyata programme.

Manyata's team conducted six trainings per facility for four to six months for the nurses and enabled them to follow standard practices. Reference manuals developed by Manyata were provided to the nurses for effective implementation of procedures. Post training, to facilitate knowledge transfer, Manyata's team conducted regular visits to the facility and assigned a mentor to handhold the staff. As a result nurses were able to develop both their competence as well as confidence to deliver accurate pre and post-natal care efficiently.

To fulfil Manyata's certification protocol, the facility inculcated better sanitation and hygiene practices. For instance, colour coded bin bags were installed for disposal of biomedical wastes to

Prior to the commencement of Manyata programme in 2014, all the doctors in the department varied in their treatment approach. Absence of standard pre and post-natal care procedures posed various implementation challenges for nurses.

ensure segregation. Bleaches were procured and bought in use for sterilization of used instruments and similarly all the processes became oriented and were aligned with the defined protocols.

6.2. St. Barnabas Hospital

The multi-speciality hospital was set up in 1885 and has over 50 beds. The hospital was non-functional for approximately seven years. It recommenced its operations from 2011.The hospital felt that as per industry norms it needed to cope up with the technological and procedural advancements along with infrastructural revamps.

Prior to Manyata's intervention, the hospital lacked full-proof patient history maintenance systems which lead to errors during patient interaction and treatment. Due to lack of standardized inventory management system, the nurses often used to miss out on steps or items to be checked in the inventory.

Manyata's intervention led to a couple of key changes in the hospital. For instance, the nurses began updating key sheets regularly. Consequentially, the facility has been able to update the patient history and performance. The standard procedures set have eliminated the errors in data management. With the help of trainings and the standardized manuals offered by Manyata, nurses are equipped to address minor cases independently.

6.3. Aastha Nursing Home

Incepted in 2009, Aastha Nursing Home specializes in Gynaecology, Obstetrics and Paediatrics. Owing to its small capacity, it had not applied for NABH certification. At the nursing home, though the medical services were in place, the nursing services were substandard as it received less attention by the doctors and the management. Hence, with Manyata's intervention the focus was laid on developing capacities of nurses to deliver better pre and post-delivery nursing services.

The association with Manyata programme worked as an external catalyst to motivate the facility for bringing in and adopting more structured and standardized processes. Interactions held during

Due to lack of standardized inventory management system, the nurses often used to miss out on steps or items to be checked in the inventory. The association with Manyata programme worked as an external catalyst to motivate the facility for bringing in and adopting more structured and standardized processes.

the meetings and knowledge gained during the sessions helped the staff to experience hands on training and gain exposure in effective pre and post-natal care.

6.4. Summer Hospital

The multi-speciality hospital having over 40 beds was established in 2010. Since the hospital had planned to undergo NABH certification, the management decided to implement Manyata programme. They believed that the association with Jhpiego would facilitate the NABH certification process.

Prior to the intervention of Manyata, the hospital lacked appropriate record maintenance and labour-patient charting system i.e Partograph[2]. The nurses lacked procedural know-how about the latest tools and techniques and needed to revamp their knowledge and skills.

With the intervention of Manyata, the record maintenance was altered to accommodate the Manyata protocol. The labour-patient charting was delivered hands-on with the help of Manyata's team and adopted as a practice at Summer Hospital. During the training sessions, the procedural know-hows which mostly rested with the doctors reached to the staff through knowledge transfer. The hospital was able to achieve Level I certification under NABH. The hospital is now working towards achieving the next levels through the adoption of Manyata's standards and protocols.

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We Care Interns with Jhpiego Team

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[2] Partograph: – a composite graphical record of key data such as cervical dilatation, foetal heart rate, duration of labour & vital signs during labour entered against time on a single sheet of paper.

7. Financial Viability of Manyata

It emerged from the discussions that the Manyata programme was perceived as adding value to all the facilities. Post implementation of QI programme, the facilities perceived it as bringing in positive changes by making them robust and competitive.

Despite receiving total sponsorship from Jhpiego for implementing the Manyata programme, each healthcare facility invested on an average INR 10000/- towards documentation i.e. procurement of manuals, record keeping, printing and so on. As per the staffing pattern laid out by Manyata's protocol, St. Barbanas Hospital and Summer Hospital were falling short of the required number of staff. Hence, they had to recruit additional staff leading to further financial burden on the facilities.

In order to sustain the improvements in future, it was necessary to understand the perspective of the facility management towards bearing expenses for services offered by Manyata's team. The management anticipated that in future, an average cost of INR 4000/- per visit is likely to be incurred towards payment of professional fees to Jhpiego. However, the willingness and extent towards bearing cost in future for the services being offered was different for each facility. For instance, Summer Hospital was willing to spend approximately INR 20,000/- per month to continue receiving services from Jhpiego. They expected frequent training sessions and assessments that could facilitate the retention of good practices, standards and enable them to achieve NABH certification. They strongly believed that the process should be continuous and not sporadic to keep up with the necessary improvements. One of the respondents at Summer Hospital stated that, *"Earlier, many things such as childbirth checklist were understood only theoretically. At present, the childbirth checklist is being practically implemented. It has become a practice post association with the QI programme".* The facility was willing to pay monthly fees for the continuous support even after achieving the entry level NABH Certification.

St. Barbanas Hospital and Aastha Nursing Home did not opt to pay monthly fees for Manyata's team. As St. Barbanas Hospital had in-house training institute for nurses, they preferred having periodic external workshops and visits as it would help them to remain updated with the changing trends and techniques in the industry. Further, owing to its small capacity and low profitability, Aastha Nursing Home was not able to afford monthly services. Perceiving documentation and record keeping as a tedious and redundant process, they were not interested in applying for NABH certification. Despite scoring well (above 85 per cent) on the internal assessments, they felt that frequent visits by Manyata's team were not required. Both Aastha Nursing Home and St. Barbanas Hospital were willing to pay nominal fees of Rs. 4000/- to 5000/- per visit to Jhpiego as they believed that quarterly training sessions and visits by

Manyata's team would suffice to retain the new learnings.

Nath Nursing Home chose to opt out of payment of monthly fees to Manyata's team. They were of the opinion that, there was already an opportunity cost of loss of man-hours while nurses attended the training sessions and sunk cost for the unused medicines and facilities as per protocol implementation. Consequentially, they decided to leverage upon the skills of existing nurses and implement internal trainings in the form of training of trainers and undertake cross functional trainings.

8. Implementing Challenges

Though Manyata's intervention was substantially beneficial, the facilities faced various implementation challenges.

The challenges aroused from stringency of operational procedures and financial implications of executing them. For instance, Manyata protocols required the facility to be proactive with the cases of pre-eclampsia[3], eclampsia[4] and other infrequent problems occurring during pregnancy. As the medicines had limited shelf life and the demand was unpredictable, the hospital faced a dilemma of storing these medicines. Also stored medicines, if not used, resulted in wastage of financial resources.

Aastha Nursing Home being a small set up, found intensive record keeping and documentation as a major challenge. In their opinion it will lead to redundancy of the existing system in which the hospital had made substantial investment.

Similarly, attitudinal issues too posed challenges while translating the new knowledge into action. For instance, at St. Barbanas Hospital, due to their past experiences and long term association with the facility; the nurses were resistant to the changes in

Manyata protocols required the facility to be proactive with the cases of pre-eclampsia[3], eclampsia[4] and other infrequent problems occurring during pregnancy.

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[3] Pre-eclampsia: A condition in pregnancy characterized by high blood pressure, sometimes with fluid retention and proteinuria.
[4] Eclampsia: A condition in which one or more convulsions occur in a pregnant woman suffering from high blood pressure, often followed by coma and posing a threat to the health of mother and baby.

procedures. Introduction of new protocols posed a threat to knowledge management. Young nurses with less experience in the field found it difficult to adapt new practices in limited number of training sessions. This led to anxiety about absorbing the new knowledge and posed a hindrance to the 'Quality Improvement' (QI) programme.

Trust and accountability issues were observed among hospital management and doctors regarding deputing nurses to other hospitals for training. There was a fear of attrition of nurses as they had better chances of getting alternative employment opportunities. It was also observed that in case of mishap the individual nurse was blamed who underwent training at an external healthcare facility.

9. Discussion

Reduction of MMR and IMR needs support from private players, NGOs and government and hence public private partnerships should be encouraged to reach to the last mile. As per WHO, the MMR in India has reduced by 77 per cent as of 2016. However, it is still 130 per 100000 live births which is better than few countries like Pakistan (178), Bangladesh (176), Nepal (258) but it is worse than Sri Lanka (30). Of the global maternal deaths, India accounts for 17 per cent of the burden. Hence, there needs to be actions on the causes of maternal deaths (Yadavar, 2018).

India ranks 52 among 228 countries in the world on Infant Mortality Rate (IMR) (Geoba.se, 2018). In 2017 it accounted for 32 infant deaths per 1000 live births whereas the neo-natal mortality rate was 24 per 1000 live births. The data indicates continuous risk of high mortality in the first year of life for Indian children (Sanghera, 2018). Hence it is vital that organizations such as Jhpiego come up with innovative interventions to work towards reducing the gap of IMR and MMR as compared to the global average. Joint efforts by all the stakeholders need to be weaved together to achieve the aim of nullifying all deaths caused due to treatable diseases. Equal and easy access to healthcare and sanitation is required for the same.

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In the case of the Manyata programme promoted by Jhpiego, the management of all four hospitals were of the view that Manyata has helped them in improving and standardising maternal and child health care by following standard protocols and procedures. This will further make their facilities better equipped to obtain NABH accreditation. The financial implications were not a major issue for bigger hospitals but smaller ones required some cost cutting measures. In this context Manyata's team may consider providing indepth training and handholding to facilitate internal capacity building. Through this activity master trainers and mentors can be developed. This staff can subsequently undertake orientation/refresher trainings and be responsible for the quality control measures.

The FOGSI can also play an important role in facilitating trainings. Hospitals under Manyata programme may act as role models and motivate other hospitals especially smaller ones in small towns to achieve the same.

It is observed that doctors seldom share the complexities and issues faced while treating patients with their peers. This hinders the process of sharing best practices. The Jhpiego platform can be utilized to facilitate communication amongst the health professionals. This effort will culminate in strengthening maternal and child healthcare in larger society. Additionally, inclusion of already specified 16 standards under the Clinical Establishment Act, 2010 for the private facilities providing maternal and neonatal care would ensure further quality control. This needs to be integrated with National Health Mission (NHM) for ensuring quality mother and child healthcare.

As consumers are not aware about the standards and certifications to be followed by the hospitals, they end up choosing a healthcare provider based on referrals and affordability. It is the responsibility of FOGSI and organizations like Jhpiego to create awareness about the importance of the certifications and standards to be followed by hospitals among general public. Consumer awareness shall further push the hospitals to maintain their quality standards.

The Jhpiego platform can be utilized to facilitate communication amongst the health professionals. This effort will culminate in strengthening maternal and child healthcare in larger society.

10. Conclusion

To sum up, Manyata is indeed an instrumental program towards the maternal and child healthcare. It is growing in its reach and has successfully made a difference to the existing healthcare systems and facilities in private hospitals, both in terms of infrastructure as well as manpower capabilities. The first step towards making this program sustainable and viable as a business will be to reinforce the present benefits so that the hospitals are willing to pay for the visits and trainings provided by Manyata professionals. This would not only help standardization in the procedures for hospitals and finally lead them to NABH certifications, but can also make it a viable business model.

11. Recommendations

As a part of the study, recommendations were sought from the doctors of the Manyata affiliated hospitals. Couple of recommendations with regards to training, knowledge management, awareness generation and providing package of services to make Manayata a financially viable model are advocated as follows:

Training: St. Barbanas Hospital's team felt that as it has its own 'Graduate Nursing Programme', it would be beneficial to incorporate the concept of Manyata programme in their training curriculum. Being highly motivated with the association with Manyata's team, Summer Hospital's team recommended increased number of visits for providing continuous support to sustain quality improvement. It was also suggested that along with the post-natal care, training on anti-natal care and C-section should also be incorporated in the curriculum.

Knowledge Management: To ensure long term effectiveness of the Manyata programme, the hospital teams recommended that Manyata team should continuously monitor and evaluate the knowledge transfer for ensuring retention of learning and quality improvement.

Awareness Generation: Due to the high maternal mortality rate in the country, the respondents of the study recommended that mass awareness should be generated about projects like Manyata across the country. FOGSI members should help such projects reach the last mile where healthcare is highly compromised both by the families as well as the healthcare facilities.

Holistic services: Manyata can offer holistic services by incorporating a) Techniques to include updated gadgets, adequate space and so on, b) Team coordination and collaboration and c) Timely response to a complication or issue.

To provide collaborative services, an app connecting the certified facilities can help the doctors communicate in case of exigency, unavailability or need for expertise. Positioning an 'SOS' button in the app can alert the connected hospitals to handle the situation in a timely manner with the best possible resources.

A newsletter should be published regularly highlighting the progress and achievements of the facilities in all the states implementing the Manyata programme. 'FOGSI Champions' should ensure dialogue among members about the progress and achievements to attain the benchmarks set by others. Consequentially, a culture of collaborative working by breaking the silos will evolve.

There can be a section in the newsletter to publish the best practices/procedures followed to handle a case which would have led to some exemplary outcomes. The same shall be updated in the 'Special Articles' section of the app to be leveraged upon by others. This would help in information sharing and building a repository of the same.

Package of services: To develop a financially viable business model, Jhpiego should offer a customized package with costing for the facilities which sign up, as per their needs. Requirements for upgrading should be laid down clearly before mandating the adherence to protocol. FOGSI can take care of all such needs, requirements and their installations at the cost calculated for the package. This would especially be beneficial for the facilities that are generally reluctant to such upgrades because of patients' traffic and time constraints.

Additionally, the subscription to app and newsletter can be made mandatory for all the FOGSI members for the purpose explained above. The facilities subscribing for a fixed number of visits eg. one per month can avail the same at a discounted rate as compared to cost per visit multiplied by number of visits. They may also be given an extended certification for one year leading to an extra year of subscription before going for renewal.

Application of these recommendations by having a robust team in place shall lead to the growth of the organization both in terms of revenue and social impact.

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Reaching the Last Mile: Case Study of PRASAR

Abstract: In recent years while India has achieved rapid economic progress and is currently the fastest growing major economy in the world its social indicators continue to drag. According to United Nations Development Programme [UNDP (2018)], India ranks a low 130 out of 189 countries in the Human Development Index. This is mainly due to the poor health outcomes such as low progress on Maternal and Child health which has been a matter of concern. Uttar Pradesh is the worst performer amongst Indian States having a very high maternal and infant mortality. Low public expenditure on health has led to a shortage of health infrastructure including human resource. Lack of public health care has resulted in higher dependence on the private sector where the cost is high and quality is a concern especially with the presence of quacks in rural areas. Non-governmental organizations are trying to fill this void.

PRASAR-NGO based in Lucknow through its 'Women and Adolescent Health Care' programme since 2011 is providing mobile health care to women and adolescent girls in the remote areas of the state. This paper looks into the outcomes of the initiatives by PRASAR and highlights the multiple challenges such as support from local institutions, social stigma attached with maternal and adolescent healthcare, hindrances in communication and logistical issues faced by NGOs working in remote locations. The paper authored by Dr. Satish Kajjer's work based on Mr. Aishvarya Agarval's 'We Care: Civic Engagement' internship with PRASAR in February, 2018.

1. Introduction

Globally, maternal health is a matter of serious concern. Every day, approximately 800 women mostly from developing countries (99 per cent) die from preventable causes related to pregnancy and childbirth (WHO, 2018). Adolescent girls face a higher risk of complications and death as a result of pregnancy (WHO, 2018). Almost all of these deaths occur in low-resource settings and most of it can be prevented (Alkema et.al, 2016). The conditions of women living in rural areas and poor communities is dismal with increased number of cases of unintended pregnancies, maternal death and disability, sexually transmitted infections including HIV and gender based violence.

The Sustainable Development Goal (SDG) 3- *Good Health and Well-being* aims to improve maternal & child health and eradicate life threatening diseases. Maternal health is of priority and SDG 3 aims to reduce the global maternal mortality rate (MMR)[5] to less than 70 per 100,000 live births by 2030 by focusing on ensuring universal access to reproductive health-

care services, information and education on family planning. The United Nations Entity for Gender Equality and the Empowerment of Women (UN Women) acts to advance women's well-being and health by working with governments to improve health services for women and girls, including survivors of violence, and backing non-governmental partners in filling gaps (UN Women, n.d.).

1.1. Healthcare Scenario-India:

According to a World Bank report (2018), by 2020 India is expected to emerge as the fifth largest economy as well as fastest growing economy in the world (Financial Express, 2018). Economically while India has achieved rapid progress, poor performance on social indicators especially health conditions continue to hinder the growth. On key health indicators, according to United Nations Children's Fund (UNICEF), "India ranks 12th among 52 low-middle income countries having highest infant mortality rates (IMR)[6] with over six lakh children dying within the first month of their birth in 2016" (PTI, 2018). The neo-natal mortality rate of the country was 25.4 deaths per 1,000 live births in 2016, placing India below Sri Lanka, Bangladesh, Nepal and Bhutan (PTI, 2018). The biggest achievement in the health sector is being certified 'Polio Free' by World Health Organization (WHO) in 2014. Communicable and infectious disease burden continues to be another emerging area of concern (Basu & Ghosh, 2014).

Researchers have identified that the main reason for poor health outcomes is the low public spending on health in India. The health expenditure stands at about four per cent of GDP with public expenditure on health at one per cent of GDP (Basu & Ghosh 2014). States with poor health indicators continue to have low public expenditure on health (Srinath et.al, 2018). Public expenditure seems to be more input-oriented with limited focus on outcomes (Basu & Ghosh 2014). Low public expenditure over the years has led to shortage of health infrastructure; sub-centre, primary health centre, community health centre and facilities

"India ranks 12th among 52 low-middle income countries having highest infant mortality rates (IMR)[6] with over six lakh children dying within the first month of their birth in 2016"

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[5] Maternal Mortality Rate (MMR) is defined as the proportion of maternal deaths per 100,000 live births

within health centres in rural areas. In addition to infrastructure there is a shortage of human resources mainly doctors. This has led to a higher dependence of patients on the private sector where the cost is high and quality is not ensured-especially the presence of quacks in rural areas. The last mile quality health service delivery is a challenge. Also, the high out-of-pocket expenditure leads to impoverishment of the population especially the lower income groups seeking treatment are forced to sell of their assets and incur debts. A large number of poor do not seek medical treatment risking their lives. Basu & Ghosh (2014) in their paper indicate that rural inhabitants impoverished due to spending on medicines increased from 21 million in 2004-05 to 29 million in 2011-12.

1.3 Maternal and Adolescent Healthcare-India:

A critical area of concern in India is the poor maternal and adolescent healthcare along with high child mortality. Maternal Mortality Rate (MMR) in India has seen an improvement from 254 in 2004-06 to 130 in 2014-16 (Niti Aayog, 2018). While states like Kerala, Tamil Nadu and Maharashtra have double digit MMRs, states such as Assam, Uttar Pradesh, Bihar, Odisha, Jharkhand, Madhya Pradesh has MMR figures higher than 200. Maternal deaths can be prevented by institutional deliveries and assisted childbirths and through proper antenatal check-ups and timely identification of high risk pregnancies.

About 20.9 per cent of population of India according to Census 2011 are adolescents of which 48 per cent are women. The World Health Organization defines adolescent as an individual between 10-19 years. Sexual health issues and teenage pregnancy; problems related to menstruation and menstrual hygiene; obesity, overweight, eating problems, nutrition and anaemia; behavioural problems, depression; oral health; tobacco and alcohol use are the challenges faced by adolescents in India (Bej, 2015). For many years since independence adolescent women healthcare was seen as part of the maternal health services. It was in 1997 under the Reproductive and Sexual Health Program adolescent health care received special attention. In this program reducing adolescent fertility was a priority area (Satia 2018). The

While states like Kerala, Tamil Nadu and Maharashtra have double digit MMRs, states such as Assam, Uttar Pradesh, Bihar, Odisha, Jharkhand, Madhya Pradesh has MMR figures higher than 200. Maternal deaths can be prevented by institutional deliveries and assisted childbirths and through proper antenatal check-ups and timely identification of high risk pregnancies.

Rashtriya Kishor Swasthya Karyakram (RKSK) launched in 2014 deals with adolescent healthcare issues covering nutrition, reproductive health and substance abuse. Under RKSK the strategy of service delivery moves beyond curative care to education awareness and behavioural change.

1.4 Scenario in Uttar Pradesh:

Maternal and adolescent health is a matter of concern in large populous state of Uttar Pradesh. When literacy among women is a low 44.9 per cent and fertility rate being a high 3.8, the challenges towards maternal and adolescent care is immense. Uttar Pradesh has a high maternal mortality rate of 300 and infant mortality rate of 73 per 1000 live births (NFHS-4, GoI, 2017). Only 20.6 per cent of women had institutional child births with low antenatal and post-natal care. About 49.7 per cent women are anaemic (NFHS-4, GoI 2017).

The National Health Mission (NHM) of Government of India (GoI) has special emphasis on Uttar Pradesh. Also, as part of NHM, GoI in 2008 launched the Aarogyam, a technology based health care initiative in Uttar Pradesh. Aarogyam ensures active participation of all key stakeholders such as, local administration, doctors, frontline health workers like Accredited Social Health Activists (ASHA), village heads and beneficiaries. Through joint participation it ensures pregnant women are provided with ante-natal care, post-natal care and children are immunised.

Though Government of India and Government of Uttar Pradesh have been taking several efforts to improve women's health status, given their limited reach providing a quality universal health care to the last mile has been a challenge. This is accentuated by poverty, gender discrimination and illiteracy in the population. These create problems in implementing government health interventions at the grassroot level. In this context, non-governmental organizations (NGOs) which work at the grass-roots by adopting villages with poor health metrics pertaining to adolescent girls and women and providing quality free health care services become a very important component in the last mile health care service delivery. Through various health

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programmes they gradually upgrade the health status of the village and move on to adopt newer ones.

PRASAR is one of the NGOs based in Lucknow which provides mobile health care services to the women and adolescent girls in remote areas through its 'Women & Adolescent Health Care' programme since 2011 in 167 villages of Banki and Masauli Blocks of district Barabanki (UP).

2. About PRASAR

PRASAR is a Lucknow based NGO registered in 2003. It works in the areas of health, nutrition, early childhood care and development, education and livelihood. PRASAR believes in inclusive development and mobilization of women, girls, scheduled castes and other marginalized communities. To attain the objectives of the organization, multiple projects in different districts of Uttar Pradesh are executed with funding support from The Hans Foundation (THF), Mylan Foundation, SBI Life Insurance and Programme for Accessible Health Communication and Education (PACE) (refer Table 1).

Table 1
PRASAR-Projects

S.N.	Project	Operational Area	Supporting organisation
1	Maternal and Adolescent Health Care programme	167 villages of Banki, Deva and Masauli Blocks of Barabanki District, Uttar Pradesh	The Hans Foundation -New Delhi
2	Hepatitis C Awareness & Early Diagnosis	Banki, Masauli, Deva, Harakh, Nindura, Fatehpur, Bani Kodar, Sidhuar, Trivediganj Blocks of Barabanki District, Uttar Pradesh	Mylan Foundation
3	Safe drinking water and safe sanitary disposal	Banki and Masauli Blocks of Barabanki District, Uttar Pradesh	SBI, Life Insurance-Lucknow, Uttar Pradesh
4	Livelihood opportunities for socially excluded communities (Women, Muslims and Scheduled Castes)	100 villages of Rampur, Sangramgarh in Pratapgarh District, Uttar Pradesh	PACE - Lucknow, Uttar Pradesh

2.1 Maternal and Adolescent Health Care programme:

In 2011 PRASAR initiated the Maternal and Adolescent Health Care programme with the funding support of THF. The programme ensures maternal and adolescent health care through awareness and education followed by a strong service delivery system. The objective of the programme is to substantially reduce the IMR and MMR in 167 villages of Banki, Deva and Masauli Blocks of Barabanki district, Uttar Pradesh.

2.2 Execution of Health Services:

Prior to setting up initiatives PRASAR conducts base line survey in new villages to assess the health status of women, children and adolescent girls. Through focus group discussions and community survey, an understanding about their knowledge, attitude and behaviour is developed. For instance, in a base line survey conducted for a new village the We Care Intern found that reproductive health problems were faced by a little over half of the population of women/adolescent girls (55 per cent). A majority of them (63 per cent) blame it on poverty i.e. lack of funds to avail health services and most of the surveyed women (67 per cent) resign it to their fate and see it as a part of women's life.

To provide health services at the door step of the community mobile health clinics (ambulances) are deployed. These clinics provide free consultation, medicines, diagnostic tests especially for pregnant, lactating mothers, adolescent girls and children. The ambulance visits the village on a pre-scheduled date generally twice in a month and the clinic is set up in the school premises. At the village level Swasth Sakhis are engaged to keep a track of the health of the pregnant women and her estimated date of delivery (EDD). Swasth Sakhis are educated village women volunteers to help PRASAR. They are the connect between PRASAR and the village community. To track the performance and address the field challenges faced by the Swasth Sakhis PRASAR conducts meetings at regular intervals. To enhance capacities of Swasth Sakhis and keep them updated refresher trainings too are conducted at periodic intervals (see images below).

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Health Screening by Doctor

Capacity building of Swasth Sakhis

PRASAR supports the Village Health and Nutrition Day (VHND) activities organized under the National Health Mission. On this day pregnant women in the village are registered, provided anti-natal checkup, danger signs during pregnancy identified, children are vaccinated and better nutrition and hygiene issues are discussed.

At the end of 2017 the 'Maternal and Adolescent Health Care programme covered 167 villages in the Banki, Deva and Masauli block of Uttar Pradesh. Once the village attains satisfactory health outcomes in comparison to the baseline PRASAR discontinues its initiatives in the village and moves on to adopt new villages with poor health outcomes.

3. Project Focus

The organization maintained a track of the 'Maternal and Adolescent Health Care Programme's' progress through monthly and annual reviews. As there was a need for conducting a comprehensive impact assessment of the programme, the We Care students were assigned to take up the   impact assessment study. The objectives of the study were:

- To examine the progress in improving institutional deliveries and reduction in high risk pregnancy.
- To examine the improvements in awareness levels on critical issues of maternal and adolescent health.
- To examine the limitations and challenges in programme implementation.

4. Methodology

To attain the research objectives a micro-exploratory study was designed. Initially secondary research was carried out to gather data pertaining to issues prevalent in the society with regards to maternal health, adolescent hygiene, existing government initiatives and its reach. Reports and articles published by PRASAR were used to gather data pertaining to: a) number of beneficiaries, b) health camps, c) diagnostic tests, d) referral cases, e) institutional deliveries, f) high risk pregnancy cases and g) VHND participation.

Primary research was conducted using a semi-structured questionnaire with the project beneficiaries to assess the impact of PRASAR activities. The primary study was conducted in five villages of Barabanki district (Chacherua, Gurela and Gadaipur village in Masauli block) and two villages of Banki block (Godaha and Khijirpur). Focus group discussions were conducted with key stakeholders like adolescent girls, women (both anti-natal and post-natal care), pathologists, doctors and project staff. Face to face personal interviews were conducted with the NGO staff and programme secretary Mr. Shishupal Yadav using an interview guide to gather data pertaining to operations, progress, challenges and criticalities in the project implementation.

5. Findings

5.1 Project Progress based on Key Health Indicators:

Based on the secondary data it was observed that the health programme covered all the 167 villages. The table below presents the progress of various activities over a period of six years i.e. 2011 to 2017.

Table 2
Activity wise Project Progress

Activities	Baseline Data (2011-12)	Latest Data (2016-17)	Progress made (in Percentage)	Percentage increase ↑ / decrease ↓
New registrations	2409	5636	133.96%	↑
Beneficiaries	4462	10828*	142.67%	↑
Referral cases	273	187	-31.50%	↓
High Risk Pregnancy Cases	99	32	-67.68%	↓
Institutional Deliveries	75%	99%	32.00%	↑
Health Camps	115	785	582.61%	↑
Diagnostic Tests	915	1210	32.24%	↑
Adolescent Girl Awareness	990	7963	704.34%	↑
VHND Participation	1047	6982	566.86%	↑

*Data as on 2014-15
Source: Based on reports by PRASAR

It can be inferred from Table 2 that owing to the increase in the number of health camps and awareness sessions conducted in the community, there was a significant increase in the beneficiaries and new registrations with PRASAR. Due to better awareness about health, increased number of beneficiaries participated in the VHND and opted for diagnostic tests. The reduction in referral cases could be attributed to opening up of new health clinics by government or other NGOs in the vicinity owing to mindfulness of the villagers about their health. The decrease in high risk pregnancies and increase in institutional deliveries could be due to the availability of Swasth Sakhis and trained health professionals to discuss queries regarding the same. It can thus be analysed that the villagers were moving towards preventive care.

5.2 Institutional Delivery and Reduction in High Risk Pregnancies:

As seen in Table 2 considerable progress has been made over the five-year period in maternal

health outcomes and adolescent health awareness. While there is no data on maternal mortality, infant and child mortality for the project area; associated data on high risk pregnancy, institutional deliveries, ante and post-natal checkups through health camps indicate the progress.

Due to outreach the awareness among the community increased the number of beneficiaries have increased by 143 per cent. Maternal health can be improved by institutional delivery and early detection of problems in pregnancy through regular antenatal checkups. As seen in Table2 the program has achieved 99 per cent institutional delivery. Pregnant women are linked to the Janani Suraksha Yojana (JSY) under the NHM. JSY provides free institutional delivery for all pregnant women and they are also incentivized through cash assistance. Regular ante natal checkups and preventive measures have brought a reduction in high risk pregnancy cases by 68 per cent and also a reduction in referral cases by 31 per cent. A referral in obstetric care is a system where women with pregnancy complications are referred as high risk case to a tertiary hospital to be treated under specialists.

5.3 Participation in VHND:

Table 2 also shows an increase in participation of women in the monthly VHND by 567 per cent. PRASAR supports the VHND activities organized under the NHM. Swasth Sakhis from PRASAR take the lead to organize VHND activities. On this day pregnant women in the village are registered, provided antenatal checkup, danger signs during pregnancy identified, children are vaccinated and better nutrition and hygiene issues are discussed. The activity resulted in better awareness and reduction in high risk pregnancies. According to Mr. Shishupal Yadav, Program Secretary, PRASAR, the government programmes for women's health executed by engaging Accredited Social Health Activists (ASHAs) were not as successful as PRASAR interventions through its Swasth Sakhis.

5.4 Impact of Direct Interventions- Mobile Health Clinics:

According to the Program Secretary due to execution of initiatives like mobile health clinics which were equipped with medical equipment and medical professionals the project had shown positive progress. The medical staff had amiable nature and this assisted in building trust with the community. Women in the community highlighted that they saw PRASAR as a forum to discuss their problems related to reproductive and sexual health. Their spouses too respected Prasar's staff and were supportive of their intervention. As a result, the number of beneficiaries and new registrations had increased substantially during the years. The

discussions with the community revealed that women and adolescent girls availed free consultation and required medicines. They were satisfied with the services provided by PRASAR.

As compared to 2011 the health of antenatal care (ANC) and post-natal care (PNC) women had improved and a less cases of malnutrition were observed in infants acquiring healthier eating habits. Due to distribution of medicines such as iron folic acid (IFA) and calcium tablets, regular checkups and vaccination there was a reduction in high risk pregnancy cases.

Medical Camp at Village	Awareness meeting with beneficiaries

5.5 Community Training to Improve Awareness:

Discussion with Program Secretary PRASAR highlighted that regular health education with various target audiences facilitated mind-set change. For instance, health education with the ANC and PNC women ensured increased adaption of breast feeding in the adopted villages. As both men and women got an opportunity to discuss about sexual and reproductive health their perception about family planning, use of contraceptives and other aspects underwent a change. This has played a huge role in limiting the family size. Similarly training sessions for adolescent girls regarding puberty, maintaining personal hygiene, use and safe disposal of sanitary napkins has substantially decreased the cases of urinary tract infections.

According to the Program Secretary PRASAR, capacity building programme for Swasth Sakhis helped in raising the skill and confidence of the Swasth Sakhis. This assisted them in improving their communication skills with the community to enhance the acceptability and reach of   the programme. Swasth Sakhis acted as agents of change and were engaged with the community on a continuous basis. They visited homes to discuss health issues and provide reminders for medical check-ups. They updated communities about government schemes such as JSY and encouraged families to avail the scheme. Such continuous engagement has led to an increase in

the overall awareness of the community regarding maternal and adolescent health, PRASAR's activities and utilization of government schemes.

6. Challenges

Discussions with Mr. Shivpal Yadav, Program Secretary, revealed that PRASAR faces infrastructural challenges to conduct health camps. He reported that some government schools objected to set up health camps in the school premises and the school administration was indifferent to PRASARs initiatives. One of the Swasth Sakhis' reported that the school staff has become antagonistic as PRASAR's staff intervened while a school teacher was canning students. Since then the school stopped providing premises to the mobile clinic.

Villagers showed poor time discipline. They often reached late for the health camps. Free medicines which were distributed were at times not consumed by the beneficiary and this has led to wastage. According to the gynecologist, women patients display casual attitude towards their health. Villagers shared that there are delays and long waiting periods as doctors did not come on time to the camp contradicting the programme staff's claim of villagers being undisciplined.

According to Swasth Sakhis despite conducting community health sessions the male fraternity in the community still has a traditional mind-set. They still are not totally supportive of taking care of women's health. This acts as a major barrier in women accruing pre and post-natal care.

7. Conclusion

PRASAR fills the void in the last mile health delivery and has been able to improve the maternal and adolescent health outcomes. Almost the entire project coverage area has institutional deliveries and a marked reduction in high risk pregnancy cases. This has been aided by the increasing participation in the health camps, VHND and higher awareness regarding maternal and adolescent health. Swasth Sakhis act as foot soldiers who are continuously engaged with the communities, train them, create

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awareness and ensure that there are no slip backs in the health outcomes of their respective villages. This implies that PRASAR is a forum for women to discuss their health issues. Support from the male community is far from desired due to the traditional community culture.

Support from village institutions like schools appears to be an area of concern too. Hence, it can be concluded that while PRASAR has been able to reach out to the villages there is yet a lot to be accomplished in behavioral change of villagers.

8. Recommendations

Currently PRASAR provides the last-mile health delivery using mobile clinics. To bring down the costs and improve delivery in future, PRASAR should leverage technology such as tele-medicine, mobile phones for camp registration and health alerts. Tele-medicine can overcome the delay or absence of doctors. Given that people come late to the camps, advance phone alerts and check-up appointment timings can save time. Regular health and nutrition alerts can act as a reminder to women to follow a healthy schedule in pre and post pregnancy. Alerts also can be used for VHND activities. Given the wastage of medicines and nutrition supplements PRASAR should adopt a self-supporting model by charging nominal fees for certain services such as diagnostic tests, medicines and so on. This will develop a sense of responsibility among the community and reduce wastage.

While the state has failed to deliver on health outcomes, government institutions needs to be supportive of initiatives undertaken by NGOs. Village schools and panchayats should support initiatives of PRASAR. To gain confidence of the panchayat members PRASAR needs to develop rapport with them. Given that PRASAR has difficulties in using school premises for setting health camps it should approach education department for collaboration.

Given the wastage of medicines and nutrition supplements PRASAR should adopt a self-supporting model by charging nominal fees for certain services such as diagnostic tests, medicines and so on. This will develop a sense of responsibility among the community and reduce wastage.

From the programme sustainability perspective PRASAR needs to work with government agencies. Withdrawal from the programme might risk the changes of fall back in health outcomes achieved. Aligning the initiatives with NHM and capacity building of ASHA workers on similar lines of Swasth Sakhis is needed. Importantly communities need to be empowered to demand for health services from the State. Finally, PRASAR's initiatives require whole hearted support from communities, other NGOs and local government agencies to truly make this a public-private-people partnership and enhance health service delivery.

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Mission 5K: Case of Preventive Healthcare by Empowering Micro Entrepreneurs

Abstract: *In India, there is one government hospital bed for every 2,046 individuals, one government doctor for every 10,189 people, and one state-run hospital for every 90,343 citizens (Kashyap, 2017). Due to inadequate access to healthcare facilities and trained doctors, home remedies are often used as an effective mode of treatment in rural and semi-urban areas. As a result, there is a delay in diagnosis of illness and appropriate treatment. MAYA Health is a Bengaluru based organization that works in the area of preventive health and provides access to basic healthcare at the doorstep in rural and semi-urban areas. The organization accomplishes its objectives by training women as Health Navigators (HN) and empowering them to be financially independent.*

The current paper assesses the healthcare market requirements of Channapatna, Karnataka, the gaps in the current range of products offered by MAYA Health and the strengths and weaknesses of the HNs. The findings of the study indicate that the services offered by the HNs were highly appreciated by the beneficiaries as it gave them easy and trusted access to healthcare. The study highlights various healthcare products and services that can be offered by MAYA Health to the clientele. The paper offers a few recommendations to address the healthcare requirements of Channapatna. The paper is an outcome of Mr. Anubhav Das's and Ms. Sheena Jain's 'We Care: Civic Engagement' internship with MAYA Health in February, 2018.

1. Introduction

Lack of nutrition, contaminated drinking water, unhygienic and harmful environments that lead to high exposure to infectious agents, low levels of sanitation and lack of appropriate medical care are the key challenges to sustaining healthy population. According to WHO (2017), the major threats to global health in low income countries are diseases like malaria, cholera, diphtheria and meningitis which are all caused due to poor sanitation and hygiene. Food poisoning, malnutrition, pandemic influenza and conflicts with regards to healthcare facilities are among the other threats to global deaths as cited by WHO (2017).

The differentiator for access to healthcare is the social conditions of the community, leading to high burden of illness amongst socially disadvantaged populations. This implies that, the healthcare system requires to be responsive to the needs of the population to achieve the third Sustainable Development Goal (SDG) - 'Ensure healthy lives and promote wellbeing for all at all ages' by 2030.

1.1. Healthcare Scenario in India:

Every third Indian today travels 19 miles for basic healthcare and is often too late to solve a problem that was preventable (MAYA, 2017). The Indian healthcare system is severely plagued with a lot of challenges to meet its ever rising demand for health care. KPMG report as cited in IANS (2018) highlights that, although India meets the global average in the number of physicians, nearly 75 per cent of dispensaries, 60 per cent of hospitals and 80 per cent of doctors are in urban areas. 74 per cent of its doctors cater to a third of the urban population (IANS, 2018). According to the national average of 0.62:1000, India has less than one allopathic doctor per 1000 people which is much less than the World Health Organization recommended ratio of 1:1000 (PTI, 2017).

According to Health and Family Welfare Statistics, the country is 81 percent short of specialists at rural Community Health Centres (CHCs), and the private sector accounts for 63 per cent of hospital beds" (IANS, 2018). India's current last mile involves a volunteer base of 690,000 Accredited Social Health Activists (ASHA Workers). This volunteer base is neither well trained nor technologically enabled. In spite of this, most community-based programs in health are dependent on ASHA workers (MAYA, 2017). Further as per National Health Profile (2018), India has one government doctor for a population of more than 11,000. Consequentially, a huge gap of health care infrastructure needs to be filled (Financial Express, 2018).

In India, healthcare is primarily handled by state governments. Although the central government shares a significant part in establishing health care infrastructure, each of the Indian states dictates their priorities for healthcare financing and provides the necessary level of services to the population (Barik & Thorat, 2015). The national level programs are implemented by the Union Ministry of Health & Family Welfare, whereas the areas of public health, hospitals, sanitation and so on are under the purview of the state, making health a state subject (Chokshi, et. al., 2016).

Although India meets the global average in the number of physicians, nearly 75 per cent of dispensaries, 60 per cent of hospitals and 80 per cent of doctors are in urban areas.
As per National Health Profile (2018), India has one government doctor for a population of more than 11,000. Consequentially, a huge gap of health care infrastructure needs to be filled (Financial Express, 2018).

The fourth National Health and Family Survey (NHFS) indicates 56 per cent of urban India and 49 per cent of rural India chooses private healthcare over government healthcare. They do not use government facilities due to poor quality of care, lack of accessibility and long waiting time (Bhuyan, 2018). Private health care in India, is not only expensive but also suffers severely from lack of trained and skilled manpower. Hence, people living in the rural areas face the additional handicap of such a situation and they form a disproportionately larger share of the unhealthy population (Barik & Thorat, 2015).

India is experiencing severe obstacles in the last mile delivery of health services to economically and socially backward sections of the society. Infectious diseases, nutritional deficiencies and unsafe pregnancies, escalating epidemics of non-communicable diseases are becoming extremely prevalent and the major health concerns. Majority of diseases that cause deaths in rural India are preventable. They are caused due to the ingrained behavioural aspects such as lack of information, poor hygiene and sanitation practices apart from issues of accessibility and affordability of healthcare. Ill health is the root cause of most social problems. Loss of earning member due to ill health has a cascading impact on well-being, education, safety and further health issues among family members. Thus it is paramount to develop a sustainable model to inculcate the practise of preventive healthcare amongst the length and breadth of the country (Naikawadi, 2017).

1.2. Preventive Healthcare in India:

The healthcare industry certifies preventive healthcare as a strongest pillar towards a healthy society. Consequentially, in India, the preventive healthcare segment is one that has been picking up constant growth in the recent years. India's net preventive healthcare market now is estimated at over $800 million (Naikawadi, 2017). People's growing consciousness about their health and the rising disposable income levels has given a boost to preventive healthcare in the urban and semi urban regions. The ASSOCHAM paper (2018) on 'Preventive healthcare and its impact on corporate sector' states that "One rupee spent

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on prevention saves Rs. 133 as absenteeism costs and Rs. 6.62 as healthcare costs". Preventive healthcare and wellness programs can have drastic impact on employees' behaviour, improve their biometric risk profile and their overall work productivity. Initiatives like 'Health for All' and 'The National Health Assurance Mission' is a sheer reflection of the need to re-emphasize on improving preventive healthcare facilities in India (Naikawadi, 2017).

Early detection of diseases through prevention not only saves life but also protects the individual and his family from going through immense physical, emotional and financial distress. Many NGOs are now working in the area of preventive healthcare, one of which is MAYA Health, a Bengaluru based NGO that has developed initiatives in the constituency of Channapatna in Karnataka.

2. About MAYA Health

In 1991, MAYA was registered under the Karnataka Societies Registration Act of 1960. It has initiatives at pan India level in areas of livelihood, education, health and child rights. MAYA is an umbrella organization which covers four independent organizations, i.e. 'Prajayatna', focussing on the area of education and education reforms; 'LabourNet', having interventions in the areas of livelihood and skill development; 'MAYA Organic', supporting livelihoods for the traditional toy making artisan community in Channapatna and 'MAYA Health', to build a sustainable and quality health care system in the country targeting the Bottom of Pyramid (BoP) (MAYA, n.d.).

MAYA's health model intends to address a demand for quality primary health care in rural areas by creating a new channel of dedicated, trained and technology enabled healthcare micro-entrepreneurs called as 'Health Navigators (HN)'.

MAYA's health model intends to address a demand for quality primary health care in rural areas by creating a new channel of dedicated, trained and technology enabled healthcare micro-entrepreneurs called as 'Health Navigators (HN)'. The role of HNs is to act as the last mile connect between the healthcare eco-system and the citizens of rural India.

Through this model, MAYA Health aspires to provide preventive health care by addressing issues of lack of health awareness,

affordability and access to quality healthcare (MAYA, 2017).

2.1. Channapatna:

In 1991, MAYA Health decided to intervene in Channapatna, taluka of Ramanagara District in Karnataka because it found that there was a rampant prevalence of lifestyle diseases and community hygiene. There was lack of awareness and knowledge with respect to personal and community sanitation. To address these issues MAYA Health decided to introduce preventive healthcare initiatives by introducing health counselling and health maintenance. To facilitate behavioural change, it aspired to create a community culture which valued health and community hygiene. To translate its aspiration, Maya Health introduced the concept of 'Health Navigators' to promote general community wellbeing (MAYA, 2017).

Health Navigators Screening the Patients

3. Project Focus

Health Navigators (micro-entrepreneurs) serve as the last mile connect between the community as potential clients and the healthcare ecosystem and work to ensure a more proactive and efficient way of delivering health services and products. They are trained women who can detect malnutrition, diabetes, hypertension, non-communicable diseases, and provide lifestyle solutions to prevent these diseases. They earn their income from charging for consultation and other diagnostic services and supplement their income by sale of health products like sanitary napkins and nutritious food mix for women and children respectively. This served as a micro business for women and provided monthly income of about INR 2500/- on an average to each of the 45 HNs.

Maya Health looked at enhancing the earning opportunity of these HNs by increasing their monthly average income to INR 5000/- (i.e. Mission 5K). The We Care interns, being from a business and marketing background were given the responsibility to develop a plan for the same. This was to be done primarily by increasing the product portfolio and providing sales training for the new products which were meant to address the prevalent health issues in

Channapatna. The objectives of the assignment were:

· To conduct a gap assessment by identifying gaps in current and expected products and services in Channapatana

· To explore a set of new healthcare products and services that Maya Health can venture into based on the gap assessment

· To identify suitable vendors for procurement of the new products at competitive price

· To suggest a change in the current client servicing method for enhancing the income of HNs

· To conduct a sales training for high performing HNs

4. Methodology

To attain the above objectives secondary data was studied with the help of available literature at Maya Health. Historical sales data of HNs and product performance for the year 2017 was studied. To understand the current scenario pertaining to products and services offered by the HNs in Channapatna and the income generated through the micro business, it was proposed that a micro-exploratory study should be conducted.

The data points to be studied were: a) health issues of the community in Channapatna, b) profile of HNs, c) current products and services offered, d) expected range of products and services, e) current income earned by the HNs, f) challenges faced by HNs.

Unstructured interviews were conducted with three HNs, three beneficiaries and two team members of Maya Health using an interview guide designed with the support of Maya Health team. The data was analysed using content analysis technique based on which the database of potential products was developed, new vendors were identified and the sales training was designed.

5. Findings

To understand Channapatna as region for sustainable livelihood, interns held interactions with Maya Organic, a livelihood development initiative of Maya. The dynamics of playing the role of a Health Navigator (HN) and utilizing it as a source of livelihood were explored.

Segregated on the basis of geographical clusters, HNs were divided into three groups. The three groups were headed by mentors recruited by Maya Organic.

5.1. Distribution of Client Base:

The demographic distribution of the clients per HN is displayed in Figure 1.

Figure 1
Distribution of Client Base

Particulars	Total	Per HNs	%
Target Population	22335	2500	
Men and Women above 30 years	10094	1130	45%
Adolescent Girls	2147	240	10%
Women Aged (30-50 years)	7341	822	33%
Women Aged (19-30 years)	2281	255	10%
Children below 5 years	1627	182	7%
Men and Women above 60 years	2631	219	12%

Source: MAYA Annual Report, 2016
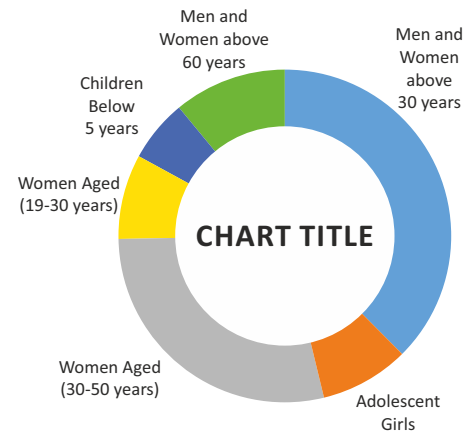
**Interaction with clients of Maya**

5.2. Client Expectations:

To identify gaps in services/products and map expectations of clients, discussions were held with HNs and clients. The discussions indicated that residents of Channapatna appreciated the service provided by the health navigators. The services helped them to save costs especially because doctors were expensive and were located at far-off distances. They shared that the HNs gave them the feeling of having a friend who can be trusted to share all their anxieties and receive authentic health advice. Initially product-wise trend analysis was conducted based on the available historical sales data (See Figure 2).

Residents of Channapatna appreciated the service provided by the health navigators. The services helped them to save costs especially because doctors were expensive and were located at far-off distances.

Figure 2
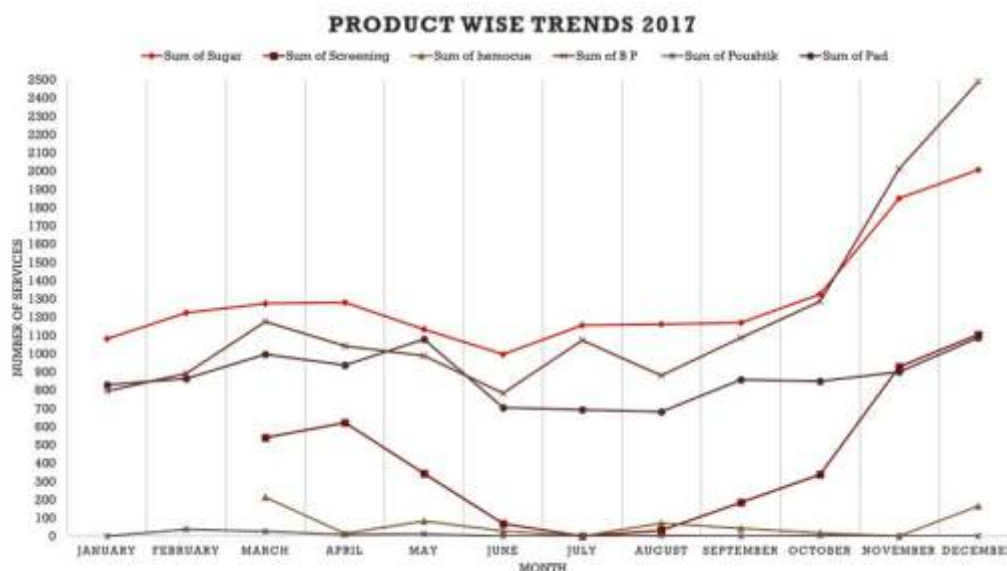
Source: 2016 Excel Data provided by MAYA

The results of the product wise trend as shown in Figure 2 emphasized that clients were sceptical about 'Poushtik Nutrition' food mainly because children did not like the taste. The demand for other products/services was average with the highest demand for testing blood pressure (BP) and sugar levels.

Based on the discussion of the prevalent health issues during client interviews, a list of products was recommended to be added to the current product portfolio consisting of only two products. The discussions with the clients indicated that the product portfolio should include products for preventing prevalent diseases like a) dengue and chikungunya, b) pain killers for joint and muscle pain, c) contraceptives, d) tasty nutritious food for lactating mothers, e) diapers for babies, f) personal care products for acne and oral healthcare, f) cholesterol and thyroid testing services and g) eye check-ups.

5.3. New Healthcare Products:

Understanding the market requirements resulted in adding the new products to the existing product portfolio. This required approaching effective vendors to provide the HNs with healthcare products at price points which will enable them to earn good profits. Consequentially, identification of vendors, negotiation and procurement of products was facilitated. Reputed companies like Dabur, Hamdard, HLL were contacted. Table 1 showcases the products for which quotations were received and agreements finalized.

Table 1
Products & Margins

S.N	Product	Quantity	MRP (INR)	Offer Price (INR)	Difference (INR)	Selling Price to End Customer (INR)	HN Margin (INR)	IO Margin (INR)	Discount (INR)
1	Herbal Mosquito Repellent Room Spray	30 ml	75	45	30	57	10	2	18
2	Ayzh Sanitary Pads (Comfort)	7 pads	50	28	22	40	10	2	10
3	Herbal Mosquito Repellent Agarbatti	40 sticks	65	39	26	55	11	5	10
4	Amrutanjan Joint Muscle Spray	1 piece	80	66.4	8.6	75	2.6	1	5
5	MOODS DOTTED STRAWBERRY 3's	3 pieces	24	20	4	23.2	2.4	0.8	0.8
6	MAKE SURE (PTC) 50's (TAX 5.5%)	1 packet	50	10.45	39.55	42	24	7.5	8.05
7	Herbal Mosquito Repellent Body Spray	30 ml	75	45	30	57	10	2	18

Source: Price of new products (Organized by Authors)

Package of Products

5.4. Enhancing Income of HNs:

The development in the product portfolio was also viewed as a tool to enhance the income of HNs from the current INR 2500/- per month to INR 5000/- per month and gradually achieve Mission 5K. It was presumed that the increase in income would encourage more women in the vicinity to work as a Health Navigators and become financially independent.

5.4.1. Group Wise Income Trend:

Secondary data was systematically studied to understand the market and the performance of HNs. The three groups of Health Navigators under the mentorship of Spoorthy, Roshni and Parivarthana were studied. Sales data was tracked to decode the group wise trend over a period of twelve months (See Figure 3).

Figure 3
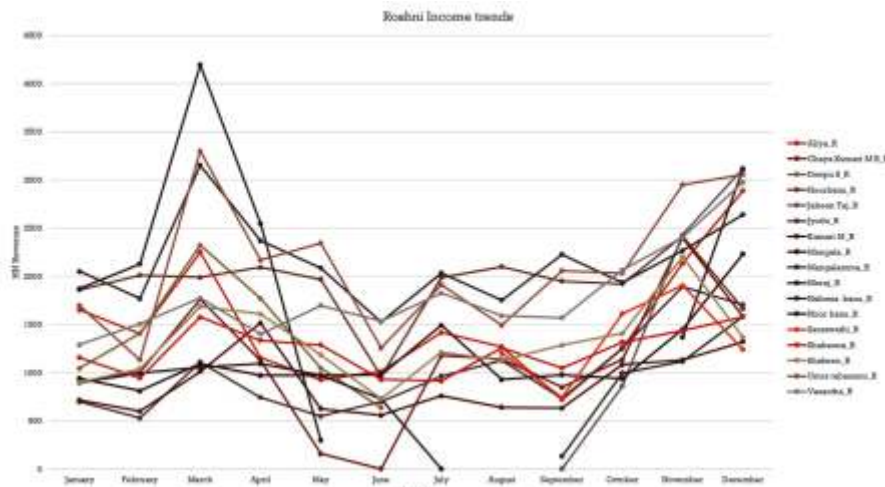

Source: MAYA 2017 Annual Report

The group wise trend as shown in the above figure highlights that HNs under Roshni performed fairly better than those under other mentors. The sales of all the three groups dropped during the period of May to September due to low acceptance of a key product. HNs under Roshni performed well in March and between October-December due to introduction of screening & haemoglobin testing services.

It can be inferred from the above figure that the revenue generated per group per month was between INR 2000/- to INR 32000/-. Challenges like low spending power of the clients, lack of awareness and apprehension about products and their benefits and most importantly lack of cooperation were faced on a daily basis by the HNs. Some of them had poor communication and marketing skills while some lacked basic business perspective.

5.4.2. Individual Income Trend:

Trend analysis of Roshni group's HNs was carried out as they were the best among the three groups. Current income of each the HNs and consistency of their performance over the selected period was analysed (refer Figure 4).

Figure 4
Income Trends of HNs under Roshni

Source: MAYA 2017 Annual Report

Individual performance of each HN aligned with the group's revenue trend is depicted in Figure 3. It can be inferred that the monthly income of the HNs ranged between INR 1000/- to INR 2500/-. Discussions with HNs also revealed that average monthly income of the HNs from small towns/urban areas was INR 2000-2500 per month and INR 1000-1500 per month in villages. It was identified that some top performers in sales were from the Roshni group. This can be attributed to the fact that Roshni, the group leader was the first one to be trained as a mentor under the Maya Health project. This group comprised of the most experienced HNs.

5.5. Selection of HNs for Pilot Training:

In order to equip the HNs with the necessary knowhow, it was planned to provide sales training to HNs for the new products. While developing the training contents the need for identifying best performers was felt. The income wise trend analysis of individual HNs was utilized to understand the factors affecting the performance of HNs. It was identified that both internal and external factors affected the performance.

External factors like availability of equipment in HN's toolkit, seasonal demands and mentors' guidance were found to be influencing factors in HNs performance. Internal factors like HN's

External factors like availability of equipment in HN's toolkit, seasonal demands and mentors' guidance were found to be influencing factors in HNs performance. Internal factors like HN's ability, confidence and experience also played an important role in influencing the performance levels.

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Based on the above selection criteria for HNs, their relative weightage was developed (Refer Figure 5). Thereafter, the selected HNs were sent for a pilot training.

Figure 5
Selection Criteria

Weightage
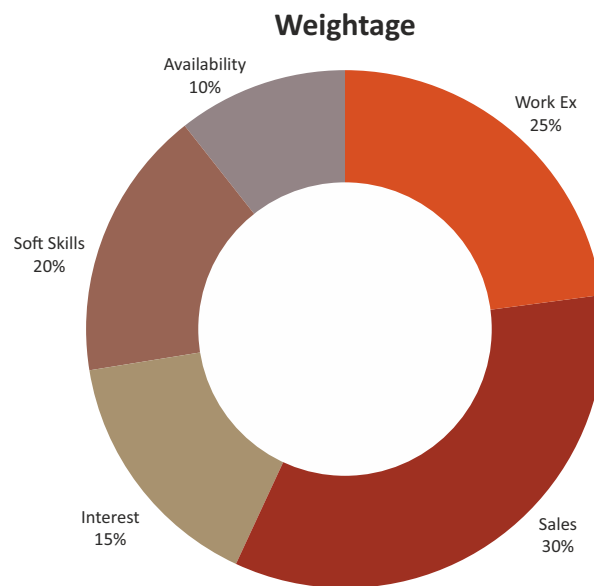
Source: Developed by Authors

5.6. Pilot Training Components

5.6.1. Market Segmentation:

Market segmentation is a process of dividing market of potential customers into groups based on characteristics. The segments are comprised of consumers who will respond to a similar manner to marketing strategies and who share similar traits. In the current project, market segmentation was applied to bifurcate the pool of clients in Channapatna based on their income pattern.

High-income families were identified on the basis of the following:
• Size and type of the house
• Number of healthcare products and services bought by the family from HNs
• Means of transport (Car/bike)
• Possession of white goods
• Availability of domestic help part or full time

Training of Health Navigators

5.6.2. Promotion:

To promote Maya Health's concept of healthcare at the doorstep with the facilities to avail services and medication at home, flyers were developed in the local language i.e. Kannada. They were distributed in the community and at important locations in the town.

5.6.3. Training:

The pilot training of HNs focussed on factors like product significance, benefits and price justification. Detailed orientation about the new products was given. Interns trained them on sales pitch and HNs were supported to develop customized cue cards as a ready reckoner to facilitate sales (See Figure 6).

Figure 6
Sample Cue Card

Herbal Strategi Room Spray 30 ML

MRP	Office Price	Difference	End Customer SP	HN Margin	I/O Margin	Discount	% Market
75	45	30	57	10	2	18	25%

Pitch (Talking Points):	How to Use it:
• Begin by asking clients if they are facing trouble with dealing with mosquitoes and which repellants they are currently using. Speak about the chemicals. • "Burning one mosquito coil in a closed room amounts to smiling 100 cigarettes." • Explain the benefits of this a product over other products (completely natural and doesn't contain any chemicals) • Tell them how they've themselves used this product and found it be extremely useful. • Do tell them all the usage instructions meticulously • If thye are unwilling to buy, tell them it's a small pack and hat they can revert back to their original products if they don't find it effective enough	• For the first 3 to 5 days' spray 10 shots in the air, crevices under and behind beds, cupboards and curtains. • Switch off the fan and keep windows and doors closed during and for 20 minutes after spraying • From day 4 onwards, spray 3 shots in the air and 1 to 2 shots under the bed every day. • Spray at all possible entry sources to get maximum efficiency • Do not spray on clothes, walls, body. Avoid direct contact with eyes, cuts, wounds. Store in a cool place

Contains: Lemongrass Oil, Neem Oil, Cedar Wood Oil and Citronella Oil
Lasts 150 sprays

Source: Designed by Authors

6. Discussion

In the scenario of growing market for home healthcare services in India, the concept of providing care at home by employing local women as Health Navigators is unique and promising. It ensures basic care at the time of need and acts positively both for the patients and the healthcare providers. In the case of Maya Health, the HNs are women residing in the community trained on providing preventive health education and services. The clients (i.e. patients) receive the services at affordable rates from trusted sources which are easily accessible as they reside in the community. They are also able to discuss their issues openly in the comfort of their homes.

Various established brands and start-ups are exploring the home healthcare industry as it offers immense opportunities. Hence, Maya Health also can expand its horizon gradually to become self-sustainable and provide better incomes to the HNs. With the growing visibility and demand of HNs, it is required that in-depth studies are conducted by engaging experts to realize the other health needs of the community. Based on the results it could systematically expand its product portfolio and range of trainings to be provided to HNs.

Working as HN facilitates financial freedom to women and gives them a social standing as 'Entrepreneur' in the community. However, so far they have been earning approximately INR 2500/- per month which is insufficient to meet their needs. This is a consequence of both internal and external limitations.

Not all the HNs are dynamic to deal with all the types of clients they encounter on a day to day basis. Language stands as the first barrier as they find it difficult to understand the training material and implement the takeaways on field as they were comfortable only in Kannada. Emerging from humble backgrounds and having limited exposure, HNs experienced fear of rejection while approaching clients in the community. Selling products like condoms and offering healthcare solutions to men were found to

The concept of providing care at home by employing local women as Health Navigators is unique and promising. It ensures basic care at the time of need and acts positively both for the patients and the healthcare providers. Working as HN facilitates financial freedom and gives them a social standing as 'Entrepreneur' in the community.

be challenging for the HNs.

Furthermore, while some HNs were proficient in client communication, most of them possessed average communication skills which would hamper their ability to maximize their sales potential. Understanding the job as sales professional rather than as a social worker is imperative for HNs. They evidently lacked the business approach while selling the products. They often provided the products/services free of cost or at lesser than actual cost if the customer displayed the inability to pay. Maya Health had not devised the feature of additional charges in specific situations such as offering services at odd hours during an emergency. While it strengthened their sociability in the community it also severely impacted the HNs net profits.

In the above context, low spending power of clients poses a major challenge as most of them belong to the economically weaker sections of the society and are incapable of buying good healthcare products that come at a slightly higher price. Their budget constraints make them extremely price sensitive resulting in rude behaviour with HNs when they offer more products. This also demoralizes the HNs affecting their further sales.

There is a need to employ marketing strategies around the marketing mix of product, price, promotion and place. Increase in product portfolio based on market assessment and past sales data, along with placing emphasis on products as per seasonal requirement should be incorporated. On the basis of market segmentation, the organization should also explore differential pricing model for value added services which are currently offered at no premium. Factors which make the products offered by Maya better than their counterparts available in the local market should be highlighted to the client base. To supplement the efforts of 'Health Navigators', mass awareness about the special features of product range under Maya Health should be created. Various platforms such as public gatherings, panchayat meetings, self-help group meetings and so on should be utilized.

Increase in product portfolio based on market assessment and past sales data, along with placing emphasis on products as per seasonal requirement should be incorporated. On the basis of market segmentation, the organization should also explore differential pricing model for value added services which are currently offered at no premium.

7. Conclusion & Recommendations

It can be concluded that the concept of Health Navigators was an effective method to reach the last mile but they faced limitations with regards to sales and profit maximization. Although the profile gave them a sense of identity; it did not support them much financially. Hence, alterations in client servicing methods coupled with regular trainings will only help in sales enhancement. Further, the addition in product portfolio coupled with product trainings shall boost their confidence as they would be able to cater to larger needs of the beneficiaries. The boost in confidence itself shall upgrade the position of HNs and the organization in the community. Additionally, there is a need to continuously monitor the Mission 5K in order to develop it into a long term self-sustaining model. Only then, MAYA Health will be able to move towards achieving the long term objective of building a replicable prototype to provide effective healthcare solutions across the length and breadth of the country. Further, there is a need to make alterations in client servicing methods. Few such methods are suggested to enhance the income of Health Navigators and achieve the Mission 5K.

i. Diversification in training: Based on further analysis of prevalent diseases, training for performing tests like thyroid, cholesterol and blood group identification were deemed necessary to be provided to HNs. They could also be trained in different areas like eye-care, oral-care, business and marketing skills. This will help each HN to adapt to the situation and utilize their experience and tactics. These tactics must be well communicated across the team to instil confidence and aid in expanding product/service portfolio. Brainstorming sessions are the perfect way to bring about these experiences (good or bad) so as to be converted into learnable tactics.

ii. Registration Model: MAYA has a scope of increasing its ancillary revenues by tweaking its registration model by charging the community a yearly renewal fee rather than a one-time registration fee. The annual registration fee could be INR 20/- which is lesser than their one-time enrolment fee. Thus adding up to the revenue of Maya Health.

iii. Differential Pricing: The HNs could adopt a differential pricing model for their value added services which are currently offered at no additional premium. For instance, additional charges can be levied on high-income clients or those who need services beyond normal working hours.

iv. Community Level Campaign: Promoting the concept at community level through self-help groups was critical for long term success of the efforts of the HNs. To ensure that the HN network gains exposure and visibility to entire community they should use measures such as; a)

health talks by HNs to increase awareness among community with respect to preventive healthcare, b) facilitate on-the-spot registration, c) provide tests at a minimal price, d) display of products at public gatherings and so on..

v. Recruitment Modification: There was an evident need for strategic recruitment as the HNs lacked business acumen. Emphasis should be laid on recruiting HNs who have the ability to strike a balance between gregariousness and a natural inclination towards being profitable. Since these HNs belong to the profession of sales, they should have empathy and the willingness to succeed. A right balance of these qualities ensures the best sales force.

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Section III

This section comprises of five articles in the area of preventive and promotive healthcare. First two articles discuss the strategies adopted by NGOs for arresting the spread of sexually transmitted diseases and substance abuse.

Discussion on interventions designed by NGOs to transform community sanitation through waste management and green audit is discussed by the third and the fourth article.

The fifth article discusses the issue of access to safe drinking water in rural India and the innovative business model designed by a social enterprise to resolve the issue.

Reintroducing branded condoms by Aastha Parivaar

Abstract: The HIV epidemic in India is driven by sexual transmission, which accounted for 86 per cent of new infections in 2017-2018 (NACO, 2018). In 2017, Maharashtra had approximately 7.4 per cent HIV affected female sex workers (FSW) and the prevalence at country level was 1.6 per cent affected FSWs (UNAIDS, 2018). Consequentially, the consistent use of condoms is the key to slowing the spread of HIV. Among the various organizations working for the cause of HIV/AIDS, Aastha Parivaar is an NGO, based in Maharashtra that works with FSW and High Risk Groups (HRG) to weaken the spread of HIV and eventually reverse the numbers of HIV infected persons. It promotes safe sex among sex workers, truck drivers, transgenders at brothels, highways and communities.

The current paper highlights a study conducted at selected sites in Mumbai to assess the demand and supply gap for condoms. The findings highlight that the free condoms supplied by the Ministry of Health & Family Welfare (MoHFW) were able to fulfil only 38 per cent (average) of the actual demand at each site. Furthermore, the study highlighted that more than 50 per cent of the times the clients did not purchase the condoms and hence it was left to the sex workers to purchase the same. The paper further describes the solution offered by Aastha Parivaar to have low cost subsidized 'Aastha Condoms'; hence encouraging the use of condoms and combating the spread of HIV. The prospects for large corporations and small NGOs to associate with each other and create a robust system for subsidized condom availability has been discussed. The paper is an outcome of Ms. Tanisha Parikh's and Mr. Varun Goradia's 'We Care: Civic Engagement' internship with Aastha Parivaar in February, 2018.

1. Introduction

In India, the healthcare sector has made huge strides in recent decades. Despite this progress, infectious diseases are expected to continue to be a serious public health problem in the coming decades; posing a threat to national and international health security. In addition to endemic diseases such as human immunodeficiency virus and acquired immunodeficiency syndrome (HIV/AIDS), tuberculosis (TB), malaria and neglected tropical diseases, outbreaks of communicable diseases will continue to pose a public health challenge, requiring a high level of preparedness in terms of early detection and rapid response (Narain, 2016).

According to WHO (2016), more than one million sexually transmitted infections (STIs) are acquired every day worldwide. STIs are spread predominantly by unprotected sexual contact with an infected partner and non-sexual means such as via blood or blood products. Sexually transmitted diseases (STD) are a public health problem not only because of their high incidence

worldwide, but also because of the possibility of causing serious and persistent complications in infected people who are not treated in time. These complications include infertility, ectopic pregnancy, pre-cancerous cancer and premature death as well as infections in new-borns and infants. A large proportion of new STDs occur among adolescents and young adults who may not know that they are infected, which may have a negative impact on their sexual and reproductive health in the future. In addition, it is known that, STDs facilitate infection with human immunodeficiency virus / acquired immunodeficiency syndrome (HIV / AIDS).

HIV/AIDS can be acquired by any one through body fluids like blood, semen, vaginal & rectal fluids and breast milk (Healthline.com). Hence, non-usage of condoms is one of the prime reasons for acquiring HIV/AIDS. The key populations most affected by HIV in India are commercial sex workers, homosexuals, people who inject drugs and transgenders (UNAIDS, n.d.).

According to UNAIDS 2018 estimates, in 2017, India had 31 per cent new HIV infections and 40 per cent AIDS related deaths. India gives the highest figures as compared to 11 other countries in the Asia and Pacific region. In 2017, there were 80,000 new HIV infections and 69,000 deaths related to AIDS in India. There were 21,00,000 people living with HIV, 49 per cent of whom had access to antiretroviral therapy (UNAIDS, n.d.).

National Family Health Survey (NFHS) (2015-16), as cited in Waghmare (2017) highlights that, 77.4 per cent men are aware that consistent condom usage can reduce the chances of getting HIV/AIDS. Albeit, only 5.6 per cent of the male population in India uses condoms. According to Lok Sabha data, as cited by Waghmare (2017), during 2014 to 2017, the cases of HIV/AIDS have reduced from 2.2 lakhs to 1.9 lakhs whereas there has been an increase in STDs from 22.5 lakhs to 28 lakhs. The figures are attributed to unprotected sex.

Sexually transmitted diseases (STD) are a public health problem not only because of their high incidence worldwide, but also because of the possibility of causing serious and persistent complications in infected people who are not treated in time.

As per United Nations, India stands among the lowest in Asia as compared to the 46.1 per cent condom usage in Japan (Waghmare, 2017). Condoms are majorly used for family planning as compared to a precaution for avoiding STDs. The usage of condoms as a family planning method is increasing, however it is below the global levels (Waghmare, 2017).

According to Health Management Information System, MoHFW, the distribution of free condoms had also reduced from approx. 7.2 lakhs in 2004-05 to approx. 3.3 lakhs in 2016-17 (Waghmare, 2017). This may also be a reason for reduced usage of condoms and increased cases of STDs in the country. According to fourth NFHS, in Maharashtra, 7.1 per cent of the people use condoms (MoHFW, 2016). In this context, according to the Mumbai District AIDS Control Society (MDACS), as cited in Pandit (2016), 91 per cent of the people who tested positive for HIV had acquired it through unprotected sex.

The National AIDS Prevention and Control Policy, 2002 came into force under the National AIDS Control Programme (NACP) to prevent discrimination against people living with HIV (PLHIV). In 2014, an HIV & AIDS Bill was introduced in the Indian Parliament and was passed in 2017. The bill was introduced to safeguard the rights of PLHIV (NACO, 2017). In this regard, the Government of India has run a series of successful programmes for sex workers. The Avahan programme has focused on the high risk groups in six states of South India since 2003. The programmes include advice on safe sex, treatment of STIs and social activities. The Public Health Foundation of India (PHFI) was initiated by the Indian Prime Minister in 2006 in response to the repair of limited institutional capacity in India to strengthen training, research and development of public health policy. The NACP aims to reduce STD cases and thereby control HIV transmission by minimizing the risk factor and preventing long-term morbidity and mortality due to STDs. Maharashtra has established 54 centres in the state. Out of these 54 centres, 11 STD clinics are located at the level of sub-districts in districts with high prevalence. All these centres have STD drugs, consumables, TV / VCR and other input data. The

The National AIDS Prevention and Control Policy, 2002 came into force under the National AIDS Control Programme (NACP) to prevent discrimination against people living with HIV (PLHIV).

state has completed the syndromic training in STD management for all doctors and healthcare professionals.

NGOs have played a vital role while implementing all the government initiatives in the community. NGOs across India have designed interventions to cater to different key populations, youth and adolescents by providing services like awareness generation, counselling, treatment, referrals, provision of birth control measures at low cost and so on. Aastha Parivaar based in Maharashtra, is one such organisation that has been working on the issues of HIV/AIDS, safe sex, sex workers and related matters of general population.

2. About Aastha Parivaar

Since its inception in 2001 and registration in 2009, Aastha Parivaar has become one of the largest umbrella organizations representing various sex worker communities based in Mumbai, Pune and Thane which includes street sex workers, brothel based and Hijras/transgenders (AasthaParivaar.org, n.d.).

Aastha Parivaar provides financial and administrative support to community based organizations (CBO) working towards resolving the social and health related issues of commercial sex workers and their families. In association with Family Planning Association of India (FPAI) and Family Health International (FHI) 360, Aastha Parivaar provides services in areas of accessing integrated counselling and testing centers (ICTC), diagnosis and treatment of STDs, integrated family planning services and AIDS for gender employees, gender sessions and sexuality, contraception updates that provide information on double protection and training for HIV educators and social workers (AasthaParivaar.org, n.d.).

Funded by the Mumbai District AIDS Control Society (MDACS) the first Target Intervention (TI) project implemented by Aastha Parivaar, is targeted towards prevention of HIV among sex workers in the areas of Malad and Grant Road in Mumbai. The second TI has been implemented for girls at a bar in Dombivali based in Thane District, and is funded by the AIDS Society's Control Commission of Maharashtra State (MSACS) (AasthaParivaar.org, n.d.).

In 2010, the organization launched 'Aastha Condoms' in the market which were provided at 45 paise per condom. Aastha Parivaar obtained 10 lakh condoms from the manufacturing giant 'HLL Lifecare Ltd.' the leading condom manufacturer in India. The condoms were distributed to various social organizations in their network who worked with the 'Key Population' (KP). The project gathered overwhelming response and worked positively towards achieving the goal of inculcating the habit of safe sex (AasthaParivaar.org, n.d.).

3. Project Focus

To reinforce the habit of safe sex there is a need for the KPs to use condoms. Aastha Parivaar observed that there is a shortage of free condoms as well as availability of low cost and better quality condoms. This gap triggered the organization to explore the possibility of reintroducing 'Aastha Condoms'.

To meet the rising demand among the key populations, the We Care interns were assigned the task of reintroducing 'Aastha Condoms' in the regions of Mumbai, Thane & Pune. The objectives of the project were:

· To assess the demand and supply gap for condoms in sampled sites
· To assess the preferences and demand for condoms among sex workers in sampled sites
· To conduct a price comparison among leading condom brands

4. Methodology

To gain a deeper understanding of the demand and preferences for types of condoms, the interns decided to undertake a micro-exploratory study. Of the 66,000 registered key population spread across Maharashtra under Aastha Parivaar, four sites i.e. Dombivali, Thane, Grant Road, Malad and Malavni were selected for the study.

Data from sex workers at the above four sites was collected on the following data points: a) number of registered sex workers, b) number of customers served per day, c) condom usage pattern, d) purchase of condoms, e) preferred condom flavors, f) opinion about quality of condoms. Four Focus Group Discussions (FGDs) were conducted with the help of an interview guide designed in consultation with Aastha Parivaar team.

The data collected based on primary research was analyzed using descriptive statistics to derive the demand estimation at the four sites.

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The findings of the primary research were compared with the data gathered through secondary research. Interns studied the secondary data with regards to a) quantity of government sponsored condoms supplied at each site of the study, b) manufacturing cost and pricing of 10 condom brands available in the market, c) condom specifications for the shortlisted brand of condom.

## 4. Findings

4.1. Distribution of Sex Workers:

The FGDs conducted with the sex workers highlighted that there were in all 6550 registered sex workers i.e. 'Key Population' individuals (KP) collectively residing in five localities i.e. Dombivli, Thane, Grant Road and Malad-Malawani (See Figure 1).

Figure 1
Distribution of KPs locality wise
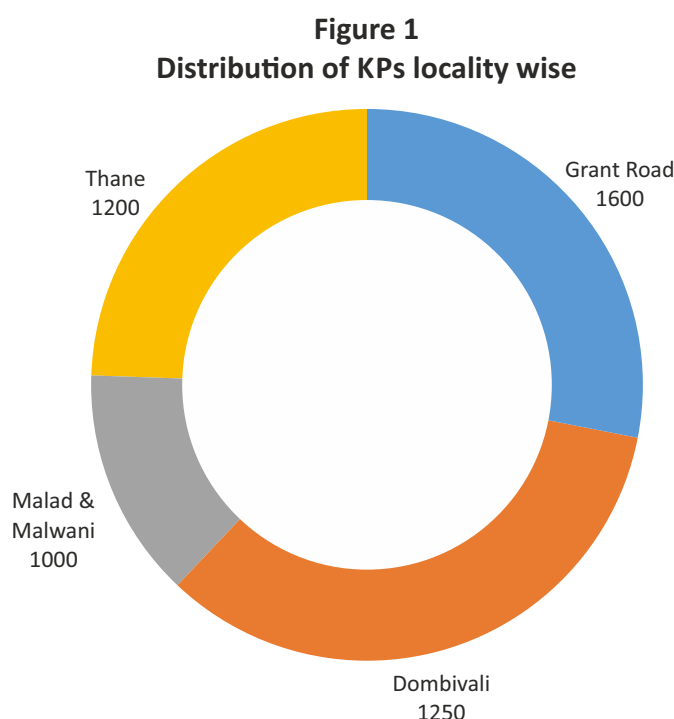
4.2. Condom Usage and Buying Pattern:

Discussions with sex workers, pimps and procurers centered around requirement of condoms, usage, buying pattern, influx of customers, general challenges faced by the sex workers pertaining to their health and so on. Figure 2 showcases the number of customers serviced per day, respective number of condoms used and the buying pattern of condoms.

Figure 2
Condom usage and buying pattern
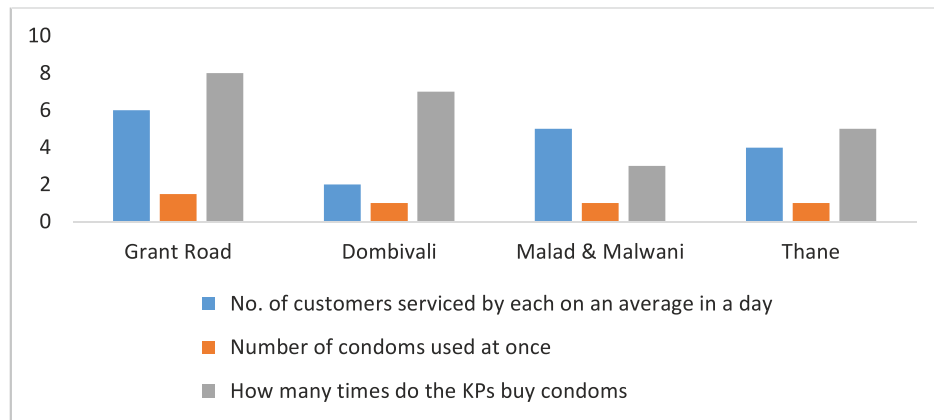
According to Figure 2, it can be inferred that, Grant Road being a prime red light area experienced high influx of clients. This was followed by localities of Malad-Malawani, Thane and Dombivli. Irrespective of location, on an average, each sex worker was able to service four clients per day. For every client, minimum one condom was used at all the locations.

When enquired about who takes the onus of buying the condoms, the response at each location was different. At Grant Road, eight out of 10 times sex workers purchased the condoms followed by Dombivli where condom purchases made by the sex workers were estimated to be seven out of 10 times. At Thane and Malad-Malawani, condoms were purchased by sex workers five and three times out of 10 respectively. Hence, more than 50 per cent of the times clients did not carry condoms with them. The respondents shared that quality was not a criteria while buying condoms.

4.3. Demand Estimation:

Each of the four sites being registered areas for brothels and sex work received free condoms from the Ministry of Health & Family Welfare (MoHFW). The free condoms were distributed by National Aids Control Organization (NACO) or State AIDS Prevention and Control Society (SACS) to High Risk Group (HRGs) through Target Intervention (TI) centres (Naco.gov.in, n.d.). Aastha Parivaar being a TI center distributed condoms to the registered 'Key Populations' (KP).

Over a period of last few years, Aastha Parivaar observed that the supply of free condoms was not meeting the requirement of the KPs. Figure 3 shows the demand & supply gap observed at the four sites under the study.
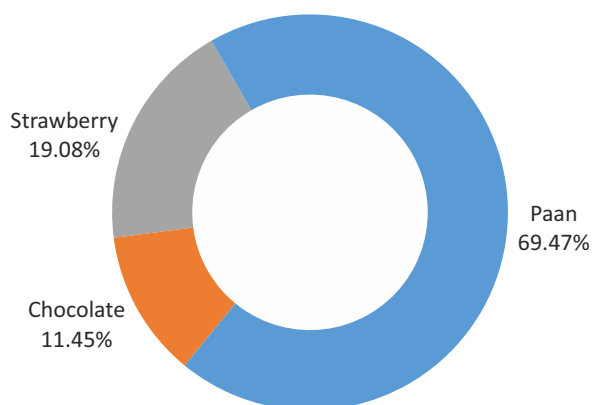
Figure 3
Demand Supply Gap
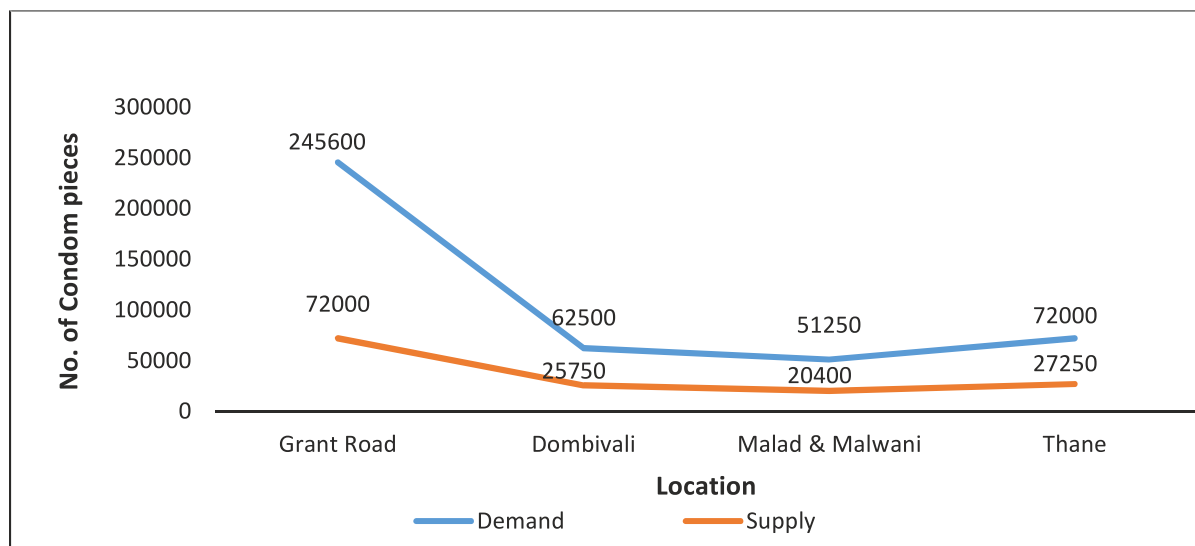
Source: Focus Group Discussions with Target Audience

The above figure reveals that, there was a huge gap in the monthly demand and supply of free condoms facilitated by Aastha Parivaar. Grant Road, the prime red light area of Mumbai faced the biggest demand-supply gap. It received only 30 per cent of the actual requirement of free condoms. Although the gap reduced, it was still significant at the remaining locations. Against the requirement, free condoms received by Thane, Malad-Malavani and Dombivli sites were 38 per cent, 40 per cent and 42 per cent respectively.

4.4. Condom Flavour Preference:

As Aastha Parivaar decided to reintroduce 'Aastha Condoms', it wanted to gauge upon the flavour preferences if any, amongst the targeted beneficiaries.

Figure 4
Flavour Preference

Source: Focus Group Discussions with Target Audience

It can be inferred from Figure 4 that the respondents preferred 'Paan' flavoured condoms. 'Strawberry' and 'Chocolate' flavoured condoms were not found to be in demand among the respondents.

4.5. Price Comparison:

In order to arrive at a competitive pricing for the Aastha Parivaar branded condoms a price comparison exercise was undertaken. Aastha Parivaar team identified the top ten condom players in the market. The manufacturer, pack size, price per pack and per piece are displayed in Table 1.

Table 1
Top 10 Condom Brands

Brand	Manufacturer	Pack Size	Price per Pack	Price per Piece
Deluxe Nirodh	Indian Govt.	60	160	**2.67**
Playboy	Thai Nippon Rubber Industry PLC	12	96	**8.00**
Moods	HLL Lifecare	3	25	**8.33**
Manforce	Mankind Pharma	3	25	**8.33**
Kohinoor	TTK Ltd. Group	3	25	**8.33**
Skore	TTK Ltd. Group	8	80	**10.00**
Carex	Karex	10	110	**11.00**
Convex	Convex Latex Pvt. Ltd.	9	109	**12.11**
Kamasutra	JK Ansell Ltd	6	76	**12.67**
Durex	United Kingdom	3	50	**16.67**

Source: Data organized by Authors

Based on the secondary data and primary interactions with the Aastha Parivaar team it was observed that premium condom brands like Durex and Kamasutra were prevalent in the market retailing at INR 12-16/- per piece. As Aastha Parivaar aimed at introducing low cost condoms it was felt that its closest competitor could be Government manufactured Deluxe Nirodh brand, which was available at INR 2.67/- per piece. In view of this Aastha Parivaar decided to offer the 'Aastha Condoms' at approximately INR 2/- per piece taking into consideration the condom manufacturer cost of INR 1.85/- per piece and another INR 0.15/- per piece as handling and transportation cost to all the Aastha Parivaar centers.

4.6: Packaging:

Packaging plays an important role in attracting consumers to buy products. Discussion on condom packaging revealed that sex workers preferred black coloured packaging similar to Aastha Parivaar's previous condom batch that released 10 years ago. This packaging was perceived to be of superior quality and having good flavors.

4.7. Fund Raising for Condoms:

To meet the manufacturing cost as well as considering the purchasing capacity of consumers, Aastha Parivaar has tentatively decided on pricing of the condoms. Due to the condom price being increased from INR 0.45/- per piece to INR 2/- per piece the Target Audience will find it difficult to purchase the product. In order to subsidize the cost of the product Aastha Parivaar is in need of funding support.

To tackle this situation, a few MNCs were targeted to solicit their support through the CSR route. The targeted MNCs majorly fell under two heads based on their CSR agenda and product offerings. Firstly, a set of companies interested in supporting the social marketing campaign of Aastha Parivaar branded condoms as a part of addressing reproductive health were contacted. Large corporations' viz. Reliance Foundation, Aditya Birla Group, Hindustan Unilever Limited and Bosch were approached to monetarily fund the project.

Secondly, to create a strategic fit leading condom manufacturing brands like Manforce by Mankind Pharma, Moods by HLL Life Care and Skore by TKK Pharma were contacted. They were requested to provide condoms at a subsidized rate as it would align with the CSR agenda of the representative companies. It was suggested to them that the distribution of the subsidized condoms should be channelized through Aastha Parivaar. This arrangement would also optimize brand building of the companies in the market.

5. Discussion

Sex trade in India has been prevalent since time immemorial. From Kautilyas's famous Arthashastra dictating the code of conduct for prostitutes to the legends associated with the concept of Devdasis encompassing the holy prostitutes - with prostitution so deeply embedded in the Indian culture and traditions, can we really blame this current scenario prevalent or get rid of the stigma attached?

Constitution of India, under Article 23, prohibits trafficking in every form including commercial

sexual exploitation of women and girls. We have special legislations like Immoral Traffic Prevention Act (ITPA) and local legislation like Goa Children's Act and so on, in addition to the provisions in the IPC (Indian Penal Code). However, are these enough to protect our women? The change of semantics from 'prostitution' to 'sex worker' reflects the shift in society's approach from viewing it as a social impediment to a profession. Laws should be objectively developed to tackle the inhumane working conditions and treatment these women are subjected to similar to those implemented in other professions. Their health and social security is often neglected due to the social stigma attached to this profession.

The number of NGOs in India working towards the welfare of sex workers is one of the lowest as compared to other fields of social service. The factors responsible for this consist of the insensitivity towards the sex workers and discomfort of dealing with that section of society. Often oppression of the victim occurs, wherein the worker herself is fretted upon or penalized for soliciting the service. The unorganized community kept under wraps also poses as an obstacle for welfare groups to reach out to them. Can we continue neglecting this strata of society and live our daily lives as we usually do?

Should India legalize prostitution like other advanced countries including France who is capitalizing on their red light areas serving as tourist attractions? The answer to this is not so simple – trade-off between hurting the age old view of sex as a taboo topic and legalizing prostitution to enable better standards of living and protection of the rights of the sex workers need to be considered. Recognizing it as an economic activity will promote women's health as well as combat illegal trafficking. However, on the flip side there are many other questions which need to be answered. What does the term "legalize" actually imply? Will it mean a brothel or sex parlour can be opened anywhere and start

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functioning? Will these workers be given the same kind of respect and dignity as other professions?

It is ironical that those who are labelled 'high society call girls' prefer to operate surreptitiously to cater to those who choose to wear the mask of respectability in society.

Failing to consider this considerably large part of the population can have adverse economic implications for companies, especially those who manufacture and market pertinent products.

In the given scenario, organizations such as Aastha Parivaar can play a pivotal role in organizing the trade of sex workers. It should enable them to avail basic social benefits which they have a right to as they provide a service and are engaged in sex work as an occupation. Pioneering attempts need to be made to bring visibility by studying the ways in which it is handled by other countries and sensitizing the government and authorities for the same.

6. Conclusion & Recommendations

Due to various taboos associated with sex workers' profession there is huge demand supply gap of contraceptives, which impacts sex worker's health. The inappropriate demand estimation, insufficient and irregular supply of condoms by the Ministry of Health has been a prevailing issue at the brothel sites in Mumbai. The proposition of 'Aastha Condoms' serves as a ray of hope to fight STDs and support from the corporations shall facilitate goal realization.

In hindsight of the research work undertaken and examination of the condom industry, it is clear that attainable behavioural change in the area of sexual behavior will take a long time. Differential pricing and social marketing strategy for marketing contraceptives must be adopted. This will maximize revenue and

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help Aastha Parivaar to be self-sustainable in the long run. To scale the reach Aastha Parivaar should use creative strategies like using the 'babus' or the middlemen to distribute 'Aastha Condoms' in their respective networks.

To keep the supply of condoms constant, strategic associations for production planning is required. Aastha Parivaar should propose a structured long term association in the form of Public Private Partnership by involving corporates and government departments both in manufacturing low cost condoms and distributing the same.

Addressing sexual health issues calls for behavioural change. In this context it is important that Aastha Parivaar generates sufficient awareness about safe sex practices at grassroot level. Aggressive promotion and education programmes must be undertaken to educate sex workers as well as clientele and medical practioners dealing with sex workers. Finally, combined efforts of all stakeholders will be required to work on the sensitive issue and bring about the desired positive change.

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Drug Abuse: Concern among Youth in Maharashtra

Abstract: *Drug abuse is one of the major problems of contemporary society. Maharashtra is one of the leading states in India which has the highest number of suicides due to drug abuse. The present study is conducted to examine the knowledge and beliefs about drug abuse among undergraduate students and identify drug usage practices. The study also probes to measure the extent of drug usage. The study indicates that peer pressure and exposure to drugs were found to be major triggers in indulging the youth in drug abuse. The gap in knowledge of treatment and treatment-seeking behaviour was found to be substantial. The study recommends that there is a need for collaboration between government, NGOs, academic institutions and parents to create mass scale awareness for drug abuse and its impact. Strong behaviour change communication strategies need to be designed for improving the treatment-seeking behaviour among substance abusers.*

1. Introduction

Substance abuse refers to the harmful or hazardous use of psychoactive substances, including alcohol and illicit drugs. Psychoactive substance use can lead to dependence syndrome[1] (WHO, n.d.). "Drug abuse is one of the most serious health problems faced by the world today which not only destroys the person involved, but his entire family, the society and the nation at large and spawns antisocial behaviour such as stealing, crime and violence" (IAS Parliament.com, 2017).

As per the facts stated by the World Health Organization (WHO), globally, the harmful use of alcohol results in 3.3 million deaths each year. At least 15.3 million persons have drug use disorders (WHO, n.d.). The UN estimates that illicit drug use causes over 2

> *The UN estimates that illicit drug use causes over 2 lakh deaths globally, most of them being in their mid-30s. With most drug users being in the productive age group of 18-35 years, the loss in terms of human potential is tremendous.*

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[1] Dependence Syndrome: a cluster of behavioural, cognitive, and physiological phenomena that develop after repeated substance use and that typically include a strong desire to take the drug, difficulties in controlling its use, persisting in its use despite harmful consequences, a higher priority given to drug use than to other activities and obligations, increased tolerance, and sometimes a physical withdrawal state (WHO, n.d.).

lakh deaths globally, most of them being in their mid-30s. With most drug users being in the productive age group of 18-35 years, the loss in terms of human potential is tremendous. The damage to the physical, psychological, moral and intellectual growth of the youth is very high. Adolescent drug abuse is one of the major areas of concern affecting adolescent behaviour (Azad India Foundation, n.d.).

For decades, cannabis, heroin, opium and hashish have been the most commonly used drugs in India with the increasing prevalence of methamphetamine i.e. MDMA in recent years (Drug Addiction..., n.d.). MDMA commonly called ecstasy or molly is a synthetic drug that alters mood and perception and is chemically similar to both stimulants and hallucinogens which has gained popularity in cities (Drugabuse.gov, n.d.).

According to a survey by the Ministry of Social Justice and Empowerment, India has more than 70 million drug addicts (IAS Parliament.com, 2017). As per Government of India, 3,647 suicides were reported in India due to drug abuse and addiction in 2014. Of these, Maharashtra reported 1,372 suicides followed by 552 in Tamil Nadu, 475 in Kerala, 305 in Madhya Pradesh and 38 in Punjab (Sharma, 2016).

To tackle the problem of illegal drugs, the Parliament passed 'Narcotic Drugs and Psychotropic Substances Act' in 1985 as a comprehensive legislation on narcotics, providing for stringent and long term prison sentences and heavy fines for offenders. Due to the enormity of the issue, government alone cannot gain control over the extensive drug abuse hence, NGOs also require to supplement the efforts by designing interventions for prevention and eradication to curb the menace of drug abuse. Ministry of Social Justice and Empowerment supports activities of NGOs working towards prevention and rehabilitation (Socialjustice.ni.in, n.d.). Muktaa Charitable Trust is one such NGO based in Pune, Maharashtra that works towards tackling the issue of drug abuse within Pune city.

1.   About Muktaa Charitable Foundation (MCF)

MCF is a not-for-profit, registered public trust founded by socially conscious citizens in 2005. The organization began its operations by introducing a helpline service to inquire, discuss and share about issues related to HIV / AIDS and Tuberculosis (TB) which is now called Samvad Helpline. Samvad HIV Helpline is a free, anonymous, one-to-one telephonic counselling, information and the referral centre currently has 12 counsellors on 10 lines; receiving more than 100 calls a day. MCF has call centres in Pune, Maharashtra and Patna, Bihar. It has helped to bring about positive change in the lives of over 1,50,000 people with phone calls from all over India (Mcf.org.in, n.d.).

Further focussing on the issue of HIV and TB, the organization has designed more programs like AASHA, Sampark, Ankur, Sakay and more. One of its programs is geared towards the distressing issue of drug abuse among the youth called the 'No-Addict' program.

'No-Addict' is an initiative designed by MCF to tackle the growing nuisance of drug abuse among youth. It aims at analysing the factors influencing adolescents towards substance abuse and has initiated a school based drug abuse prevention program called 'Unplugged'. MCF has introduced a 'Train-the-Trainer' program for doctors to equip them with knowledge and skills to handle drug abuse patients (Mcf.org.in, n.d.).

2. Project Focus

MCF has been spreading awareness about physical and mental health and were keen on exploring the de-addiction space. Dr. Madhu Oswal, the co-founder of MCF, an active member of the Rotary Club at Ghatkopar, Mumbai conducted workshops for doctors and fellow enthusiasts aspiring to contribute to de-addiction. The workshops targeted on identifying the best practices to deal with such cases and imparting technical knowledge i.e. categories of drugs, mode of consumption, availability, extent of harm, affected target group and other related aspects.

As teenagers, succumb to substance abuse on a relatively larger scale, MCF decided to conduct a need assessment in this space of teenager drug abuse. It was proposed that based on the research findings, MCF would design appropriate service interventions.

In the above context, We Care Interns were required to conduct a primary research on drug abuse amongst students studying at undergraduate levels in Pune. The objectives of the research study were as follows:

- To examine the knowledge and beliefs about drug abuse among undergraduate students.
- To identify the practices about drug usage among teenagers.
- To measure the extent of drug abuse in the identified colleges.

'No-Addict' is an initiative designed by MCF to tackle the growing nuisance of drug abuse among youth. It aims at analysing the factors influencing adolescents towards substance abuse and has initiated a school based drug abuse prevention program called 'Unplugged'.

3. Methodology

In order to achieve the above objectives it was decided to undertake an exploratory micro-study. Following methodology was followed to collect the requisite data.

A pre designed questionnaire developed by MCF was suitably adapted to collate information based on following data points:

I. Demographic Profile: a) Age, b) Gender, c) College and d) Course of study.
II. Information about drug abuse: a) Awareness about the typology of drugs, b) General perception with respect to substance abuse, c) Ease of accessing drugs, d) Frequency of drug usage and e) Awareness about treatment and rehabilitation.

The survey also captured other behavioural details such as: a) Severity of drug abuse against alcohol abuse and b) Students' behaviour towards a drug addict.

Sampling: The study was conducted in two phases. In the first phase to identify the unit for study, a list of the colleges in Pune offering both junior as well as under graduate courses in various streams was collated. Out of the 20 colleges identified with the help of systematic random sampling, eight colleges were selected using the following criteria:
* Number of students in college (Higher Side- Fergusson College, BMCC, Wadia College)
* Different courses that were offered in college (Jr. College, Under Grad and even Post Grad offering Science, Commerce and Arts courses, eg. FC- Arts Courses, SCAC- Commerce, Wadia- Jr College and Grad)
* Social status of the students
* Economic status of the students (lower-SP College, middle, upper middle-SCAC)
* Diversity in the cultural mix of students

A pilot study was conducted at Fergusson College as it had a good mix of students from varied socio-economic strata. Based on the pilot study the final questionnaire was further structured. The questionnaire consisted of dichotomous questions to quantify the attitude of the respondents. Students who had negligible idea about drug abuse were given the freedom to respond hypothetically depending on their knowledge of how vastly the drug was used.

Using the convenience sampling method 427 respondents were identified from the sampled eight colleges of Pune. The distribution of the same is listed in the Table 1 below. We Care interns met the respondents and collected data through a self-administered questionnaire.

Due to the nature of the study, it was decided to handle the data collection in a secured and confidential manner. Both quantitative and qualitative information was gathered to gauge the mind-set of the students and understand their beliefs and attitude towards the drug abuse which is so prevalent amongst the young students in the country and worldwide. Table 1 shows college wise distribution of respondents.

Table 1
Distribution of Respondents in Phase 1

S.N.	Name of College	No. of respondents
1.	BMCC	49
2.	Fergusson College	50
3.	Wadia College	78
4.	Symbiosis College of Arts and Commerce	53
5.	Pune University	46
6.	SP College	47
7.	Garware College	52
8.	Modern College	52
	Total	427

Source: Data collected by Authors

Phase II of the study was carried out with the help of online questionnaire which was circulated through WhatsApp. The questionnaire was converted to an online survey in order to scale up the reach.

It was decided to circulate the survey form to MBA colleges across the country with the help of the acquaintances of the interns. The doctors at Muktaa Charitable Foundation also circulated the form within their network as well as to their contacts in Medical Colleges in Maharashtra. The survey was open for two weeks. Using convenience sampling method 142 responses were collected from 13 colleges. The total number of respondents including both Phase I and Phase II were 569.

Data analysis was carried out with the use of Excel software. Descriptive statistics were used for inferring and presenting the data. Cross tables were drawn to understand the impact of the figures on the information, practices and attitude about drug abuse.

Data Collection in College premises

## 4. Findings and Analysis

4.1. Profile of the Respondents:

The profile of respondents was studied across age, gender, college and course of study.

4.1.1. Age:

The study majorly targeted colleges offering undergraduate courses and hence less number of students above the age of 30. Figure 1 indicates that 47.5 per cent respondents belonged to the age group of 19-21 years. This implies that the respondents mostly belonged to under graduate levels. One fourth of them were teenagers who belonged to junior college.

Figure 1
Respondents' Age
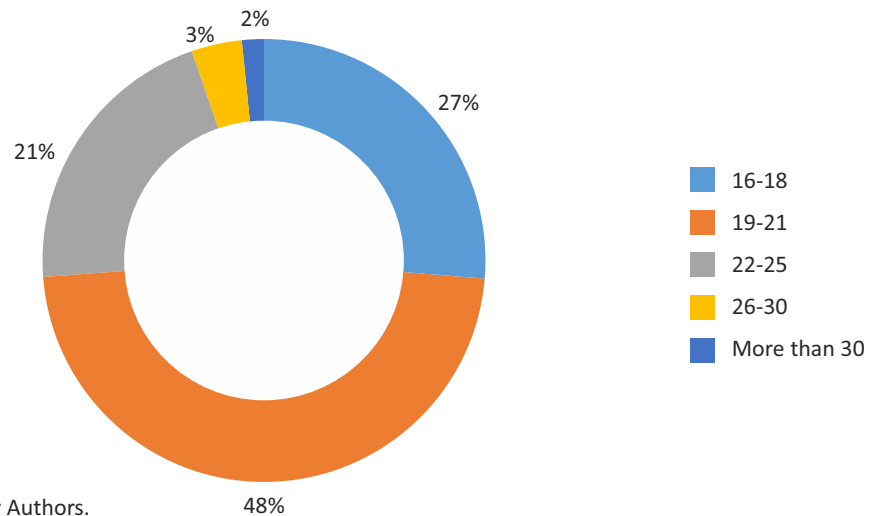
Source: Based on data collected by Authors.

The respondents to the online survey comprised of 65 per cent boys and 35 per cent girls.

4.1.2. College:

Colleges were selected based upon proximity and the courses offered. Eight colleges offering under graduate courses were selected for the face to face interviews. The colleges for the online survey were selected randomly based on the contacts of the interns.

4.2. Typology of Drugs:

The students were asked to indicate their awareness of different kinds of drugs like 'Cannabis', 'Ecstasy', 'LSD', 'Heroin', 'Cocaine' and 'Amphetamines'.

Figure 2
Awareness about Drugs
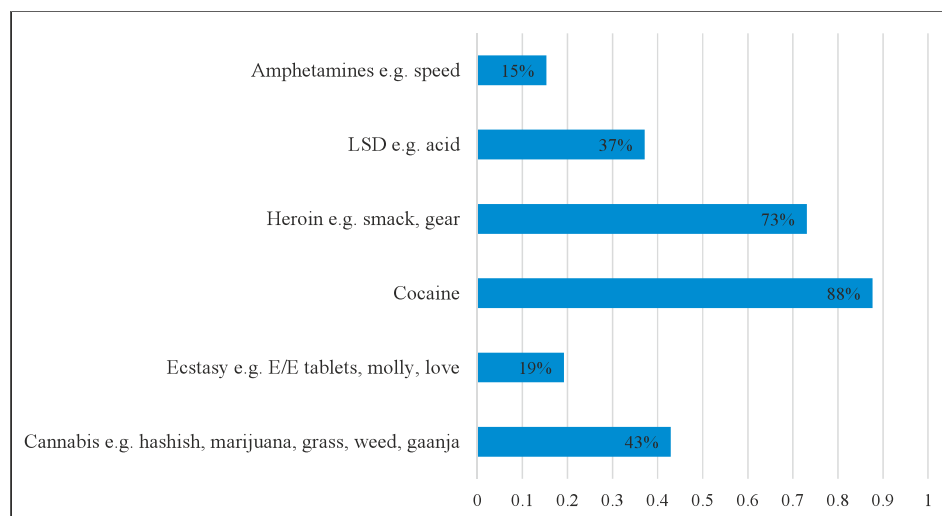
Source: Based on data collected by Authors
Disclaimer: Due to multiple responses the total will not be 100.

Figure 2 illustrates that 88 per cent respondents were aware of Cocaine. This was followed by Heroin known by 73 per cent respondents and Cannabis known by 43 per cent respondents. Both Cocaine and Heroin were mostly known by their original names and Cannabis was widely known as hash, marijuana, weed or gaanja.

4.3. Drug Usage: Perception:

A very pertinent issue with drug abuse is one's attitude towards it. The data indicates that around 51 per cent respondents believed that it was normal to consume drugs at least once. According to them trying drugs once was not harmful and considered normal for the youth. This implies that respondents are not aware of the harmful effects of drug usage.

43 per cent respondents felt that more than one third of their peers had tried cannabis in their respective colleges. Additionally, with regards to alcohol and tobacco usage it was found that 63 per cent respondents believed that everyone tries alcohol and/or tobacco, at least once while pursuing college. The consumption of the same is considered less harmful by the youth as they are popularly used.

The data further observed that 19 per cent respondents felt that occasional use of the drug called 'Ecstasy'[2] in the rave parties, was not dangerous and 81 per cent respondents believed that it is dangerous to use Ecstasy occasionally.

4.4. Ease of Availability of Drugs:

To understand the ease of procuring different drugs the respondents were asked to indicate the ease of availability of the different drugs on a scale of 1 to 4, with 1 being easily available and 4 being very difficult. The data was gathered for Cannabis (Hashish, Marijuana, Grass, Weed, Gaanja), Ecstasy (E/E tablets, Molly, Love), Cocaine, Heroin (Smack, Gear), LSD (acid) and Amphetamines (Speed).

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[2] Ecstasy: 3,4-methylenedioxy-methamphetamine (MDMA) commonly called Ecstasy is a synthetic drug that alters mood and perception (awareness of surrounding objects and conditions). It is chemically similar to both stimulants and hallucinogens, producing feelings of increased energy, pleasure, emotional warmth, and distorted sensory and time perception.

Figure 3
Ease of Availability of Drugs
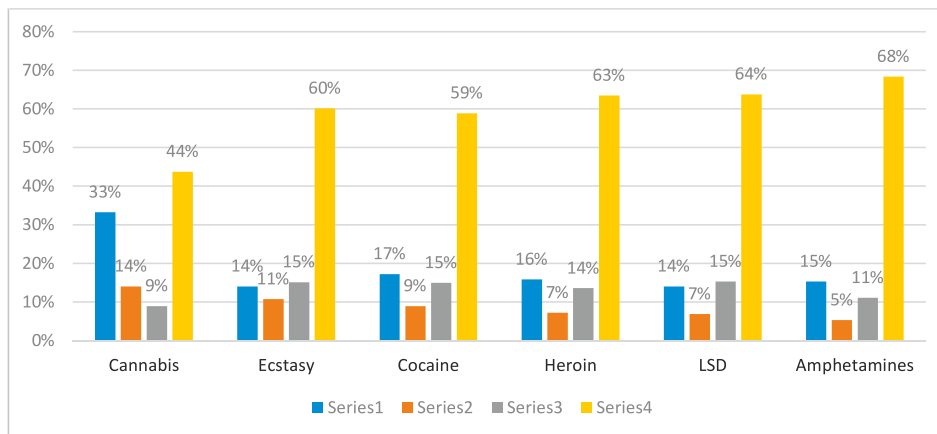
*Series 1: Very Easy. Series 2: Easy. Series 3: Difficult. Series 4: Very Difficult
Source: Based on data collected by Authors.

Figure 3 showcases high response in category four i.e. very difficult to procure. Cannabis was reported as the easiest to procure followed by Cocaine and Heroin as they were easily available in the vicinity of their respective colleges.

4.5. Consumption of Drugs:

There is a thin line between 'Drug Use' and 'Drug Abuse'. 'Drug use refers to consumption of drugs with a lower frequency or irregularly'. While 'drug abuse refers to regular and/or compulsive use of drugs (at times illicit)'. The purpose of the two terms was to distinguish people on the basis of whether their illicit drug use has or has not become a significant feature of their lifestyle and whether it is likely to have an effect on their character.[3]

Table 2
Frequency of Drug Consumption

	Never consumed	Consumed 1 to 5 times	Consumed 6 to 10 times	Consumed 11 to 20 times	Consumed 21 to 50 times	Consumed more than 50 times
Alcohol	354	82	53	26	11	43
Tobacco	429	61	26	13	8	32
Cannabis	483	38	17	9	6	16
Inhalants	532	20	8	4	0	5
MD	551	15	1	0	0	2
Meow Meow	556	7	4	0	0	2
Ecstasy	556	6	3	2	0	2

[3] American Psychiatric Association. Practice Guideline for the Treatment of Patients with Substance Use Disorders. Arlington, VA: APA; 2007 Apr. Report No.: 164

The data on frequency of consumption of drugs presented in Table 2 indicates high consumption of alcohol and tobacco amongst the respondents. Both these substances were not considered to be harmful by the respondents. It is observed that 'MD', 'Meow Meow' and 'Ecstasy' were reported as the least consumed drugs. This could be partly due to different nomenclature of these drugs or their rare availability in the market. The respondents were also sceptical about the data being reported to the authorities leading to instances of under reporting.

4.6. Attitude towards Drug Abuse:

With a high prevalence of drug abuse, it was important to understand the awareness level of the respondents about the facilities for treatment of the same. It was noted that almost 48 per cent respondents were unaware of the treatment and rehabilitation facilities. This highlights the need to sensitize college students about drug addiction, its symptoms and possible treatment and rehabilitation. Accordingly, students found alcohol abuse to be more harmful to the society and hence students need to be sensitized on this aspect as well.

6. Conclusion & Recommendations

Addiction is a social and major public health problem. Collecting data for this study was difficult because students feared the consequences of their responses getting recorded and reported to college authorities and drug suppliers. The study confirms that amongst the college students, friends are the important influencers in facilitating addiction. The most common substance used is tobacco followed by alcohol and other illicit drugs. The findings are worrisome for the polysubstance users (using three or more than three substances for a longer duration.) The major barriers identified in the study are lack of awareness about where to take the treatment and the absence of the impacts of drug addiction on health. The gap in knowledge of treatment and treatment-seeking behavior was found to be substantial.

The major barriers identified in the study are lack of awareness about where to take the treatment and the absence of the impacts of drug addiction on health. The gap in knowledge of treatment and treatment-seeking behavior was found to be substantial.

The failure of the war on drugs is an example of policy failure. Drug related violence is known to cause further instability in the societal fabric. There is a need for more NGOs like Muktaa to create mass awareness in the society about drug abuse, its impact and need for taking immediate treatment. The Ministry of Social Justice & Empowerment implements a "Central Sector Scheme of Assistance for Prevention of Alcoholism and Substances (Drug) Abuse. Financial assistance is provided to NGOs, Panchayati raj institutions, urban local bodies, for managing the Integrated Rehabilitation Centres of Addicts (IRCAs). NGOs can avail support of this scheme to scale up its efforts.

Taking part in the treatment for substance abuse may have positive outcome. Understanding treatment-seeking behavior of substance abuser is an important link in providing effective health care for treatment and prevention of complications of substance abuse. Strong behavior change communication strategies are the urgent need for improving the treatment-seeking behavior among substance abuser.

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Green Audit: A Revenue Generating Model for Waste Management

Abstract: Municipal solid waste (MSW) management has been a major challenge towards the goal of sustainable development for countries across the world. It has been growing at an alarming rate, which is expected to double by 2025. Waste management includes the control of generation, storage, collection, transfer, processing and disposal of waste. To enable this, identification and measurement of waste generated is the primary requirement. In Kerala, 'Plan@Earth' has been providing waste management services like door to door collection of waste across several municipalities and panchayats since 2009.

Plan@Earth believes that a nation's growth starts from its educational institutions, where ecology is thought as a prime factor of development associated with environment. Educational institutions now a day are becoming more sensitive to environmental factors and more concepts are being introduced to make them eco-friendly. To preserve the environment within the campus, various viewpoints are applied by several educational institutes such as promotion of energy savings, recycle of waste, water usage reduction, water harvesting and so on. In this context 'Green Audit' is defined as an official examination of the effects a college has on the environment.

Waste management includes the control of generation, storage, collection, transfer, processing and disposal of waste. To enable this, identification and measurement of waste generated is the primary requirement.

The current article describes the efforts taken by Plan@Earth to bridge the requirement of identification and management of waste at different educational institutions. It assesses the feasibility of 'Green Audit' as a service to institutions coupled with its expertise in waste management. The article evaluates the feasibility of providing services for generating revenue by undertaking 'Green Audit and Solid Waste Management' in educational institutions. This article is an outcome of Mr. Thomas Cherian's and Mr. Ajay Sreedevan's 'We Care: Civic Engagement' internship with Plan@Earth in February 2018.

1. Introduction

According to World Bank (2018), "In 2012, the worlds' cities generated 1.3 billion tonnes of solid waste per year, amounting to a footprint of 1.2 kilograms per person per day. With rapid population growth and urbanization, municipal waste generation is expected to rise to 2.2 billion tonnes by 2025." The per capita footprint of waste generation will further increase to 1.42 kilograms. The rates for Municipal Solid Waste (MSW) generation depend on factors like industrialization, development, population, disposable income, education, individual habits and so on. Urbanization is also directly correlated to increased waste generation. It is estimated that the residents in urban areas produce double the amount of MSW generated by those living in rural areas (World Bank, 2018). Hence, population growth and rapid urbanization has its share of disadvantages. The rising demand for food and other essentials has resulted in a rise of waste being generated on a day-to-day basis by every household.

There are more than one billion people on earth who produce waste every day. If this waste is not collected, treated or safely disposed it will lead to global crisis. Sustainable Development Goals cannot be met if waste management is not addressed as a priority, specially Sustainable Development Goal (SDG) three, that is to 'Ensure healthy lives and promote wellbeing for all at all ages'. Developing countries are struggling due to lack of effective waste management systems and infrastructure.

In low and middle-income countries, waste disposal is unregulated. It is mostly either dumped at unofficial dumping areas or openly dumped leading to serious health, safety, and environmental consequences. Hence the residents of developing countries, especially the urban poor, are more severely impacted by unsustainably managed waste (World Bank, 2018).

Describing the status of waste in India, Ahluwalia & Patel (2018) states that "The volume of waste is projected to increase from 64-72 million tonnes at present to 125 million tonnes by 2031". Further the authors highlight that untreated waste reaches the official dumpsites on a regular basis which were originally

The rates for Municipal Solid Waste (MSW) generation depend on factors like industrialization, development, population, disposable income, education, individual habits and so on.

designated for dumping residual waste. The Green House Gas (GHG) emissions at these dumpsites due to the decomposition of accumulated waste, contributes to global warming. In India, 7,935 urban centers generate 170,000 tons of solid waste per day. By 2030, the nature of waste accumulated will have an overwhelming detrimental impact if it stays unresolved (Sharma, 2017).

1.1. Role of Urban Local Bodies

Solid Waste Management (SWM) has been a major problem for the Urban Local Bodies (ULB) in the country due to high population density. With the shrinking urban spaces, accommodating the enormous amount of waste remains a daunting challenge to our health. Highlighting the waste treatment expenditure, Sharma (2017) indicates that, on an average, INR 500/- to INR 1500/- per ton is spent by city municipalities on waste management. In all about, 60 to 70 per cent of the allocated budget is spent on waste collection and the balance is spent on transporting collected waste to the landfill sites. This implies that negligible amount is being spent on treatment and disposal.

Effective waste management is expensive, often comprising of 20 to 50 per cent of municipal budgets. Operating this essential municipal service requires integrated systems that are efficient, sustainable, and socially supported (World Bank, 2018).

In order to encourage cities to improve urban sanitation and to measure the progress of Swachh Bharat Abhiyan, Ministry of Housing and Urban Affairs (MoHUA) initiated 'Swachh Survekshan Survey' in 2016 (MoHUA, 2018). In 2017, all the states were given ranking majorly based on collection transportation, processing and disposal of solid waste along with sanitation, innovation and capacity building amongst others. With the coverage of 434 cities in 2017, the cities of Kerala, viz. Kozhikode, Kochi, Palakkad, Thrissur, Thiruvananthapuram, Alappuzha ranked below 250 (Sudhish, 2018). Citing reasons for low score, Kumar (2017) indicated the failure of local bodies in waste collection, logistics, transportation, treatment and behavioural

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dynamics. Further, increase in population density resulted in expansion of real estate projects leaving no space for setting up landfills and waste-processing units. The major challenges faced were open drains, water bodies' clogged, insignificant efforts towards waste collection and segregation and presence of informal dumping grounds across the cities.

No locality can survive for long without an appropriate waste management system at a community level. Centralised arrangements leave limited scope for community-based participation, social entrepreneurship, livelihood generation, and innovations. The centralised waste disposal arrangement shifts the problem from the source of waste generation to waste disposal sites. Hence, the civic authorities are required to develop decentralized community owned effective waste management and treatment systems (Kumar, 2017). The decentralised community-based waste management arrangements do not suffer from the above limitations. For example, they treat solid waste near to the origin. In some cases, the treated waste becomes an economic resource, which can be used, thereby eliminating the need for transport, landfill, or treatment at the waste disposal site. They also encourage civic responsibility and innovation.

Decentralised arrangements could bring about citizen participation, generate livelihoods, and contribute to environmental sustainability and economic efficiency. In this context, Plan@Earth, an NGO based in Kochi, Kerela is making attempts to design a model that will help the local bodies to effectively tackle the critical issue of waste management.

2. About Plan@Earth

Plan@Earth was registered under the Travancore – Cochin Scientific and Charitable Societies Registration Act, XII of 1955 in 2009. The organization intends to spread awareness about preserving and protecting the environment. It promotes the principles of "Reduce, Reuse and Recycle" and in this direction, it has incorporated services for waste management.

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Their major projects include door to door collection of dry waste – "Suchitwa Sevanam Project" which is done in local municipalities and panchayats and by developing tie ups with few corporate companies and educational institutions to organize waste collection (Planetearth.org, n.d.).

Cleanliness Drive

3. Project Focus

Plan@earth has been collecting paper and plastic waste from educational institutions to recycle them and create beautiful products.

Products: Recycled Waste

However, they had never developed a formal association with any of the educational institutions nor marketed themselves as a complete solution provider for solid waste management. They learnt that educational institutions who undergo Green Audit get better scoring at the National Assessment and Accreditation Council (NAAC)[4]. Hence it was exploring the possibility of providing 'Green Audit and Solid Waste Management' as a service to educational institutes across Kochi.

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[4] The National Assessment and Accreditation Council (NAAC) is an organisation that assesses and accredits higher education Institutions in India. It is an autonomous body funded by University Grants Commission of Government of India.

In this context, the We Care interns were given the opportunity to develop a business plan for the above services which will also address the growing social issue of waste management in Kochi. The objectives for the assignment were:

- To study the process of 'Green Audit' and its practical application in educational institutions.
- To assess the feasibility of Green Audit and SWM service as a business model.
- To conduct the financial analysis of the proposed package of Green Audit and SWM.

4. Methodology

In order to achieve the above objectives, the interns initially conducted a secondary research to study the requirement and relevance of Green Audit for the market. They scanned the literature provided by Plan@earth like reports and articles mentioning the significance and applicability of Green Audit. Dry waste collection data of past three years pertaining to educational institutions was also accessed to study the categories of dry waste and collection frequency for different institutes. To get further clarity on the subject, the interns interacted with Dr. Nisha P of St. Xaviers Educational Institution in Aluva who had a previous experience in the field of 'Green Audit'.

To explore the possibility of educational institutions in Kochi opting for undertaking 'Green Audit and SWM', the interns decided to gather field data from few educational institutions that were associated with Plan@earth in the past. It was a convenience based sampling. The objective was to find out if the educational institutions would be interested to a proposal which offered 'Green Audit' along with the effective dry waste management system by Plan@Earth.

An interview guide designed with the support of Plan@earth team was used for data collection. It was decided to collect data from the faculties in charge of NAAC accreditation, the Principal in some colleges, Head of Departments of the different educational institutions on the following data points: a) status of NAAC Accreditation; b) awareness about Green Audit; c) current waste management practices; d) willingness to associate with Plan@earth for 'Green Audit and Solid Waste Management' services. On the basis of the interviews and the key inputs received more colleges were approached with a revised proposal. Out of the nine colleges, eight colleges where interested to associate for the services of 'Green Audit and SWM'.

Content analysis technique was used to analyze the data gathered during the primary and secondary research. SWOT analysis and PESTLE analysis were used to assess the feasibility of Green Audit as a business model.

5. Findings

5.1. Mapping the scope of 'Green Audit':

Secondary research and interaction with subject experts revealed that 'Green Audit' is conducted in three stages i.e. 'Pre Audit, Audit and Post Audit'. Pre-audit phase largely involves team formation, collection of background information of the organization under audit and examining previous audit reports, if any. In pre-audit, data pertaining to the factors that have an environmental impact such as electricity consumption, number of vehicles moving in and out of the campus, waste disposal, and water consumption level is collated from organization's staff with the help of student volunteers.

The on-site audit involves detailed observation of the data gathered as a part of pre-audit process. After conducting a random check of the collated data the audit team drafts the audit report and the action plan which is subsequently submitted to the management team of the educational institution.

The premise for educational institutions considering having 'Green Audit' exercise is based on following assumptions: Firstly, it supports in identifying the root cause for waste generation at the organization. This information aids in decision making with regard to undertaking measures to reduce waste generation and identify long term solutions for waste management. Secondly, it develops the organization's brand image of being eco-conscious and institutionalizes its environmental policy. Thirdly, for the purposes of NAAC accreditation 'Green Audit' findings earn a score of about five per cent in section VII of key indicators for Cumulative Grade Point Average (CGPA) score. The findings also feature in the mandatory section of the Annual Quality Assurance Report (AQAR) which forms a part of annual submission for NAAC.

5.2. Plan@Earth and 'Green Audit':

No set format is available to conduct the 'Green Audit'. As of today, there is no certifying agency that standardizes the 'Green Audit' process. It emerged from the discussions with Plan@Earth team and subject experts that most of the educational institutions outsource the 'Green Audit' exercise to independent

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In this context, Plan@Earth felt that they have got sufficient experience and expertise to provide 'Green Audit' services. This competency could be leveraged by them to venture into providing the service at a cost. Additionally, in Cochin, Plan@Earth is well recognized for providing waste management solutions to educational institutions. For instance, educational institutions sold their waste to Plan@Earth and earned revenue. Subsequently, Plan@Earth recycled the paper and plastic waste to create new utility products, canteen waste was recycled by composting, scrap items were sold to scrap dealers and only non-biodegradable waste was sent to landfills (see Figure 1). As Plan@Earth helped educational institutions to generate revenue through their waste management solutions, it felt that the probability for hiring them for providing 'Green Audit' services as well as Solid Waste Management solutions was high.

Figure 1
Waste Management by Plan@Earth

Source: Designed by Authors

5.3. Feasibility of 'Green Audit & SWM' service:

Waste management is a growing issue in Kerala, hence, Plan@Earth has a huge market to cater. The feasibility of providing 'Green Audit & Solid Waste Management' (SWM) service through a fee based business model was analyzed with the help of SWOT and PESTLE. The SWOT analysis indicated that the package of SWM solutions was already a part of Plan@Earth's core competency and required minimum investment for initiation. Currently there are no government or third party regulations in the area of 'Green Audit', hence the barriers to launch the service are minimum. As many educational institutions in Cochin, undergo NAAC accreditation, 'Green Audit' was one of the mandatory requirement under the process. This provides an avenue to Plan@Earth to promote its services to educational institutions.

For any educational institution, associating with Plan@Earth for a yearly service of 'Green Audit & SWM' would give a boost to their image and bring in a competitive edge. This would enhance the credibility of the institution and build a long term relationship with key stakeholders like the education board, environmental organizations, placement companies and so on. The subscription with Plan@Earth would ensure effective solid waste management system in the organization and generate revenue for the institute.

While there were a couple of opportunities which indicated the feasibility of Plan@Earth designing the fee based model for providing its services, it realized that there were potential threat of new entrants in the market because of minimum entry barriers. To take care of this concern Plan@Earth would have to consistently review and revise its package of services to create value for its customers.

Based on the PESTLE analysis, it was identified that organizations that undergo 'Green Audit' are indicative of their being environmentally and socially responsible. The detailed analysis under each factor of PESTLE is represented in Table 1.

Table 1
PESTLE Analysis

POLITICAL:	ECONOMIC:
➢ No regulations on how to conduct 'Green Audit' ➢ 'Green Audit' is a part of NAAC and various other accreditations for educational institutions	➢ Economically viable as no initial investments ➢ Low cost involved in conducting the audit ➢ Audit findings can lead to new business ventures for Plan@Earth
SOCIAL:	TECHNOLOGICAL:
➢ Matter of rising social significance for all organizations ➢ Most organizations wish to undergo 'Green Audit' as part of social responsibility ➢ Image of Plan@Earth as an eco-conscious organization will improve its brand image	➢ Technologically integrated solutions for environmental concerns are coming up in the market
LEGAL:	ENVIRONMENTAL:
➢ All legal requirements already in place for recycling and upscaling. No additional legal requirements are needed for conducting 'Green Audits'	➢ Environmental solutions through 'Green Audit' can be beneficial for all stakeholders

For any educational institution, associating with Plan@Earth for a yearly service of 'Green Audit & SWM' would give a boost to their image and bring in a competitive edge. This would enhance the credibility of the institution and build a long term relationship with key stakeholders.

5.4. Financial analysis of the proposed package of service:

In the initial phase it was decided to offer the 'Green Audit' service for an annual fees of INR 10000/-. The revenue projections for Plan@Earth were worked out based on a couple of assumptions. For instance, it was assumed that if six educational institutions enrolled for the service in the first year, the revenue for Plan@Earth would be INR 60000/- per annum for the first year. Assuming retention of all the educational institutions and addition of two more institutions in the second year, the total revenue from 'Green Audit' service in 'year two' would be INR 80000/-. Hence revenue projections for 'Green Audit' over a period of five years would be INR 140000/- per annum (See Table 2 and Figure 2).

Table 2
Green Audit Revenue Projections

Year	No. of Colleges	Rate of Annual Fees	Total Revenue (INR)
Year 1	6	10000	60000
Year 2	8	10000	80000
Year 3	10	10000	100000
Year 4	12	10000	120000
Year 5	14	10000	140000
Total			**500000**

Figure 2
Green Audit: Revenue Projections
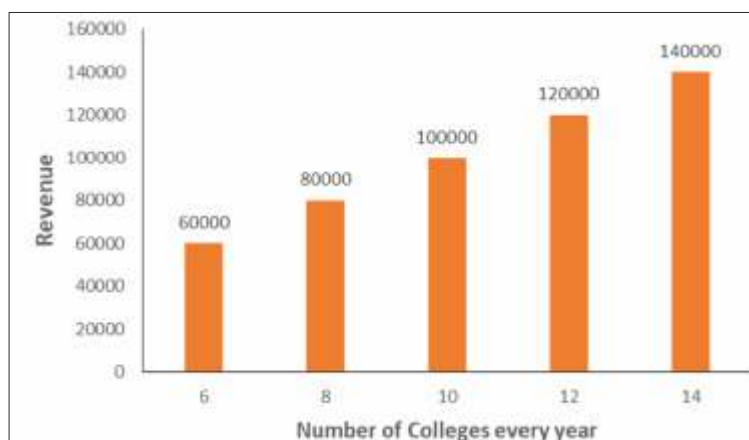
Source: Developed by Authors

To arrive at revenue projections from SWM solutions the following assumptions were considered: a) From the total number of educational institutions which would be engaged in 'Green Audit' service, it was assumed that at least 50 per cent would opt for waste management solutions i.e. three institutes out of six institutions would engage Plan@Earth in the first year. b) To calculate waste quantity estimation per institution, it was assumed that approximately 800 students would be enrolled per institute. Hence the waste generated would be proportional to the number of students in the institution.

The past revenue data based on the pilot conducted by Plan@Earth for dry waste collection revealed that INR 33000/- were generated for a college consisting of approximately 1000 students. Thus a revenue of INR 33/- per student was used for all further projections See Table3.

Table 3
SWM: Revenue Projections

Year	No. of Colleges	No. of students	Estimate revenue from SWM (INR)
Year 1	3	2400	79200
Year 2	4	3200	105600
Year 3	5	4000	132000
Year 4	6	4800	158400
Year 5	7	5600	184800
Total	-	-	**660000**

These assumptions were employed to derive that a revenue of INR 79200/- would be generated in the first year. It would rise exponentially every year parallel to the revenue generated from 'Green Audit' service. Consequentially, in the duration of five years, revenue from waste management would be INR 184800/- (see Figure 3).

Figure 3
Waste Management: Revenue Projections
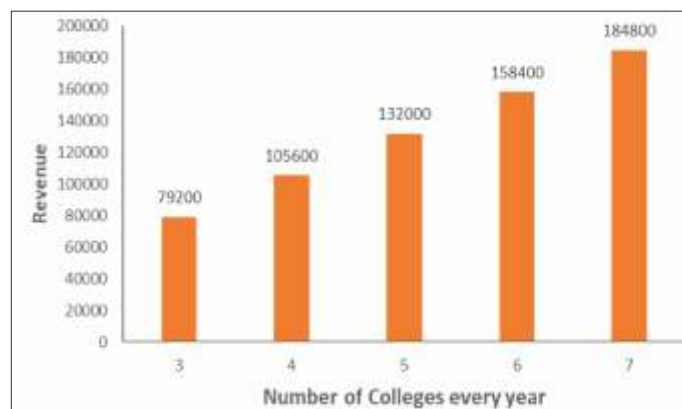
Source: Developed by Authors

Based on the projections, it was estimated that the package could offer a cumulated revenue of INR 11.6 lakhs over a period of five years (See Total of Table 3 and Table 4). With structured implementation, there is a high possibility of the service package being a promising source of revenue in the long run for Plan@Earth.

6. Discussion

Green Audit is an indicator of how organizations can perform better and show their commitment towards the society and mother earth. The measures which are identified through green audit, if implemented, can have a drastic impact by the organization on the environment. These measures are not only to achieve better scores or savings in terms of energy or cost, but to demonstrate social impact. It is particularly important for the students to see and learn, so that they can integrate it in their lifestyle. Students can be part of the ecosystem rather than being isolated from the system.

Currently, one of the biggest drawbacks of the system is that at many places awareness is raised and people are taught about the impact as well as measures of waste management but nothing is practiced or practically shown as an example to the people who are being taught or made aware of. Hence by creating these live examples, the organizations inculcate a sense of hygiene and sustainable living in the minds of the children which they can take up further in their workplace as well as their house and society. This is very important as this can change the mindset and attitude of people that waste management is not just the responsibility of the government bodies, rather it can be addressed through individual or organizational measures.

Hence the importance of 'Green Audit' through educational institutions can have a cascading effect on different spheres of life. Therefore, this is a matter that can be taken up across the

country by NGO's who are into environment protection along with support and incentives by the regulatory bodies for such initiatives. This can help to accrue the actual benefits of 'Green Audit' and can contribute for the behavioral change and transformation among younger generations.

7. Conclusion & Recommendations

The financial analysis made on the basis of revenue generated from the paper and plastic waste collected as a part of the package of services of 'Green Audit and SWM' gave a positive forecast. Kerela has more than 150 educational institutions which are NAAC accredited, and 'Green Audit' is included in section VII, of NAAC report which is a good incentive to enter into this market.

Plan@Earth should consider implementing this since 'Green Audit' in itself is in the early stage. This will give an early mover advantage in the market. Most importantly the proposed system fits perfectly into their core competency model. Provide potential access to a variety of markets (Accessibility), make a significant contribution to perceived customer benefits of the end product (Value-creation) and a challenging environment for competitors to imitate once Plan@Earth has captured the market (Uniqueness).

Considering all these factors it is recommended that Plan@Earth should go forward with the proposed service of 'Green Audit and Solid Waste Management'. The complete success of the venture resides with a massive attitude shift of the people involved. Though there are many challenges in the waste management and recycling industry but there is a lot of good work going on. There should be more organizations who should enter into this space. It must be ensured that this industry should be treated with proper support from the government as well as from the communities because ventures like this is the need of the hour to minimize the harmful impact caused by the society to the environment.

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Segregation at Source: Awareness Building for Waste Management

Abstract: According to World Bank, annual waste generation is expected to increase by 70 per cent from 2016 levels to 3.40 billion tonnes in 2050. Residents in developing countries, especially the urban poor, are more severely impacted by unsustainably managed waste as compared to developing countries. High amount of waste is often disposed in unregulated dumps posing a threat to building sustainable cities in low-income countries. Effective waste management is expensive, often comprising 20 to 50 per cent of municipal budgets.

To address this issue, organizations like Saahas Zero Waste (SZW) works with the municipalities on solid waste management by practicing segregation at source. The current article describes the methodology of a pilot project devised by SZW on the principle of circular economy to spread awareness about solid waste management (SWM) amongst students across government schools. The article evaluates the effectiveness of the IEC content in three cities and collates feedback for improvement. SWZ was provided with recommendation for scaling up by forming tie-up with corporations, local NGOs, urban local bodies and housing societies in various capacities. This article is an outcome of Mr. Karthik BM's and Ms. Soumyashree Priyadarshini's 'We Care: Civic Engagement' internship with SZW in February, 2018.

1. Introduction

Solid waste management refers to the process of generation, storage, collection, transfer, transport, processing and disposal of waste such that it is in accordance with the best principles of public health, economics, engineering, conservation, aesthetics, and environmental considerations. It is a necessary service provided for the protection of the environment and public health and to promote hygiene, recover materials, avoid waste and reduce waste quantities, emissions and residuals (Park & Singh, 2018).

As cited by Swaminathan (2018), according to Press Information Bureau, India generates 62 million tonnes of waste every year. Only 60 per cent is collected and around 15 per cent is processed. India's landfills rank third in terms of greenhouse gas emissions due to burning of garbage affecting human health, land and water. India's waste dilemma presents social and environmental challenges for urban local bodies (ULBs) and has significant effects on health. Due to urbanization and industrialization, the daily waste generation will reach 377,000 tonnes by 2025 (Park & Singh, 2018).

As cited by Park & Singh (2018), South Korea generates around 53,000 tonnes of MSW per day which is two to five times larger than that of India. Having the world's most sophisticated waste management system, despite rapid industrialization during the past 50 years, the country has been able to reduce MSW by 40 per cent. During the same period it has shown fivefold increase in Gross Domestic Product (GDP).

1.1. Scenario in Bengaluru:

Most Indian cities are surrounded by hills of garbage. For instance, a city like Bengaluru which has brought great economic prominence to the country is unfortunately paying a heavy price for its growth and success due to the ever increasing waste. Piles of garbage have accumulated in the city due to unplanned rapid urbanisation and the associated steady increase in solid waste generation. Lack of source segregation, financial resources and technical expertise has made it challenging for the ULBs or municipalities to achieve a sustainable centralised scheme (Ramaswami, 2017).

Presently, 6,500 tonnes per day (TPD) waste is generated in Bengaluru Metropolitan Area (BMA). Of the total waste generated, 5,757 TPD is contributed from the Bruhat Bengaluru Mahanagara Palike (BBMP) limits (B. R, 2017). As cited by Joshi & Ahmed (2016), Bengaluru can handle the municipal solid waste of only about 2100 TPD which is collected and treated. This implies that only 32 per cent waste is treated and remaining is left untreated. This has led to development of illegal and unauthorized dump sites in the city. The waste produced by the bulk generators like hotels, restaurants, markets and so on, is being directly collected and transported to the treatment/disposal facilities.

Presently, the BBMP is vested with responsibility of collection and disposal of solid waste, with a series of approaches such as involvement of citizen, investment in infrastructure and

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technology, as well as monitoring the various systems that are involved in managing waste. The BBMP has assigned the primary and secondary collection and transportation activity to Self Help Groups (SHG's). Annually, about 250 crores is spent on solid waste management (BP and PV, 2016).

Based on experiences and observations globally, apart from the efforts by the authorities, a behavioural change at the individual level is paramount to tackle the disturbing issue of waste management. "To overhaul the waste management sector and induce the necessary behavioural change, citizen participation and engagement is the key" (Swaminathan, 2018). Consequentially, various organizations in the country are designing initiatives to advocate the issue and bring about behavioural change. Bengaluru based, Saahas Zero Waste Pvt. Ltd. is one such organization, which is working towards the vision of zero waste by creating consumer awareness.

2. About Saahas Zero Waste Pvt. Ltd. (SZW)

Genesis of SZW traces its origin to Saahas NGO based in Bengaluru. Registered in 2001, Saahas is a non-profit organization working in the field of waste management (Saahas, n.d.). In 2013, Saahas registered it's for profit arm to scale up its operations. SZW works on the concept of circular economy where all waste is converted into resource (see Fig. 1) (Saahas Zero Waste, n.d.).

Figure 1
Circular Economy
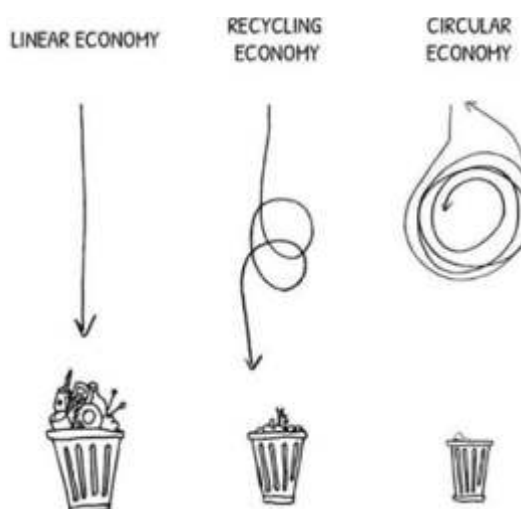
Source: Aerocircular

SZM collects and processes waste from corporate offices, residential apartments, manufacturing facilities, schools, hotels, hospitals and events across Bengaluru and Chennai.

Waste Collection and Segregation at a Marathon Event in Bangalore

The company recruits mostly women from very poor and marginalized backgrounds, and provides formal training and employment in the waste management sector (Saahas Zero Waste, n.d.). The major verticals include waste audit, waste consultancy, training, onsite waste management, paper shredding and sustainable construction projects. It also has offsite model of waste management called as 'Kasa Rasa' model where waste is collected from a location, transported to the nearest hub and recycled (Saahas Zero Waste, n.d.).

2.1. School Awareness:

The concept of circular economy promoted by SZW starts with waste segregation at source for recycling across all organizations and events. SZW believes that to promote segregation at source, there is a need for mass awareness. SZW achieves this by designing interventions for awareness generation among different age groups. For instance, the Coca Cola 'Support My School' (SMS) program aims at creating this awareness right from school level. Secondary school students are taught about waste segregation and recycling through simulation. IEC material in the

The company recruits mostly women from very poor and marginalized backgrounds, and provides formal training and employment in the waste management sector.

form of games, posters, information booklet and role plays are designed by SZW to empower school students for practicing waste segregation at source.

2.2. IEC Content

To make waste management education easy by adding a fun element, SZW designed IEC material as elucidated in Table 2 at the end of the article.

3. Project Focus

The IEC material of SZW was a unique tool to encourage waste segregation at source and was in the development phase during the internship period. The We Care interns were initially required to support in finalizing the IEC content as it was to be tested on school going students from Kannada, Telugu, Tamil, Hindi and English medium schools. The feedback received from the pilot testing of the IEC material was planned to be used for further refining the content to make it more effective and understandable in simple language. Hence, the We Care interns were assigned the task of conducting the pilot run of the IEC content and document feedback for improvising the same. The objectives of the assignment were:

- To support in designing of IEC content for spreading awareness on Solid Waste Management (SWM) among school students in five languages.
- To test the effectiveness of IEC content on students across seven government schools in Bengaluru, Chennai and Hyderabad.
- To collate the feedback received after the pilot test and make necessary changes in the IEC content.

4. Methodology

To achieve the above objectives, interns interacted with the team at SZW to get clarity on the project, the target audience, details of IEC content and so on. The interns decided to support the ongoing process of IEC development to gain a first-hand experience of implementing the same.

The IEC material's effectiveness was tested in seven selected schools across three cities that came under the purview of the two partner implementing organisations (See Table 1 below).

Table 1
Details of schools selected for Pilot test

S.N.	Name of the School	Partner Implementing Organisation	Location			Total No. of Students
			State	District	City/Town/Village	
1	Panchayat Union Middle School	Rural Education and Action for Liberation(REAL)	Tamil Nadu	Thiruvallur	Melmanambedu colony & Mothirambedu	260
2	Govt. Girls Higher Secondary School		Tamil Nadu	Thiruvallur	Keelmanambedu colony & Sivalingapuram	934
3	Zilla Parishad High School (ZPHS) Ameenpur	Association for Promoting Social Action (APSA) _ HYD	Telengana	Sangareddy	Ameenpur	179
4	Zilla Parishad Girls High School (ZPGHS) Patancheru		Telengana	Sangareddy	Patancheru	271
5	Thimmareddy Government High School, Beratana Agrahara	Association for Promoting Social Action (APSA) _ BLR	Karnataka	Bangalore Urban	Agrahara	570
6	Government High School, Begur		Karnataka	Bangalore Urban	Begur	495

The IEC content tested two components: a) content comprehension by students and b) learnings or key takeaways from the same. Depending on the type of activity (individual/group), interns planned to divide the students into small groups for participation and discussion.

All the limitations and restrictions in implementing the IEC content were documented.

5. Findings and Analysis

5.1. Designing of IEC Content:

The IEC content consisted of games such as; carrom, stump the right bin, monopoly, puzzles and so on. To make the contents more feasible and attain its objectives, the interns contributed

to the development of IEC content (see Table 2 at the end of the article). For instance, a glossary was developed and incorporated in the waste management information booklet. The words which could not be understood by school going children between 6th to 10th grades were defined in a simple manner. Changes in the carrom game, were introduced to facilitate understanding of waste management terms and actions.

5.2. Testing IEC Content:

The games were pilot tested at seven schools spread across Bengaluru, Chennai and Hyderabad. Interns with the support of SZW team conducted the first pilot at two schools in Bengaluru selected by SZW's partner Association for Promoting Social Action (APSA). Two groups of students were administered the games. Although students belonged to Kannada medium, their comprehension of English used in the content was fairly impressive. It emerged that the students had trouble understanding the content in the posters. Short session was conducted on types of waste, importance of waste management and ways to segregate waste at school and at home. Post session, feedback was collected.

Based on the feedback, the contents were revised. The revised IEC material was tested at two schools in Hyderabad in association with APSA. The Zilla Parishad Girls High School (ZPGHS) in Hyderabad had an eco-club comprising of students from 6th to 10th grades. The games were tested with the student members belonging to various grades of the eco-club. It was observed that students belonging to 6th and 7th grade found it fairly difficult to comprehend the content even in Telgu language compared to students of 8th and 9th grades. The session provided guidance to the students on their role in the society as an implementer and influencer for following best waste management practices.

Orientation and Playing Monopoly at Zilla Parishad Girls High School, Hyederabad

The next set of two schools in Chennai was selected by SZW's partner, Rural Education and Action for Liberation (REAL). Both Tamil and English versions of the content were introduced to the students in these schools. The content in Tamil was comprehensible, but, the students found it hard to understand the same in English.

Playing Puzzle with students

5.3. Observations on IEC Content

It was observed that students at all the schools enjoyed playing the games and quickly grasped the waste management concepts. They found the posters very attractive and informative. They were surprised to learn about the extent of time taken for decomposition of various materials and its impact on earth, through the posters.

However, it was found that students across the three locations were unable to comprehend some terms like toxic, land eco-systems, landfill, disposables, inhaling, non-recyclable packaging and a few others The content designed in English was found to be difficult because children were not comfortable with the language.

The observations collated by the interns across all the locations were discussed with SZW's team and appropriate revisions were made to the IEC material. To check its further applicability on the target audience, the games were re-tested at SZW's office.

6. Discussion

Various government, non-government and private agencies are working on developing solutions to attack the increasing global concern of SWM. Circular economy is the underlying principle for most of the interventions where all waste is converted into resources.

Since the attitude formation and building up of the belief system begins at young age while children are in school, Saahas Zero Waste is implementing the 'Coca Cola Support My School' programme in

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schools. The programme promotes the concept of circular economy with the pre-assumption that behaviour change, if initiated at young age, leaves strong impact on the individual and society at large. The programme aims at developing SWM practices via simulations in a non-threatening manner where in the students have the freedom to learn at their own pace without affecting their academic score. It has been observed that such learning environment enhances knowledge gain. Students carry the information home, discuss it with their families and in their neighbourhoods. This has percolation effect. The discussion and interactions at the school helps children to formulate and revise their belief system. As children are in an attitude formation stage they are open to new exposures and ideas. For crystalizing favourable attitudes towards waste management it is important that children observe symmetry of waste handling practices followed at home and in the community.

The 'Coca Cola Support My School' programme is in alignment with 'Swachh Bharat Abhiyan' to achieve the objective of generating awareness and creating behavioural change regarding healthy sanitation practices.

Every school where the programme was piloted is under the purview of an NGO partner. Bandwidth of SZW being less, tying up with local partners having similar vision towards societal development helps in percolating the practices to larger population. The respective NGO partner staff facilitates the simulations in schools. Lack of clarity among staff regarding the subject matter and the IEC content on certain occasions resulted in confusion during the sessions. Hence 'Training of Trainers' plays an important role in communicating important messages.

The objective of SZW was facilitating learning through fun elements. However, as students were nurtured in competitive environment the displayed competitive behaviour during the course of playing games and were more engrossed in gaining points and winning rather than focussing on the learnings. This implies that competitions often have a drawback of missing out on the knowledge gain while trying to win. If the games are played with the spirit of learning reinforcement, then it may have larger retention capacity, albeit if they see practical application of the same.

For crystalizing favourable attitudes towards waste management it is important that children observe symmetry of waste handling practices followed at home and in the community.

In the current project the practical utility of the knowledge gained was an area of concern. To facilitate application of knowledge students were encouraged to utilize and implement the learnings outside schools in their daily lives by practicing segregation at home and leading by example. They were encouraged to influence their parents and the neighbourhood about waste 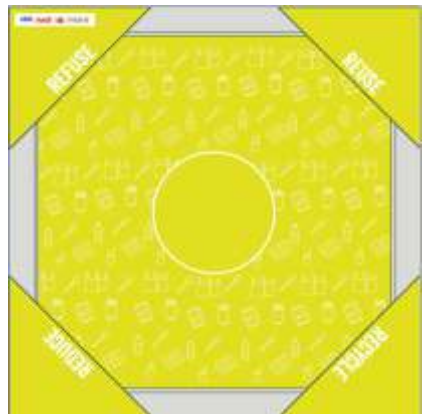segregation at source and benefits of waste management. As the society has various stakeholders that play a role in its upkeep and maintenance, children are only one of the many stakeholders. Hence besides influencing children, other stakeholders like the parents, families, community, local authorities and government also needs to be influenced to accelerate social change.

SZW requires to develop ways for advocating the cause with the policy makers and municipal authorities on waste handling practices. This will lead to development of directives in the area of waste management to facilitate the development of circular economy.

The organization should use its existing brand image and credibility to engage with the communities for adopting a change in behaviour towards waste handling by engaging into downward marketing for developing a circular economy. To sustain community sanitation, along with engaging students at the school, it is crucial for SZW to develop community level interventions to gain long term impact.

It is also the duty of the citizens to cooperate and actively participate in such initiatives for a cleaner and better India. Growth in India's population is gradually stagnating, but it is still huge. This means a proportionally large amount of economic activity and a proportional increase in the waste generated. This gives rise to a bigger need for spreading awareness among the population and hence Saahas has to expand geographically. The expansion will further create a need to optimize its operations for waste segregation.

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7. Conclusion and Recommendations

Saahas Zero Waste is currently at a nascent stage having operations which are less streamlined. Nevertheless, the social

enterprise has been growing consistently and quickly over the last few years. It has a huge scope for creating value and impact in the society consequentially gaining support from increased number of corporates. SWM being a rising social concern, companies realize the problem of waste disposal and tend to support such initiatives through their CSR activities even if it comes to them at a cost. Moreover, involvement of companies with socially conscious organizations helps them create goodwill among their customers.

Currently, SZW is based in Bangalore and caters to IT parks and large residential areas only. To create larger impact, the operations can be scaled to other public places such as shopping malls, bus stands and railway stations although it is easier to operate in a closed environment with limited population.

To achieve positive social impact through the 'Coca Cola Support My School' programme certain key features should be weaved carefully. Robust training systems should be developed for conducting training of trainers and regular follow ups in the language of instruction used by respective schools. Additionally, to create a circular economy, SZW should utilize its expertise to develop interventions customized for communities around the schools under the Coca Cola Support My School program. This will supplement the learnings of the children at school and aid in converting the minor influencers to major influencers. Local NGOs, urban local bodies, housing societies should be connected with the support of SZW for a specified duration. The handholding should gradually lead to periodic meets to resolve bottlenecks and finally SZW could exit leaving behind a robust structure for segregation at source and effective SWM.

Table 2
IEC Content developed by SZW

IEC	Image
Carrom: The Carrom Board is designed such that each of the four pockets correspond to either Refuse, Reduce, Reuse or Recycle. All the pieces are also labelled with names of different examples of solid waste. While playing the game, based on the pocket where the piece gets collected, short nuggets of information is provided about the theme of the respective pocket. Participants are required to perform an activity corresponding to the piece-pocket combination. For example, for a piece marked as newspaper, if pocketed in Reuse, would require the student to find ways in which newspaper can be reused.	

IEC	Image
Stump the right bin: The activity begins building a context with respect to waste management scenario in the country and engages the students in the habit of reading and analysing. The focus is on empathizing with the problem and spreading the awareness in the vicinity where the students live.	
Monopoly: The game has two parts; 1. The outer which talks about waste management and segregation. The points won or lost are decided based on the action mentioned on the board. 2. A city map is put in the center. The city is full of mixed waste and needs to be cleaned. Based on the task, the players need to clean the city. But like in the current scenario we don't segregate waste and throw most of the waste in the landfill. In this game, the players end up putting most of the waste in the landfill. Most of the recyclable and biodegradable waste goes to the landfill and soon the landfill becomes full. This leads to the end of the game.	
Puzzle: Student's knowledge about waste is assessed through this activity. The game is followed by a learning session about nature's cycle having no waste and the role of humans of contributing waste and its hazards to mother earth.	

IEC	Image
Posters on Waste Segregation, Recycling and Waste Management: Attractive posters designed to communicate each of the above messages acts as easy recall for practicing waste management in day-to-day life.	
Waste Management Information Booklet: A booklet of 46 pages covers detailed information about Solid Waste Management practices.	
Role Playing: Each student is given a card containing names of elements like land, water, air and the impact created on them due to inappropriate solid waste disposal. The students are then encouraged to read and play the roles of respective cards in the form of a group discussion.	

IEC	Image

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Potable Water: Case of Spring Health Water India

Abstract: *In India, currently, safe drinking water kiosk companies operate almost exclusively in high-density peri-urban and large rural villages. In rural areas, the hand pumps provided by charities and governments have proven unsustainable.*

The current paper highlights that 80 per cent of the 400 million rural people in Eastern India have limited access to safe drinking water and instead consume water laden with fecal bacteria. As villagers live in hamlets of 100 to 300 households, they are too small to be viable for most of the water kiosk companies in India for setting up a business of providing safe drinking water. The paper examines the business model designed by Spring Health Water India which provides safe and affordable drinking water to more than 250 villages of Odisha through a radically affordable, decentralized delivery system. As the organization proposes to scale up its reach and bring an attitudinal shift in the minds of the consumer, the efforts made to redesign the marketing contents are described in the paper. A few recommendations in the business model are also proposed in this direction. The paper is an outcome of Ms. Visakha Agarwal's 'We Care: Civic Engagement' internship with Spring Health Water India in February, 2018.

1. Introduction

Sustainable Development Goals (SDGs) are a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity (Undp.org, n.d.). Water, is the 'Blue Gold' of the 21st Century. Being at the core of sustainable development it is a precondition for human survival as well as accelerating socio-economic development. As the global population grows, there is an increasing need to balance domestic and commercial demands on water resources. Two thirds of the world's population currently live in areas that experience water scarcity for at least one month a year (Mekonnen and Hoekstra, 2016). Clean water is a basic need. Its dearth can impact health, food security and livelihoods of families across the world. Against this backdrop, SDG 6 aims at promoting availability and sustainable management of clean water and sanitation. The goal commits to address the quality and sustainability of water resources worldwide (Soni, 2018).

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At 1.3 billion, India is the second largest populated country in the world. It is expected to have a population of 1.7 billion by 2050 (Hawthrone, 2018). WaterAid report (2016) ranked India among the worst countries in the world for the number of people without safe water. India's major dependence on groundwater has resulted in over-extraction which is lowering the water table and adversely impacting drinking water supply (Sethi, 2017). Emphasizing the water scarcity in the country, Lal (2018) highlights that in 2016, 340 districts of India faced acute drinking water shortage due to a high stress on country's fresh water and surface water. The country is exposed to further vulnerability as temperamental or seasonal rains lead to unpredictable circumstances.

There is an absence of serious and sustained attempts at the central or state levels to manage water quantity and quality resulting into contamination of water. According to the State of the World's Water Report (2017), 63.4 million people in rural India i.e. seven per cent of the rural population, do not have access to clean drinking water. Though by 2011, 95 per cent of India's rural population had access to some form of water supply infrastructure, in reality, many systems were not functional as people lacked ownership of the infrastructure and social capital to conserve the same (WorldBank.org, 2016). Consequentially, 70 per cent of India's water supply is contaminated. Nearly 600 million Indians face high to extreme water stress and about 2,00,000 people die every year due to inadequate access to safe water (WRI Aqueduct as cited in NITI Aayog's study,2018, p 15). Nearly two lakh child deaths are observed due to diarrhoea in the country due to water contamination (In.one.un.org, n.d.).

Universal access to safe drinking water still remains a goal to be achieved in India. The need for drinking water is ever increasing with sources remaining constant and population increasing several folds. The constraints faced by the governments in supplying safe drinking water to their citizens has paved way for social enterprises like Spring Health to design market based innovative solutions to offer potable drinking water to the people at the bottom of the pyramid.

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2. About Spring Health Water India

Spring Health Water India was founded in 2010 by Paul Polak, with the aim of providing safe drinking water to the rural masses of Eastern India at an affordable price. It utilizes an innovative point-of-sale purification and distribution model to cut costs to make water affordable (PaulPolak.com, 2017).

2.1. Business Model:

To set up water purification plant in a village initially, baseline survey is conducted. The survey indicates size of the village, product demand and spending capacity.

Water at each plant location is collected from a water source like tube well and collected in a water tank. An average water tank stores about 3000 litres of water and is directed to the purification tank, which stores 1000 litres of water. A three step purification process is followed, of which electro-chlorination forms an integral part. The chlorine for electro-chlorination is also produced by Spring Health. Electro-chlorination plants cost $250 to install and produce chlorine to sanitize 80,000L of water per day (PaulPolak.com, 2017).

The sustainability of Spring Health is because of its systematic approach. For instance, the scout team identifies the opportunities for expansion. The build team constructs new water kiosks, the marketing team drives sales and social marketing activities and the local involvement in Spring Health operations sustains the business model. The business associate, who owns the well, hosts the filtration system and ensures water is delivered by someone from the village itself. The sales executive in charge of multiple villages visit each business associate once every two days to deliver chlorine, disinfect the water and gather usage and quality data. The day-to-day operations of providing water are ensured by the business associates, the delivery person and the sales executives (Makkar, 2013).

2.2. Distribution Model:

The operations are divided into units of 50 villages. Each of which has a chlorine production site (electro-chlorination point) and is overseen by a sales manager. Within this unit of 50 villages, the sales manager oversees 5-10 sales executives who are responsible for ensuring the operations of up to 10 villages each (Haldimann, Erismann & Graser, 2018). The sales team undertakes door to door awareness drive for three days in order to enrol the first batch of customers. The distribution of water follows a decentralized hub and spoke model, ensuring last mile connectivity through doorstep delivery of water cans every day. The water is stored in 10 or 20 litre containers that are home delivered on a daily basis by three-wheelers (auto rickshaws or tuk tuks). Ideally people pay for their water with prepaid cards. Each village has a business associate (the franchisee) who provides the water source, oversees delivery, collects payment and aids in sales. Local village entrepreneurs are roped in to set up plants based on

franchise model. The franchise model ensures better expansion and client feedback (PaulPolak.com, 2017).

Spring Health sells the purified water at 0.20 paisa per litre with an additional 10 to 30 paisa per litre as delivery charge based on the distance. Hence a family of five is able to suffice their drinking water need at the cost of INR 2/- to 5/- (Springhealth, n.d.). For instance, the ten-litre jerry cans with the purified water is priced at INR 4/-. The cans are stored in the local shops and customers can carry it to their homes. The shopkeeper earns a 25 per cent margin on bulk sales of safe drinking water, and Spring Health receives the rest. On a sales of 1000 litres/day, shopkeepers receive INR 50/day. Currently more than 70 per cent customers opt for home delivery and are willing to pay for it. Customers pay an extra INR 1/- for the home delivery for the 10 litre jerry can (Makkar, 2013).

2.3. Impact:

The organization currently has plants supplying water to over 250 villages in rural Odisha. On a daily basis Spring Health reaches out to approximately 30,000 households from the middle and low income groups having household income in the range of $60 to $200 per month. As on January 2017, Spring Health achieved 18 per cent market penetration for the offered services. It provides water to the poorest populations as well as to the rural middle class.

Spring Health data shows that on association with the organization, the local entrepreneurs achieved 50 per cent increase in their earnings. 600 new jobs were created. There was 29 per cent reduction of stomach ailments and diarrhoea among Spring Health customers.

The process adopted for water purification is environment friendly as it uses solar panels for purification process, gives out zero effluents and incurs no water wastage. Spring Health has got certified carbon credits for their operations which have been sold to generate a significant additional revenue stream for Spring Health to scale up (Agthoven & Ernes, 2018).

On a daily basis Spring Health reaches out to approximately 30,000 households from the middle and low income groups having household income in the range of $60 to $200 per month.
The data further shows that on association with the organization, the local entrepreneurs achieved 50 per cent increase in their earnings. 600 new jobs were created. There was 29 per cent reduction of stomach ailments and diarrhoea among Spring Health customers.

3. Project Focus

Spring Health began its operations in Bhubaneshwar and nearby villages. It gradually started spreading awareness about the importance of clean drinking water and initiated its sale of treated water to semi-rural areas. The organization intends to create a positive impact on the health and livelihoods of over five million people in five years.

Presently, people were unaware about the adverse effects of unsafe drinking water. They were not comfortable to pay for drinking water when they could avail it for free from natural resources. Spring health was trying to generate consciousness regarding clean drinking water and imbibe the habit of drinking treated water on a regular basis.

The organization desired to develop its brand as a sought after solution for clean drinking water across Odisha and nearby states. In this context it desired to increase the market penetration from the current 18 per cent to 30 per cent. As a result, the We Care intern was assigned the responsibility to develop marketing campaign for the same. Hence, the objectives of the project were:

1. To understand rural consumer buying behaviour in villages for purchasing Spring Health water
2. To modify existing marketing content and to culturally align it with rural psyche.

4. Methodology

In order to understand Spring Health as an organization, consumer behaviour and factors influencing buying as well as behaviour change among beneficiaries, the available secondary data was referred. Specifically, the documents pertaining to Spring Health's existing products, purifying technology, pricing and distribution model were studied. Secondary literature related to current drinking water needs of rural Odisha, models similar to Spring Health, such as the Sarvajal water ATMs by Piramal and white papers by renowned organizations such as Accenture and many other articles/journals were used to formulate an initial idea of rural marketing to the bottom of the pyramid. Discussions

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with the Spring Health team helped the interns to gather project insights.

To get a practical experience of the consumers at Odisha, it was decided to gather field data with the help of unstructured interviews with a few Spring Health sales representatives and consumers. The focus of the interviews was to understand consumer reactions and views on packaged drinking water provided by Spring Health.

The data collected by the intern was analysed using content analysis technique. The analysis gave a broad perspective for formulating future marketing content and marketing strategies.

5. Findings

5.1. Consumer behaviour:

The primary research helped in developing first hand understanding of the operations and consumer behaviour through field visits. Most villages covered under Spring Health experienced water scarcity during summers due to reasons such as no water supply from the government and drying up of wells, resulting in steep rise in the sales during summer months. Existing customers also consumed more water during summers than they did during other months of the year.

The interaction with consumers revealed that purchasing water influences the social status for people in villages. Villagers had a strong peer influence as it was observed that if in a neighbourhood, one family shifted to Spring Health water the behaviour would be replicated by others. The practice had evolved since they had an urge of upgrading their lifestyle as long as they could afford it. This behaviour was actively leveraged by the sales team to increase sales.

In rural market caste considerations are challenging. To avoid any conflict between upper and lower castes (who are often not permitted to share common water resources), Spring Health has started home delivery of water. The jerry cans stay with the customers, reassuring them that no one else has touched the

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water. For the company, it is a time-saving move, since customers are responsible for cleaning their own jerry cans (Kumar, 2014). It was further observed that semi-rural areas had easier acceptance owing to their better spending capacity and a larger educated population. Consequentially, they had better acceptance for shifting to Spring Health water. This implies that even if people are not aware about the effects of contaminated water on health they can become customers because of the status value of the water, especially due to the prestigious value attached by getting home delivery of water which is a true process innovation in rural villages. Home delivery is the very backbone and success factor of the Spring Health model.

5.2. Social Marketing: Redesigning Content

To scale there is a need for better social marketing activities. Hence there is need to modify existing marketing content. Using the existing content as reference, a translated version of the following material was created:

5.2.1. Pamphlet –This is the most widely used marketing material in Spring Health Marketing, as it is distributed to every household during door-to-door marketing. The pamphlet was modified to include communication that established direct relation of child's health with contaminated water used for drinking. This highlighted the importance of consuming safe drinking water (See Figure 1).

Figure 1
Pamphlets in local language
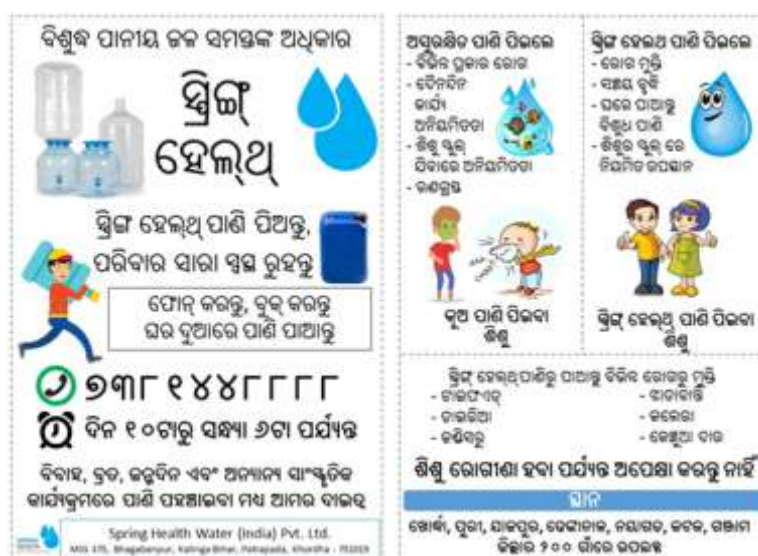
Source: Redesigned by the Author

5.2.2. Textbook – The Spring Health team distributed textbooks among students during the school awareness campaigns to drive consciousness regarding use of clean drinking water. For students of class 1 and 2, the textbooks are more visual, to facilitate their grasping. For those of

class 3, it has richer text and more emphasis on the kind of health ailments that are caused due to the usage of unsafe drinking water. The textbooks focus on driving the following conversations (See Figure 2):

• Presence of bacteria not visible to naked eyes

• Absenteeism at school owing to poor health, among a host of health issues

• Causes of water being unclean and hence unsafe for drinking

• Habits to be cultivated for a healthy life, besides clean drinking water

Figure 2
Images from the Text Book

Source: Redesigned by the Author

5.2.3. Door Poster – Post discussions with the Spring Health team, the idea of a door poster was born. This material was introduced to create a sense of pride among Spring Health customers in such a way that they subtly but visibly advocated the use of Spring Health water in their neighbourhood. This idea ensures influencing visitors at home throughout the year for Spring Health (See Figure 3).

Figure 3
Door Poster in Local Language

Source: Redesigned by the Author

5.2.4. Whatsapp Marketing – People's social capital is developed through whatsapp messages/videos. This could be leveraged to create awareness videos and messages that would be circulated among villagers. As the organization has the data of villagers they can send promotional messages through Whatsapp. This medium can generate a good word of mouth among villagers.

6. Conclusion & Recommendations

The market has several competitors to Spring Health like Naandi, Water ATMs, and Water Health International. However, the competitor models based on reverse osmosis and UV light purification methods require large population base and huge investment. The model adopted by Gram Vikas to set up piped water supply in partnership with the village community with government funding has not been scalable to thousands of villages as in the case of Spring Health having reached up to 250 villages in last few years.

As Spring Health aspires to increase market penetration by 30 per cent in the near future, it will have to review its business model and marketing efforts. Interactions with sales team confirmed that though there is potential for scaling up, doing business at the base of the pyramid has several challenges. Customers have low awareness as well as purchasing power. They are reluctant to pay for safe water, and the cost of doing business in rural areas is high. In order to overcome these challenges, Spring Health should consider price differentiation and product diversification to reach out to customers in different economic segments. It should effectively use women and teenagers to influence buying behavior and involve Self-Help Group women as distributors. It should carefully plan and design appropriate social marketing mix by undertaking below the line marketing activities like promoting its product through conducting more social activities that influence people through trusted persons. Word of mouth campaigns can be more effective to influence people socially. Along with this above the line promotion activities such as water testing melas can be conducted to demonstrate the quality of water and its impact on health.

> *Spring Health should consider price differentiation and product diversification to reach out to customers in different economic segments. It should effectively use women and teenagers to influence buying behavior and involve Self-Help Group women as distributors.*

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Epilogue

The literature reviewed on public health care reveals that there are four priorities for the Indian health-care system that need urgent attention: the availability of physicians, surgeons and para medical staff within the districts; the use of technology within the health system; out of pocket expenses borne by patients and community hygiene. Another neglected area in health is mental health. WHO study (2015) shows that one in five Indians may suffer from depression in their lifetime, equivalent to 200 million people. Because of the stigma associated with mental illness, poor awareness, and limited access to professional help, only 10-12 per cent of these sufferers seek help. If we focus on these issues and address them, we will make considerable progress towards our goal of building a stronger health system.

To address the issue of physical as well as mental health Business Management students need to understand that SDG 3 – Good health & Wellbeing is interlinked with 16 other SDGs. Challenges in the health sector as well as their solutions are interrelated. Students should be triggered to examine how across the world various organizations are translating value-based care into daily practice through meaningful product and systems innovations to meet the health demands of the population. Such exposures will enable developing more entrepreneurial ideas for designing holistic view of patient care journeys, integrating technology so that the care experience is seamless. For instance, to ensure curative healthcare to be affordable and widely available for the poor, there is need to shift towards providing value-based care: a drive for improved patient outcomes at lower cost and improving patient and medical fraternity experiences.

Students should be made to realize that healthcare should not be limited within the hospital walls anymore. A good place to start is by designing ventures for providing potable water, adequate sanitation infrastructure, ensuring access to clean and affordable energy, building safe and ecologically friendly cities, protecting ecosystems, and instituting sustainable consumption and production patterns. More emphasis has to be given to community hygiene and behavior change communication through programmes like Swacch Bharat. Business too has a huge opportunity to convert waste into wealth. Sanitaryware makers have got a huge demand for their business because of Swachh Bharat Abhiyan. Companies are investing heavily on spreading awareness about better hygiene products. The sanitation value chain offers a range of opportunities for private stakeholders to leverage for business.

Techno savvy students through their We Care internship also felt that health care should be connected to technologies which can enable new opportunities for better diagnosis and treatment of patients, at the right time and the right place. They saw that in many rural communities in India the distance to the nearest hospital or clinic makes healthcare inaccessible. These places often rely on community health workers (CHWs) to provide basic but essential services such as medication distribution and adherence. As liaisons between patients and the healthcare system, many CHWs spend countless hours traveling between the homes of patients to deliver care and then to the local clinic to file reports and restock their supplies of medicine. To overcome the challenges of isolation, students can study how other countries are addressing this issue. For instance, in Kenya CHWs having basic phones make use of Medic Mobile toolkit which is open-source software to send and receive patient data to healthcare facilities through SMS (text messaging), even in places with intermittent connectivity. Such exposures can assist our students to develop indigenous digital communications system so that communication, data gathering and health system management can all happen instantaneously.

To transform health systems, there is need of for MBA students it is important to understand that transitioning towards developing a more sustainable and resilient health system requires an integrated approach that recognizes the power of having greater collaboration between various sectors both at national and international level.

About the Jasani Centre for Social Entrepreneurship and Sustainability Management

The Jasani Centre for Social Entrepreneurship and Sustainability Management, NMIMS, has been established to execute social commitments of NMIMS University. The centre addresses social concerns through its comprehensive academic, training, research, and field interventions. Its interventions include contributions to the professional development of executives working for the social sector, capacity building for the resource poor and social entrepreneurship development. The centre supports a variety of curricular, extracurricular and career programs to provide MBA students as well as corporate executives with the tools and opportunities to engage effectively with the social sector. The centre offers a uniquely architectured MBA programme in Social Entrepreneurship which aims at developing a new generation of change makers/leaders who can create global social impact by combining passion of a social mission along with a business-like discipline, innovation, and determination.

As a catalyst and innovator, the centre's mission is to create a new generation of business leaders and social entrepreneurs who areknowledgeable about and are committed to create a sustainable society. The centre's objectives serve as a bridge between academia, the corporate world and the civil society organizations. The research, as well as the teaching strengths combined with the experiential learning approach and guiding principles of the centre, connect sustainability focused knowledge and research to students, businesses and the civil society organizations. The centre has increasingly been involved in research and providing consultancy in areas of management of social enterprises, CSR, micro-enterprise management, disaster management, impact assessment and conducting social audits.