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Last Mile Delivery
As India’s population, in particular its Bottom of the Pyramid (BOP) population has grown, concerns have been raised about the ability of the government and civil society organizations to extend services that will cover all the developmental needs for this section of the population. The sheer size of the BOP population poses a challenge to policymakers and creates a significant dilemma for those attempting to convert plans targeting this section to action. There are schemes that tackle every aspect: food security, subsidized fuel, housing, electrification, employment, infrastructure, amongst others. But there have been concerns over the inability of such schemes to reach the last rung of the ladder, and benefit the people for whom the schemes were laid out in the first place. The Last Mile Delivery issue is not merely a government challenge. Civil society organizations and the private sector are also grappling with the largely untapped potential of the masses both as human capital and consumers.

A Planning Commission study estimated that 83% of the funds allocated for development programs in India were used up by administrative costs. The Commission attributed this to the fact that 147 or so central government organized schemes were each being delivered in isolated systems to benefit largely the same set of people. Merging relevant schemes such as the housing scheme under the Indira Awas Yojana by the Ministry of Rural Development with the Total Sanitation Program run by another department by the same ministry have been unsuccessful. An adverse effect of the inability to merge the two schemes is that rural housing for the poor are being constructed without toilets.

Aadhar project and Direct Money Transfer:
The government has embarked on an ambitious project to provide unique identification using their biometric data. It plans to bring the entire Indian population under the system. This system will help the government and its relevant schemes directly connect with the last mile recipient. Known as the Aadhar project, it has included 210 million people in its biometric database so far.
The project will be connected to bank accounts opened for beneficiaries through whom the government will directly transfer cash to the poor who qualify for the subsidies in fuel, grain and fertilizer. By March 2014, the government plans to transfer Rs. 2 trillion or over USD 55 million in subsidies, 100 days of guaranteed work rural employment scheme and other welfare schemes. The government is hopeful that the system will help them plug leakages in the current indirect transfer systems, tackle graft, cancel out duplicate subsidy beneficiaries, thus saving 1% of GDP by reducing subsidies alone and also save on the currently high administrative costs by creating a direct delivery mechanism. The direct transfer system is also expected to reduce the burden on minority public sector stakeholders who incur losses as a result of levied subsidies.

In addition to fuel, fertilizer and grain subsidies, the government intends to transfer the wages of 50 million workers employed by rural employment schemes, pensions for 20 million senior citizens and 5 million education scholarships.

However, some preliminary issues have been identified such as bank accounts being opened without allocation of a UID and sporadic cash transfers. For instance, a pilot fuel project in Beelaheri in Rajasthan has seen a 7/8th drop in kerosene sales partly due to eliminating duplicate beneficiaries but also due to sporadic cash transfers in bank accounts. Moreover, beneficiaries resent having to lose a day’s wages in order to make a visit to the bank only to find out that the transfer hasn’t been made. Also having to pay market price, at three times the subsidized rate for kerosene is deterring beneficiaries who are buying cooking gas instead.

Moreover, the low rate of banking sector penetration in rural areas could pose to be a problem for the system. There are only 120,000 bank branches in the country. However mobile banking has significant potential for helping the system become a success given increasing mobile phone penetration in the country, including in rural areas.

E-Governance:
E-governance initiatives could have an impact on bettering last mile delivery of government services and programs to the poor sections of the population. In recent years, the Indian government has sought to both increase the number of services provided through mobile and internet platforms as well as increase mobile and internet penetration within the country, especially in rural areas. In the future, this will help millions of poor people access essential information and services through mobile and internet platforms.

Through the National E-Governance Plan (NeGP), the Government of India has set up various initiatives such as the Common Service Centre (CSC) and e-Panchayat. Under the Common Service Centre, through public-private partnerships (PPP), the Indian government plans to set up 100,000 information centers and kiosks across rural communities in the country. Through these CSCs, citizens can access video, voice and data services in fields such as education, agriculture and tele-medicine. CSCs are set up and operated through a 3-tier structure. At the level closest to the consumer is the Village Level Entrepreneur or VLE, then the Service Centre Agencies that will operate for between 500 and 1000 CSCs each, and final is the State Designated Agency (SDA) which is a government agency that will oversee CSC implementation across a whole state. As of 2012, 96,733 CSCs have been set up.
The e-Panchayat program is the computerization of the services and functioning of a Gram Panchayat, or the village council which is the most grassroots level of governance within the country. The program aims to create work stations at each panchayat in the country that is fully equipped to access the internet and communicate with government departments across the state and country. The program also aims to train government workers at the panchayat level to be able to use these facilities. The e-Panchayat model was highlighted in the July 2011 issue of Asian Horizons in the article ‘Increasing Reach of E-Governance’.

**Mya – A private sector rural supply-chain innovation:**

While the Aadhaar project and the direct benefit transfer scheme has groundbreaking potential for the government to deliver benefits to the genuinely needy of the country there are other kinds of supply-chain innovations and low-cost delivery mechanisms needed in the market. Mya, a private company specializing in creating supply-chain innovations, fills the need for such a supply-chain system that directly connects dairy farmers to the consumers in Karnataka. Mya has created a last mile supply chain network for dairy farmers and wishes to utilize it to break into other rural sectors in the future.

Beginning in 2005, Mya has been able to create a nexus of dairy farmers, collection centers, guaranteed purchases, distribution systems and financing accessibility. It has tied up with the Karnataka Milk Federation to ensure buyback of dairy. Moreover, it has helped dairy farmers avail microfinance by tying up with Unitus health insurance and cattle insurance tying up with ICICI Lombard, Life Insurance through ICICI Prudential and lending schemes through ICICI Bank. By 2013 end, Mya aims to establish 3425 milk collection centers and create 4793 jobs, helping over 870,000 dairy farmers over 20,000 villages.

**Rural Institutional Building:**

The National Rural Livelihood Mission (NRLM) is looking to mobilize and organize the poor into various institutional structures in order to meet the major challenge of having to deal with scattered and fragmented access to goods and services from a host of different providers in the private, public and civil society sectors. NRLM intends to bring together households through affinity-based thrift and credit groups especially for women. Such self-help groups at the village and higher levels, developed on a national scale, will serve as platforms which NRLM envisages as partners for local governments, public service providers and the private sector in order to mobilize social and economic services directly to the last mile. This is likely to help optimal implementation of pro-poor programs in the country.

**Healthcare:**

Increasing access to healthcare services in India is an urgent need that is being tackled at various levels within the country. India has only around 23000 primary healthcare centers in rural areas, despite there being more than 600,000 villages in the country. A study stated that at present, 31% of the population has to travel more than 30 kilometers in order to access health care.

World Health Partners (WHP) is an international non-profit organization that brings essential healthcare and reproductive health services to the poorest population in developing countries by making use of existing market forces and infrastructure to establish large-scale health networks.
The company aims to reach as many as 74 million people in 20,000 rural communities by 2014. In India, WHP works in the state of Bihar, one of the poorest and most populous states in the country. WHP has reached out to rural health practitioners, pharmacists, drug wholesalers, telemedicine clinics and diagnostic centers as well as ‘Last Mile Outriders’ who have been so termed as they are entrepreneurs who work as a last mile link to the poor consumer. WHP began a 5-year project in 2012 to tackle the issue of disease management by encouraging private sector engagement. The program’s ultimate aim is to increase diagnosis and detection of tuberculosis (TB), visceral leishmaniasis (VL), and childhood pneumonia and diarrhea by 15-20%.

Mobile 1000’s Medical Van

Other successful examples have been seen in medical facilities becoming mobile. The Wockhardt Foundation, the corporate social responsibility (CSR) wing of pharmaceutical company Wockhardt, has a Mobile 1000 initiative in India. The initiative operates numerous mobile medical vans that offer basic healthcare services in millions of Indians living in villages. Mobile 1000 aims to have 1000 vans in place by 2017 within the country.

Other NGOs and healthcare-focused foundations have also come up with similar initiatives, such as the SMILE Foundation, AmeriCares and Sankara Nethralaya.

Future:
Tackling the last mile delivery challenge may well prove to be the biggest step towards leveraging India’s rapid development and economic surge to aid the poorest sections within the country. It has been estimated that 590 million people will live in cities by 2030 and 200 million in peri-urban areas. It is anticipated that rapid urbanization will lead to increasing innovations in logistics and delivery systems to target the last mile. By overcoming issues of reach through actions such as accessing those living in remote areas, extending expensive services to those that cannot afford it and creating low-cost alternatives, it is possible that Indian governmental and civil service organizations may be able to help the country’s poor. However, significant impediments remain, especially in the form of the inadequate infrastructure, such as the lack of transport facilities. Unless these institutional gaps are filled, it is unlikely that programs aiming for last mile delivery will be completely successful.
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The Growth of Traditional Medicine

India has a pluralistic healthcare delivery system with traditional medicine systems such as Ayurveda, Unani, Siddha and Homeopathy existing alongside Allopathy. For a large section of the Indian population traditional medicine systems are often the primary source of healthcare. Millions belonging to poor communities across the country, who cannot afford expensive allopathic treatment, also rely on these systems.

Traditional medicine systems also offer financial relief to poor families considering the prohibitive cost of treatment for common ailments. There is also an inadequate supply of allopathic drugs in some parts of the country. The core strength behind the popularity of traditional medicine systems lies in their emphasis on preventative healthcare and treatments with few side-effects.

Today, Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homeopathy, commonly known by the abbreviation AYUSH, institutions across the country have approximately 62,000 hospital beds and over 7.85 lakh health workers. According to Department of AYUSH estimates, there are approximately a million village-based AYUSH community health workers. Many Ayurveda institutions treat patients for free. The Gujarat Ayurveda University, exclusively devoted to Ayurveda, treats approximately 1000 patients a month for free, many of whom cannot afford expensive treatment.

Over the last few years, there have been many initiatives made by the Government of India towards the promotion and mainstreaming of traditional medicine systems in India. If successful, these efforts are likely to expand the access to healthcare, especially in remote rural areas and provide options for impoverished populations who cannot afford expensive allopathic treatment. These efforts will also help preserve traditional healthcare systems in India for the future.

Role of Government

The Government of India has pushed to mainstream traditional medicine in the country. One of the ways this is being done is through the National Rural Health Mission (NHRM). Under the NHRM, traditional medicine is being made available to the people in the primary health network. Stress is also being laid on capacity building for AYUSH practitioners under national health programs such as Reproductive and Child Health, Safe Child Birth, School Health, Anemia Control and Malaria Eradication.

In 1995, the AYUSH healthcare sector received a boost when an independent department was set up for it. In 2003, this Department of Indian Systems of Medicine and Homeopathy, was renamed as the Department of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homeopathy (AYUSH)

In May 2012, the Ministry of Health announced that the creation of infrastructure for Central Drug Controller for AYUSH drugs had been approved. The aim behind this is to increase the
acceptability of these drugs by monitoring the quality and standardization. To ensure the safety and efficacy of AYUSH products available commercially on scientific lines, the Pharmacopoeia Commission of Indian Medicine has been set up.

The Government of India is interested in the integration of traditional medicine into the national healthcare system. In February 2013, representatives of the Health Ministries of 11 Southeast Asian countries, including India, attended a conference in New Delhi on traditional medicine. The conference was organized by the Department of AYUSH, Ministry of Health & Family Welfare, Government of India, in collaboration with WHO-SEARO (World Health Organization, South East Asia Regional Office) New Delhi. The aim of the conference was to exchange views for the integration of traditional medicine into the national health systems of these countries. At this conference, India also signed a Memorandum of Understanding (MoU) with Bangladesh for cooperation in traditional medicine for the exchange of health professionals, and research. India has also signed such MoUs with other countries like South Africa, Malaysia, and Trinidad and Tobago.

The Department of AYUSH plans to put together a comprehensive National Essential Drug List with both AYUSH and allopathic medicines. Efforts are also on to develop clinical management protocols incorporating AYUSH-based lifestyle guidelines for adolescent health, geriatric care, mental health, non-communicable diseases, anemia and nutrition.

The state governments have also tried to emulate the example at the central government level. The state government of Kerala is also planning to set up a Department of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homeopathy, similar to the one at the central government level. In 2006, the state of Haryana renamed its Ayurvedic Department as the Directorate of AYUSH. In 2012, the state government of Uttar Pradesh decided to link AYUSH with the National Rural Health Mission (NRHM), which will allow the hiring of AYUSH practitioners at district level to provide basic health facilities. AYUSH medicines will also be included in drug kits for ASHA (accredited social health activist) workers, and in drugs supplied to primary and community health centers. Under the NRHM, the community health center will also have 2 rooms for AYUSH practitioner and pharmacist. Single-doctor primary health centers will be upgraded to two-doctor centers by adding an AYUSH practitioner.

The above-mentioned efforts by the government to mainstream traditional practices are likely to have an impact on the poor communities across the country. This section of the population either lacks access to medical facility or is limited by the prohibitive costs of the existing medical facilities. The spread and mainstreaming of traditional medicine is likely to increase the access of these communities to healthcare. The setting up of standardized drug lists and production facilities could increase the supply of traditional medicines and drive down the costs.

Education and Research
At present, India has 504 AYUSH educational institutions which include 111 post graduate colleges. Approximately, 27,000 students are admitted to these colleges every year. There is also an increasing trend of foreign students coming to India for studying traditional medicine with the Government of India offering scholarships to these foreign students since 2005 to pursue
AYUSH courses. This has led to a surplus of AYUSH doctors in India with their absorption rate being as low as 5%.

With this in mind, the Government of India has plans to focus on improving the quality of AYUSH education and on emphasizing research. In order to develop nursing skills in AYUSH, the government is taking steps. In July 2012, the Department of AYUSH initiated a certificate course in AYUSH Nursing (Ayurveda) in association with the Indira Gandhi National Open University (IGNOU). The course was started for the development of nursing skills for improving the quality of care in AYUSH hospitals. Over the next few years, IGNOU also plans to start some certificate courses for Homeopathy and Unani.

The scholarships in place for students of AYUSH colleges are also being increased. The state government of Madhya Pradesh doubled the scholarship amount for AYUSH students in 2011 to bring it at par with that of medical students. For post graduate degrees, students are offered monthly stipends of Rs. 40000 – Rs. 50000 (USD 738 – USD 922) by Ayurvedic colleges.

As the quality of AYUSH education becomes better over the next decade, the demand for AYUSH doctors is also likely to increase, in turn creating more jobs.

Promotion of Clusters
In order to increase the production and supply of AYUSH medicines, the Government of India is promoting the setting up of AYUSH industrial clusters across the country. In April 2012, the Department of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homeopathy has approved 9 AYUSH medicine clusters in 8 states – one each in Kerala, Karnataka, Tamil Nadu, Odisha, Andhra Pradesh, Punjab, Rajasthan and two in Maharashtra. These industry clusters will act as common facilities centers for manufacturing and testing of AYUSH medicines. This cluster development project is based on a public private partnership (PPP) model and is likely to generate thousands of jobs.

Banks are also providing these clusters with required loans. In August 2012, Export-Import (Exim) Bank of India sanctioned a loan to the Traditional AYUSH cluster of Tamil Nadu Pvt. Ltd. (TACT). This loan will be used to set up common infrastructure facilities for AYUSH products in Tamil Nadu. TACT is a private company promoted as a (Special Purpose Vehicle) by the Department of AYUSH.

Role of Private Sector
Private sector companies working in the field of Ayurveda are also helping expand access to healthcare for the low-income populations. The Kerala-based group First Health Services Pvt. Ltd. has set up 6 Ayurveda hospitals (with a total of 150 beds) called ‘AyurVAID’ across the country. AyurVAID also has 2 AyurSEVA hospitals which offer a general ward format for the bottom-of-the-pyramid section of the population. With its latest center in the slums of Dharavi in Mumbai, it has
become the largest chain of Ayurveda hospitals in the country. Dharavi was chosen as it lacked a healthcare facility and is home to thousands of laborers working in poor working conditions who suffer from muscle and bone-joint problems. The investment firm Acumen has invested Rs. 4.5 crore in this project which is slated to be expanded across the country. While the AyurVAID facilities are catered towards the middle class, the AyurSEVA centers are focused on low-income population.

**Increasing Rural Access**
The use of Information and Communication Technology (ICT) to increase access to AYUSH medicine in rural areas is gaining momentum. In 2010, the Government Ayurvedic Hospital launched a mobile clinic service for the rural areas around Vadodara in the state of Gujarat. The state government of Gujarat provided Rs. 900,000 (USD 16,540) for this project. A van with 2 doctors, 2 interns, a nurse and staff visits selected villages thrice a week.

A successful example of telemedicine is the Jiva Telemedicine Center which was launched by an organization called Jiva Ayurveda a decade ago. This center has adopted telemedicine to make healthcare accessible to the rural population. The doctors belonging to Jiva Ayurveda see almost 6000 patients every day in over 1200 towns and cities; estimates say that 65% of these patients come from Tier III and Tier IV towns. In the future, Jiva Ayurveda plans to create a network of video-clinics across the country to enable video consultations.

Such efforts are likely to make it easier for rural communities to get access to healthcare, without having to resort to traveling to nearest cities to seek medical help.

**Digital Age**
In order to protect traditional medical knowledge from being misappropriated in form of patent bids by giant multinational corporations, the Traditional Knowledge Digital Library (TKDL) project was initiated in 2001 to document traditional medical knowledge pertaining to various traditional systems of medicine. The project is a collaborative effort between the Council of Scientific and Industrial Research (CSIR), the Ministry of Science and Technology and Department of AYUSH, Ministry of Health and Family Welfare. It involves an inter-disciplinary team of Traditional Medicine (Ayurveda, Unani, Siddha and Yoga) experts, patent examiners, IT experts, scientists and technical officers. The TKDL has information on traditional medical knowledge existing in India to make it feasible for patent examiners at International Patent Offices to prevent granting of wrong patents. This information is available in five international languages - English, German, French, Japanese and Spanish – in a digitalized format.

**Future**
In the future, such initiatives to strengthen the field of traditional medicine in India are likely to have positive implications, especially for the poor communities. The mainstreaming of traditional medicine systems, improving quality of AYUSH education and the standardization of AYUSH drugs may make access to quality healthcare easier for these communities. Linking AYUSH with the National Rural Health Mission is likely to increase the access of rural poor to healthcare. This may also be aided by the increasing use of ICT technology to get AYUSH medicine to rural communities across the country. The increase in number of production
facilities and the increasing standardization of AYUSH drugs is likely to drive down costs in the future, most benefitting the bottom-of-the-pyramid.

The promotion and development of AYUSH industrial clusters will boost the production of AYUSH medicines but it is also likely to generate employment for thousands. The private sector can get involved by acting as a bridge between traditional medicine practitioners and the people.

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