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Delivering Health Care in Rural India: ITC-CARE Experience

“Envisioning a larger societal purpose has always been a hallmark of ITC, described by me in the past as ‘a commitment beyond the market.’ We articulated a Vision appropriate to the Indian context, tailored around the deep rural linkages that characterize your Company’s value chain relationships. This compelling Vision of enlarging its contribution to the Indian society has powered your Company over the past decade. Such a Vision is manifest in multiple forms, significantly reshaping ITC’s profile.”

—Excerpts from a speech by Chairman Shri Y.C. Deveshwar, at the 95th Annual General Meeting, 2006

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February 12, 2009: S. Sivakumar, CEO of ITC’s Agri-Business Division, came into his office early, as he usually did, to give himself some time to reflect before a busy meeting schedule for the day. December-February was a hectic time for the senior leadership team at his division. All units were busy with meetings to lay out the strategy and supporting plans for the following year; it was the time of year when putting in long hours was the norm for everyone. Sivakumar was scheduled to present his division’s annual plans to the ITC board in Kolkata in two weeks. All other units had completed presenting their plans to him. The only one left was the health care initiative. Sipping his morning coffee, he pondered on ITC’s experiences in health care delivery thus far and the important meeting scheduled to start in an hour.

Building upon the success of the e-Choupal initiative for agribusiness and consistent with its vision of “improving the quality of life in rural India,” in September 2007 ITC had partnered with the CARE Hospitals group to deliver a comprehensive health care solution. With a “roll out, fix it, and scale up” approach that



Professor Ravi Anupindi of the Ross School of Business and Annapurna Chavali, ACCESS Health International at the Centre for Emerging Markets Solutions, Indian School of Business, prepared this case for the purpose of class discussion. We appreciate the support of S. Sivakumar and his team at ITC and Girish Babu of CARE foundation in providing us with detailed information. We would also like to acknowledge the support and contributions of the Rockefeller Foundation, Results for Development Institute, and all the team members working with Centre for Health Market Innovations (CHMI). A major part of this work was conducted when Professor Anupindi was a visiting scholar at the Indian School of Business from January-May 2011.

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had worked so successfully in the agricultural initiatives, they were confident that a one-year pilot in the Yavatmal district of Maharashtra would give them sufficient learning to scale the model across the country. Progress, however, had been slow, and sustainability appeared elusive.

That day's meeting with the CARE team of Dr. Krishna Reddy, CEO, and Girish Babu, program manager in charge, to discuss the progress of ITC-CARE lasted all morning. L. Prabhakar, vice president of human resources and special projects, and Ms. Kavitha, manager of rural health and education services for ITC, who was closely involved with the pilots, had also participated in the discussions. During the meeting, the CARE team made a fresh proposal to ITC for investments to fill gaps in the current implementation. These included rollout of a micro-insurance scheme for health and a handheld device for delivery and monitoring of health services.

Sivakumar had to make a decision. Should ITC reinvest in the partnership with CARE, explore alternate partners, or exit to explore other opportunities in the health space?

The ITC e-Choupal platform

The ITC group (www.itcportal.com) was one of India's largest private sector companies, with a market capitalization of approximately ₹ 146 billion (March 2009) and annual sales of ₹ 249 billionⁱ. ITC had a diversified presence in fast-moving consumer goods (FMCG), hotels, agribusiness, paperboards and specialty papers, information technology, and packaging. The Agri Business Division (ABD) of ITC, started in 1990, was headquartered in the southern city of Hyderabad, and exported agricultural commodities such as soybean meal, rice, wheat and wheat products, lentils, shrimp, fruit pulps, and coffee. As a buyer of the agricultural commodities, ITC-ABD faced the consequences of an inefficient farm-to-market supply chain. As the Indian economy liberalized, competition in the already low-margin commodities business intensified. It was imperative for ITC-ABD to rethink how it could create a sustainable competitive advantage in the farm-to-market supply chain of which it was only a part. In 2000, with a mandate to grow its agribusiness, ITC-ABD (hereafter referred to as ITC) embarked on an initiative, known as e-Choupal, to reengineer the procurement value chain using information and communication technology. The experiment had been extremely successful for ITC, and by 2009 the network consisted of more than 6,500 e-Choupals covering 40,000 villages and benefiting 4 million farmers in ten states of the country (**Exhibit 1**).

The e-Choupal platform (**Exhibit 2**) was a three-layered infrastructure that connected farms to markets. The first layer consisted of the village-level kiosks (or *e-Choupal*) housed and managed by an ITC-trained local farmer (called a *sanchalak*) located within walking distance (1–5 kilometers) of each target farmer in a cluster of five villages. This layer primarily provided relevant information and knowledge to the farmers at no charge. Each kiosk contained a computer with internet access, universal power supply with solar-powered battery backup, and a printer. The *sanchalak* was trained in computer usage, e-choupal website management, basic business skills, quality inspection and pricing of products, and product training. A respected and socially acceptable person of the community, he was the point person for all the agricultural-related information for the other farmers and also the key conduit for ITC to reach them.

The second layer consisted of a physical infrastructure (called *Choupal Saagar*) located within a tractorable distance (10–30 kilometers) of the target farmer and managed by a traditional intermediary with local knowledge/skills, called a *samyojak*. Because the infrastructure was initiated to facilitate procurement, it was located in close proximity of other channels available to the farmer, typically a few kilometers outside the main town. At the Choupal Saagar, the *samyojak* managed procurement and warehousing of commodities,

i ₹ is the symbol for Indian Rupee. ₹ 51 = 1 US dollar (March 2009).

assisted in the logistics of cash disbursements to farmers and helped facilitate transportation for farmers who needed them. The Choupal Saagar also housed a retail store that sold agricultural commodities as well as consumer goods, including packaged food, clothes, appliances, furniture, and other such items. Thus while the village-level e-Choupals provided information and knowledge, almost all economic transactions occurred at the Choupal Saagar. The Choupal Saagar infrastructure (**Exhibit 3**) was by design large enough to host additional revenue-generating activities. ITC's vision was to make the Choupal Saagar a one-stop for all requirements of the community.

Finally, the third layer orchestrated by ITC consisted of a network of companies that included users of farmers' produce (e.g., commodity buyers, food companies) as well as companies wanting to sell products and services to the farmers and other rural consumers. Together this three-layered infrastructure allowed ITC to provide a complete end-to-end solution to satisfy the needs of farmers and consumers at the village as well as national and global levels.

User experience with e-Choupal

Shyam is a typical soybean farmer in the village of Haidargang in Madhya Pradesh. Every year upon harvest, he takes a sample of soybeans to Ashok Jain, the sanchalak of ITC e-Choupal in the neighboring village, a 3 km walk from his house. Ashok was a well-respected person in the area, and Shyam felt comfortable going to his house for information and advice.

Welcoming Shyam, Ashok said, "How are you? How is your harvest?"

"By God's grace the crop is good this year," replied Shyam. "I have brought a sample for testing," he said, handing over the sample of soybeans he brought with him. Preliminary testing indicates that the quality is quite good. "How much would you like to sell to ITC tomorrow? They are offering a rate of ₹ 1250 per quintal."ⁱⁱ

"I would like to sell 20 quintals," replied Shyam. Ashok prints an authorization note showing name, date, and quantity. The next day, Shyam hires a tractor and goes to the Choupal Saagar located a distance of 15 km from his village near the town of Sehore. At the hub, his produce is quality tested and weighed automatically. After a wait of a couple of hours, the transaction is completed. Shyam collects the cash at the Choupal Saagar retail store where he also purchases clothes for his family, a new pair of shoes for himself, and diesel for the pump set in his field. He then returns home by midafternoon.

"ITC e-Choupal has changed my life. I get all the information I need right at the village. While I still have to travel the 15 km distance to sell my produce, all transactions are transparent and I get my full money and return home the same day. Before, when I sold at the mandiⁱⁱⁱ, I felt cheated by the traders and had to run around several times to get the full money due to me," commented Shyam.

Source: ITC

ITC, in addition, provided a host of agricultural services—some free (e.g., advice on use of pesticides), some at cost (e.g., soil testing services)—as well as some financial services (e.g., insurance). A farmer could also avail the advice of an agricultural scientist via email through the e-Choupal. While advice was dispensed

ii One quintal is 100 kilograms.

iii A mandi is a government auction house where farmers traditionally sell their produce.

at no cost, any recommended product (e.g., pesticide or fertilizer) was made available at the Choupal Saagar. The farmer had come to trust the quality of the product available there unlike the potentially adulterated product sold in the market.

ITC converged to this comprehensive model after several experiments across different crops, geographies, products, and services, whereby ITC would roll out a pilot, learn lessons, and validate the model before scaling it. “Our success comes from the fact that we first start with a system that is very similar to the one people are used to but make it better. This builds trust. We then enhance the experience by adding other services and products,” said Sivakumar.

Health Care in Rural India

With a population of over a billion, India was the second most populous country in the world. While the country had made significant economic progress, health outcomes as measured by key indicators—life expectancy (63 years), infant mortality rate (80/1,000 live births), and maternal mortality rate (438/100,000 live births)—had not kept pace. The situation in rural areas, where 65 percent of the population lived, was significantly worse (**Exhibit 4**).

The government of India had built an expansive three-tier public health system to serve the needs of rural India. The *subcenter* (SC) was the first point of contact entrusted with activities influencing the health-seeking behavior of the community, including maternal and child health services, family welfare program, immunization, diarrhea, nutrition, and some communicable diseases. Medicines for basic ailments were available at the center. The next tier was the *primary health center* (PHC) that provided a range of preventive, promotive, curative, and rehabilitative services. It also provided consultation, diagnostics, and medicines, as well as health education and delivery of national health programs, including awareness and treatment. Patients were usually referred to a PHC by the SC. In addition, PHCs acted as training centers for health workers who recorded vital statistics such as births and deaths as well as prepared epidemiological reports. The last leg in this three-tier structure was the *community health center* (CHC) that acted primarily as a referral center for PHCs for patients requiring specialized services, including gynecology, pediatrics, and minor surgeries. **Exhibit 5** gives details of the public three-tier infrastructure.

The public health network, while comprehensive, had several deficiencies. According to rural health statistics (2010), the country faced a shortage of 19,590 SCs, 4,252 PHCs, and 2,115 CHCs.¹ Inadequately staffed clinics, high rates of absenteeism and attrition, fixed operating hours, long waiting times, and shortage of drugs were some of the problems that plagued the government health system. Consequently, a rural patient more often sought the services of a private doctor.

Drug quality was another major problem as well. Accurate estimates of substandard and spurious drugs were unavailable, and media reports varied anywhere from 0.5 percent to upward of 35 percent of total sales.² Weak regulatory regimes, lack of adequate inspection capacity and enforcement, and widespread corruption were cited as some of the reasons for the quality control lapses. Even though the generic drug industry in India was developing rapidly to provide quality drugs at very low costs for domestic as well as export markets, these low-cost drugs were not yet reaching rural markets.

Private doctors in a village

A private doctor in rural India, often referred to as a registered medical practitioner (RMP), came in many flavors. Officially, an RMP was supposed to be a person who had been qualified by a recognized college of medicine to practice medicine. Unofficially, however, RMP often meant any person who had permission

to practice medicine. Up until the late 1960s, state governments granted registration to formal (including persons trained in alternative systems) and informal (apprenticed with a trained practitioner) providers in order to recognize and permit them to practice delivery of health care services in rural India. While informal providers had not officially been able to obtain registration for at least thirty years now, they continued to practice and formed the majority of service providers in rural areas. Consequently the term RMP had picked up the disreputable connotation of a “quack.”

Facing an ailment, rural patients tried one or more options including a) wait and watch, b) home remedy, c) self-medication, d) consult a private practitioner, and e) seek care at a government center. Several studies showed that seeking care at a government center was one of the least preferred options and visiting a private practitioner or waiting and watching comprised a majority of the choices.

While treatment-seeking behavior varied across states, studies had shown that upward of 80 percent of people in rural India sought out private practitioners (practicing western medicine), specifically for fever, respiratory ailments, diarrhea, gastrointestinal illnesses, cough, and skin diseases.³ Patients in rural India had predominantly preferred western medicines primarily because of the belief that it offered quick care and instant relief (as compared with traditional systems of Indian medicine like Ayurveda^{iv}). Government doctors expressed frustration with patient fixation for medications and a quick remedy.

“Most of the patients who visit the center are elderly ladies. They are illiterate and demand injections. We cannot give injections to every patient and for every disease. As such, they prefer to go to private practitioners, for whom an injection is a must for all diseases, and they charge them heavily. I do not know why village people consider medicines provided by us ineffective as compared to injections given by private doctors. The private doctors have a good time in villages.”⁴

Most private practitioners used very elementary diagnostic techniques and tools. A pulse check was very common, as was the use of a thermometer, but the use of a stethoscope was rare. Treatment apparatuses such as needles and syringes were owned by 87 percent.⁵ Most practitioners preferred to dispense medications rather than write a prescription; the patient paid a fee that combined medicines with consultation. The practice of charging a consultation fee was rare.^v While the private practitioner had to be paid, this payment could be discretionary, varying from patient to patient, and be deferred to a later time when money was available. Rural practitioners served a clientele almost entirely within the village where their practice was located and usually where they lived. It was observed that most patients who visited a private practitioner came from within a radius of 5 km.

Rural practitioners, however, were very careful not to take on cases that appeared complicated or keep those that progressed toward complications that tested their limits of caregiving. There was a strong practice of referral, but often these referrals were to government hospitals or qualified private doctors in towns. Rarely would they refer a patient to another practitioner in the village or to the government subcenters.

“I treated them for diarrhea, but it soon became apparent to me that they were suffering from something more serious that I did not have the medicines for; symptoms showed that they clearly had a more serious disease, so I sent them on to the government doctor in the city...It was no use though. He couldn't help them...They died,” he (private practitioner) ended, looking more than a little pleased with himself for having judged the

iv Ayurveda is a recognized system of medicine of Indian origin. The system is accepted by the community, and the Indian government also recognizes it.

v The roots of such protocol can be traced to Indian culture, which traditionally has frowned upon putting a price tag on knowledge and advice.

situation so correctly that the children had not died under his care. When probed to give further details of the case, he said, “Oh! It was something strange. Their eyes had become sunken, their tongue parched and dry, and skin on their stomach had become loose and inelastic.”⁶

In a field study covering twenty focus group discussions in fifteen villages in the state of Uttar Pradesh, criteria for quality of health care in the order of importance were i) effectiveness of treatment, ii) cost of treatment, iii) physical accessibility, iv) waiting time, v) provision (rather than prescription) of medicine, vi) timings of clinic, vii) doctor’s attitude and demeanor toward the patient, viii) cleanliness of the clinic, and ix) doctor’s qualification and training.

Quotes of user experiences from rural India

“The government center opens at 10 o’clock. Suppose your child falls sick at 4 o’clock, after it has closed, then we have to wait till 10 o’clock on the next day. We think we can instead go to the private doctor.”

“At the government center, you have to wait a lot. When you get vaccination done, it takes too long, the whole day is wasted.”

“How can we find waiting time acceptable? We are sitting there (at the clinic) and our earnings are being lost. If we had a government job, then it is okay. We can sit there and the government will anyway give us money. But we are working people. We have to think about our work and our earnings.”

“The problem is that if there is no one at home then how to leave the house? Or if your children are small, then what do you do?...You can’t take them to the center. You have to stop the disease. So you have to give herbs. To take one patient we have to walk for 10 km....Main problem is distance. If you go to Gopeswar (neighboring town), it takes Rs 400^{vi} to get there.”

“In the case of a private doctor there is no time (when it closes). You can go whenever you need to.”

“The private doctor does not take too long to attend.”

“Private doctors give medicines. In the government hospital, we have to buy medicines from outside.”

“They (government doctors) take medicines to their homes and from there they give it to the private doctor.”

“They do not give medicines to the illiterate. They give medicine to the literate people or people who work under them; mainly resourceful people get medicine. If you are a government man or have contacts, then you get medicine. Else you have to buy medicine from outside.”

“We are an uneducated lot. What do we gain by knowing about qualifications? We are only concerned about the medicine. If the medicines are effective, we don’t bother about the education.”

Source: J. E. Rohde and H. Viswanathan (1995). *The Rural Practitioner*. Oxford University Press, New Delhi.

vi ₹ or Rupee, is the national currency of India.

The unqualified RMP bought his supply of drugs from the pharmacist in town, often on a weekly basis. Because the pharmacist would be the only medical person the rural practitioner interacted with, he became a trusted source of information on (new) drugs. A practitioner may ask, “I am seeing a lot of eye infections these days—what do you have that’s good?” The pharmacist would then reach out for a sample left behind by the medical representative of the drug company and translated the instructions for use to the practitioner.⁷

It was estimated that there were 1.5 private practitioners per 1,000 people in rural India. On average a practitioner saw eleven patients a day and charged ₹ 15 per patient.⁸

Health care delivery model on the e-Choupal platform

At 6 percent of GDP, in 2005 the health care industry was estimated at ₹1,500 billion. Of this, 15 percent was publicly financed, 4 percent from social insurance, 1 percent from private insurance, and the remaining 80 percent from out-of-pocket.⁹ Of the out-of-pocket expenses, 80 percent went to the private sector and a large majority of the poorest people paid for their health services.¹⁰ It was estimated that 56 percent of the out-of-pocket expenditure in rural areas went toward private non-hospitalized care.¹¹ Of course, products and services available were of questionable quality. Furthermore, health expenditure had become the second-largest cause of indebtedness in rural India.¹²

The situation was no different in the e-Choupal catchment areas. Using the e-Choupal platform ITC already had made significant economic and social impact in the communities it served. Using the platform to address health needs seemed to be the next-best opportunity to Sivakumar. Providing access to quality health care at affordable prices would be consistent with ITC’s mission of improving “quality of life in rural India”; the extent of the problem and perceived unmet need offered an opportunity to develop a model that could deliver scale and profitability and meet stakeholder interests. He asked Kavitha and KT Prasad, then head of human resources and special projects and whom Kavitha reported to, to propose a plan for how the e-Choupal platform could be leveraged to deliver health products and services.

Kavitha first reviewed several health care and rural marketing initiatives offered by other private and nonprofit organizations. These spanned the spectrum from improving access to health care services through use of telemedicine technology, improving access to quality drugs and other health products, low-cost hospitals focused to deliver a narrow range of services, village-level entrepreneur models for sale of consumer and health goods, etc. (See **Exhibit 6** for a sample.)

In 2004 ITC carried out a field study in Sehore, Madhya Pradesh,^{vii} to better understand the problems faced in accessing rural health services. In ITC’s experience rural India’s needs did not vary dramatically across the country and therefore findings of the survey could be generalized. Not surprisingly its analysis revealed that transport time and money influenced health seeking behavior of the rural people. Other problems people faced were absence of health care providers, unavailability of medicines, corruption, etc. (see **Exhibit 7**). ITC also found that in general the overall health awareness was low and limited to mother and child care. People living more than 11 kilometers from the main town of Sehore articulated the need for a qualified doctor within their village with a proper health facility.

Based on the gaps analyzed and their visits to other institutions, Kavitha and KT Prasad felt that ITC’s existing three-tiered e-Choupal infrastructure could be leveraged to deliver a range of health services and products. For example, at the village level a basket of services consisting of preventive and curative primary-level services could be delivered by a trained health care worker (akin to a nurse assistant). These

vii Sehore is a town in the central province of Madhya Pradesh, about 40 km east of the capital city Bhopal.

could be complemented by basic diagnostics support, good-quality medicines, and a higher level of care by a general practitioner level, as well as a polyclinic located in the Choupal Saagar.^{viii} For advanced needs, a referral network could be orchestrated via a telemedicine facility that would connect to external health care providers. Delivery could be made affordable by leveraging the existing infrastructure, with internet and video conferencing (for telemedicine), introducing health insurance, and partnering with providers for specialist care. The three-tiered model would have to be supported by a robust supply chain for drugs, supplies, and consumables and health insurance for higher levels of care provided by the external network.

Over the next few weeks they flushed out the details and prepared to present their model to the senior leadership team at ITC. The first tier would be situated at the choupal (village) level and managed by a village health champion (VHC). The primary focus here would be on wellness. The VHC was to be the first point of contact between the patient and the health care delivery infrastructure. In addition, technology available at the e-Choupal would be used to provide basic health information and awareness. For example, the portal would carry health and well-being content as well as provide health related frequently asked questions monitored and responded to remotely by health care professionals. In addition, a weekly health talk would be delivered by a doctor through the choupal radio. Through these channels and in combination with periodic health camps, basic health services including immunization, precautionary measures to be taken during monsoons, protection from malaria, early detection of cancer, pulse polio, dental campaign for schoolchildren through a partner company (e.g., Colgate), etc., could be delivered effectively. The VHCs would conduct door-to-door surveys to enable creation of a health profile database of the community, ultimately enabling customization of service delivery.

The VHCs were to be nominated by the sanchalak (e-Choupal kiosk coordinator) in consultation with the sarpanch (political village head). The VHC would belong to the local community, be willing to provide voluntary services, be socially accepted, be less than twenty-five years of age, have family support for the work, and have availability of dedicated space and a willingness to buy technology or kits for income stream creation. The tasks of a VHC included collection of household health profile data, health education and awareness, facilitation of preventive services such as immunization, selling of health products such as over-the-counter (OTC) drugs and reading glasses, collection of samples for pathological tests, facilitation of teleconsultation (using the facilities already available at the e-Choupal) with the clinic at the (second-tier) hub, provision of emergency services, outreach activities of the clinic, and financing in the form of health insurance/credit and participation in training. The sanchalak and sarpanch would monitor the activities of the VHC, review performance, coordinate sales of products and insurance services, and assist in conducting of health camps and customer mobilization. Revenue streams for the VHC were to be from sample collection, sale of drugs, and other activity-based incentives. Sanchalaks and samyojaks would earn commissions on product sales as well. Each village under the e-Choupal cluster would have a VHC. With five villages per choupal and forty choupals to a hub, a total of 200 VHCs per hub would be recruited. On average a hub covered a population of 200,000.

The second tier would consist of a health center located at the *Choupal Saagar* (also called a hub). The health center would consist of a primary health clinic, a pathology lab, and a pharmacy established in partnership with a health care provider. A telemedicine facility would connect with a remote hospital for teleconsultation with specialists, online training, and learning. A telemedicine software and clinical decision support system^{ix} would be available to the doctor on the computer. Connectivity would be provided via a broadband leased line or ISDN. Auto analyzers, cell counters, basic lab equipment, and other automated diagnostic equipment would be made available as well.

viii Polyclinics are consultation clinics with doctors from different specialty providing services on visiting basis.

ix A clinical decision support system was to be integrated for awareness creation and primary care information for the VHC. This was to have protocol-based care instructions for common diseases.

The center would be staffed by a general medical practitioner (GP) a licensed pharmacist, and a pathologist. In addition, the hub staff of ITC would assist in various activities at the choupal level.

The general practitioner ideally would be an MBBS^x doctor with three to five years of experience, have a proven track record, be willing to work in the rural areas, and be sensitive to the needs of the community. In addition to performing clinic services, the GP was expected to manage and train the VHC network, facilitate telemedicine consultations, and manage a clinical decision support system. The GP would receive training for a week on clinic management, management of community expectations, and other nuances of public health management.

The licensed pharmacist would be responsible for inventory management at the hub as well as management of the rural (hub-to-choupal) supply chain. He/she would also be trained for a week on the model and expectations. The pharmacy would also dispense spectacles for presbyopia^{xi} from VisionSpring.^{xii} In addition to lab duties, a pathologist would be responsible for camp management (blood collection camp), inventory management, and rural supply for lab consumables.

“While the health center at the Choupal Saagar may compete with the health clinics located in adjoining towns, we feel that the quality of care available in these towns and qualifications of some doctors were questionable. The rural people are willing to travel up to 100 km—approximately a day’s journey—to access quality health care,” said Kavitha.

It was also envisaged that a carefully selected set of existing health providers in the village would be networked for intravenous blood sample collection, administering injections and intravenous fluids, follow-up care, and referrals. The providers, identified by the sanchalak and sarpanch, should have recognized credentials, a permanent clinic, and a willingness to partner with ITC (see **Exhibit 8** for a profile of existing providers in Sehore, Madhya Pradesh). Upon recruitment, the providers would receive training and report to the GP at the hub and also avail of supplies from the hub. It was expected that they would attend all village-level meetings. It was hypothesized that by engaging with ITC, health providers would earn additional revenues from the sale of an expanded portfolio of products, including consumables, obtain better advice on medications from the GP, and earn referral and other activity-based incentives. Engaging with the local community in this manner would ensure availability of health care at the doorstep of a villager. A minimum of one hundred square feet of clean space, preferably with clean water supply and a toilet, was to be provided either at the e-Choupal kiosk or at the local existing health provider.

The third tier would consist of network partners, including local hospitals, specialist doctors, diagnostic centers, tertiary care hospitals, and insurance companies. Telemedicine consultation would be used for specialty consultation on an as-needed basis. A partnership with secondary hospitals in the immediate vicinity of the hub for services such as maternity, basic surgical requirements, and diagnostics not available at the clinic, including hospitalization, was also envisaged. Partnership with health insurance companies would address the financial dimension of health care consumption for specialist services.

Other human resources supporting this infrastructure would include a claims manager for insurance management, information technology engineer, and a program manager to manage the entire network. All of them would be trained for a week to orient them to the systems.

x Bachelor of medicine and bachelor of surgery (MBBS)—a formal medical degree in India.

xi Presbyopia is a condition in which the lens of the eye loses its ability to focus, making it difficult to see objects up close.

xii VisionSpring (<http://www.visionspring.org>) is a not-for-profit organization focusing on increasing use of eyeglasses in rural areas through social entrepreneurship.

“Thus the three-tier network would allow the e-Choupal platform to meet the complete spectrum of health care needs of the rural population,” concluded KT Prasad.

Partnership Model

ITC decided to launch the health initiative in partnership with health care providers under a non-exclusive agreement. The contract period would be for a year, to be extended or terminated with mutual consent. Under the agreement, the health care partner would be responsible for clinical human resources, associated medical technology and medical supplies and their management. Specifically, the partner would hire and train all the medical staff including the GP, pharmacist, pathologist, and the VHCs. The partner would also purchase and maintain necessary medical equipment for the clinic and the lab as well as purchase and manage inventory of drugs and supplies at the pharmacy. It would also submit a monthly report to ITC regarding the clinic, pharmacy, and pathology turnover. Salaries, rental for the space, reimbursement of electricity and telephone, purchase of medicines and other consumables, and operational expenses were to be the responsibility of the partner. The rental for the space provided at the hub was ₹ 10,000 per month.

ITC's role was to provide space in the hub and facilitate the leveraging of the already established community linkages through sanchalak and samyojak. ITC would also provide all the interiors for the clinic, pharmacy, and pathology lab, as well as physical infrastructure such as computers, telemedicine connectivity, telephones, fax, web cameras, microphone, scanners, and furniture. In addition, ITC would provide electricity backup and space to put up one hoarding without any charge. It was agreed that the partner would pay for any additional displays and equipment it deemed necessary.

Sources of revenue included sales of drugs and supplies, fees for consultation, and diagnostic tests. It was decided that there would be no revenue sharing between ITC and its partner health care provider until the annual turnover reached ₹ 1.25 million. The percentage of revenue sharing was to be discussed and agreed upon post that achievement; until then the partner would continue paying the rent. The terms of the agreement entitled ITC to partner with multiple health care providers to scale this model across its network.

Towards the end of 2004, ITC started scouting for partners for piloting the proposed model. It approached several larger health care organizations in the country. During the next couple of years, a few pilots were conducted in the states of Madhya Pradesh and Uttar Pradesh. While these partnerships implemented only the hub-level activities of the original three-tier model, they nevertheless offered some important lessons. For example, it was observed that footfalls to the Choupal Saagar clinic depended largely on the profile of the doctor at the clinic as well as availability of teleconsultation opportunities with specialists.^{xiii} They also increased during focused interventions such as preventive measures for the chikungunya^{xiv} epidemic. Dissatisfied with the slow progress and overall commitment shown by its partners, ITC began looking for a like-minded organization to implement the model in its entirety. In late 2006, ITC approached the CARE Hospitals group with a proposition to do a pilot in Maharashtra. Dr. Krishna Reddy, CEO of CARE Hospitals group and the then head of the CARE Foundation, and Dr Priyesh Tiwari, chief of the community health and wellness program, agreed to a meeting with ITC.

^{xiii} Upon some research, it was realized that the choupal-to-hub-level teleconsultation model was not feasible due to bandwidth constraints and costs.

^{xiv} Chikungunya (in the Makonde language “that which bends up”) virus (CHIKV) is an insect-borne virus that is transmitted to humans by virus-carrying Aedes mosquitoes. It is characterized by fever and joint pains.

CARE Hospitals group and CARE Foundation

CARE Hospitals group (henceforth referred to as CARE) was founded in 1997 by a group of physicians, chaired by Dr. Soma Raju, who had worked for about ten years at the Nizam's Institute of Medical Sciences (NIMS), a public medical school located in Hyderabad. Annoyed by the bureaucratic systems of the public hospitals, Dr. Raju and his team of physicians decided to establish CARE to provide world-class treatment with compassion. The first hospital was a 100-bed facility in Hyderabad offering cardiac care. By 2006, CARE grew to become the fourth-largest health care provider in India^{xv} focused on providing quality care at an affordable price for the middle-income group. The CARE Foundation, established before the hospital in 1996, was a nonprofit institution for education, training, research, and technology. The foundation had its own telemedicine and tele-education programs.

In 2006–07 CARE decided to streamline its vision to create an integrated health care delivery system. Articulating this vision meant CARE needed to create facilities to meet the complete spectrum of health care, from primary to tertiary. CARE was keen on developing a self-sustainable primary health care system with effective referrals to secondary and tertiary levels in both rural and urban areas. Because a health care delivery model at the primary level was untested, CARE decided to experiment through its foundation.

CARE's rural health program was informed by an initial study of existing organizations in Yavatmal and surrounding regions in the state of Maharashtra to understand the basket of services currently being provided and current health-seeking behavior and expenditures, as well as willingness to pay for insurance (**Exhibit 9**; also see **Exhibit 10** for a district map of Maharashtra). The study also found that almost all non-governmental organizations focused on a single condition, e.g., maternal and child health, HIV/AIDS, or nutrition, and none provided comprehensive primary care services. Furthermore, most programs were donor supported and few focused on health financing.

CARE believed that an effective model should deliver basic health services at the doorstep of the villager as well as provide health financing to increase uptake of services. CARE envisaged a three-tier system of delivery. At the lowest tier (tier 1) there would be a village health care worker supported by a general physician (GP) at the hospital (tier 3) through remote consultations. CARE believed that 75 percent of primary health care needs could be addressed using this model. For remaining issues, which may require diagnostics and prescription drugs, a patient would visit a hub clinic (forming the tier 2) managed by a physician assistant, also supported by the GP at the hospital. To support the three-tier delivery system, CARE developed a four-pillared capability model. First, *training and capacity building* was recognized to be of utmost importance. It was important to train everyone from the village health worker to the physician's assistant at the clinic. The training would equip people with the skills to manage expectations of the community in a resource-constrained setting. Because both the village health worker and the physician assistant would rely on remote consultations with the hospital-based GP, *technology* would be a key enabler. CARE proposed use of technology at the village level for basic data collection, simple diagnostics, telemedicine with the hub clinic, sales and transaction management, insurance, and performance monitoring. The technology bundle at the village level would include a biometric-enabled handheld device with a printer and a camera, digital stethoscope, blood pressure machine, glucometer, height and weight machine, spring balance, medical kits, and a smart card reader. Mobile-based software was proposed to integrate all of the above. Connectivity would be provided either through GPRS, PSTN, or CDMA.^{xvi} At the time such a handheld device was not commercially available in the market, but it was estimated to cost around ₹ 30,000 per unit. Third, a *robust*

xv CRIS-INFAC report, 2006 (www.crisil.com). By 2011 CARE would grow to a 1,720-bed network of twelve hospitals spread across India and emerge as one of the leading health care providers in India.

xvi General packet radio service (GPRS) is a packet-oriented mobile data service on 2G and 3G cellular communication systems. The public-switched telephone network (PSTN) is the network of the world's public circuit-switched telephone networks. Code division multiple access (CDMA) is a channel-access method for communications.

supply chain was needed to ensure that drugs and point-of-care diagnostics were made available at the clinic as well as the village. Finally, CARE believed that *health financing* in the form of micro-insurance would be essential to promote health services at the village level and decrease out-of-pocket expenses. The product would cover consultation, diagnostics, and prescription drugs on a cashless basis for one year without any exclusion. The insurance product would provide users with options to include a health savings account, emergency transportation, inpatient care, accidental death and disability benefits, etc. CARE thought that the financing model would be feasible when at least 25 percent of the residents in areas with a population of 1 million or more enrolled in the scheme and 75 percent renewed their insurance. Of course, attractiveness of the insurance model would depend on the premium amount, covered risks, and availability of a natural aggregator for enrollment, customer services, documentation, and awareness building.

ITC-CARE pilot in Maharashtra

The proposed partnership appealed to both CARE and ITC. CARE was one of the leading health care providers in the country and just venturing into the rural space. ITC already had a strong rural presence through its e-Choupal platform. In November 2006, CARE had established a 105-bed hospital in Nagpur (city in Maharashtra, 75 km from some of the catchment areas of ITC), so it was not new to the state. After initial exploratory meetings, Dr. Priyesh Tiwari and Girish Babu from CARE and Kavitha from ITC were assigned to work out the details of the partnership model and propose an implementation plan. CARE proposed four districts for the pilot—Wardha, Yavatmal, Washim, and Amravati in the Vidharbha region (see **Exhibit 10**). It was decided that ITC's three-tier model would be adopted initially with a strong focus on training and education as proposed by CARE. In the initial pilots, village-level handheld technology and health financing would not be implemented. In February 2007, the ITC-CARE team broadly outlined the investments each would make, detailed the scope of services that CARE would provide, and identified revenue sources as well as roles of each organization (see **Exhibit 11**). For the pilot, CARE proposed that VHCs be offered a fixed remuneration to ensure their retention, because revenue-generating activities might take some time. It was also decided to name the health center located at the Choupal Saagar as CARE Arogya Kendra (or CARE Health Center).

The first pilot in the Wardha region began in September 2007 but was wound up by the year-end, mainly due to immediate departure of the doctor. More important, the existing medical college in Wardha had a strong rural health program and the services it provided overlapped with those of the ITC-CARE model. Subsequently, CARE indicated that internal funding constraints would restrict the team to pilot in only one area. The Yavatmal region was chosen to implement the model in its entirety and the pilot was finally launched in March 2008. The first set of five VHCs was selected to undergo training at the Choupal Saagar. There was tremendous enthusiasm. Several activities, however, still required completion. These included staffing the health center with a doctor, a pathologist, and a pharmacist, obtaining appropriate licenses for procurement and sale of drugs, and developing detailed protocols for VHCs to follow for activities listed under Level 2 and 3 training (**Exhibit 11**). There was no standard off-the-shelf training content that could be used. Protocols were essential for the VHCs to communicate effectively with the general practitioner.

A pharmacy, which each health center needed to have, could not operate without a license. Ideally, one just needed to fill in a form and submit it at the government office. If all the requirements were met, a license was issued. But government offices did not necessarily work in a timely fashion. Ultimately, it took about three months to get a pharmacy license in Yavatmal.

Getting a general practitioner with the right profile for the health center remained a challenge. "It is difficult to find like-minded people with the same ethos and service orientation. Fresh graduates want a minimum salary, and an established doctor wants compensation for his earnings," said Dr Tiwari. Finding

it difficult to get such a doctor, CARE suggested recruiting an ayurvedic doctor from the local area. Girish articulated the reasoning behind the choice. “We validated various ideas and, practically, it was not possible to have a doctor on a rotation basis from the hospital. Even at the hospital it was difficult to hire a doctor. Our need was for a primary care physician. Surgical care was not required. It was better to have a local resident doctor who met the requirements, who could stay back if required and also understood the community’s mentality and behavior that are important and different from urban settings. Local practices are different. So if we have a doctor from the hospital, we are not sure of continuation of services.”

ITC was reluctant to have a physician trained in alternative medicine manage the health center. Even though the state of Maharashtra permitted ayurvedic doctors to practice western medicine, the practice was illegal in many states. “The objective of a pilot was to refine and develop a scalable model; regional customization would make it difficult to scale,” noted KT Prasad. But in the absence of a doctor trained in western medicine, CARE moved ahead to employ an ayurvedic doctor and trained him. CARE felt that a local doctor would be more useful as he would be tuned to the needs of the community and be available when required. At least it was worth a try for a pilot. ITC relented.

By June 2008, Yavatmal was fully operational. A pharmacy license was in place, and there was a doctor at the health center. An initial batch of five VHCs underwent a three-day training program that covered issues such as technical skills relating to the VHC activities and tasks, soft skills training, exposure to the rural health care challenge, ITC-CARE partnership, etc. (Level 1 training as shown in **Exhibit 12**). It was envisaged that the initial training was sufficient to deploy VHCs in the field. With this training they could start household surveys, assist the sanchalak in conducting health camps, and build awareness about health in the community. They would undergo further on-the-job training regarding delivery of advanced health services (Levels 2 and 3) later.

Ms. Pranita, a 23-year-old female with a high school diploma, was one such VHC from the village of Shivni in the Talegaon choupal. She joined the program because she wanted to serve her community. Initially, she was hesitant to wear an apron but gradually overcame her shyness when she observed that people began to admire and respect her for what she was doing. One night, Swapna, a twenty-year-old, six-months-pregnant neighbor, started vomiting continuously. It was too late to take Swapna into the town. Swapna’s mother-in-law, who had heard about the VHC from the sanchalak, contacted Pranita. Pranita did not have any medications with her. VHCs were supposed to carry some OTC drugs with them, but there was a delay in identifying the right basket of OTC products for a VHC and in setting up the supply chain of drug distribution to the village level. Fearing Swapna might soon suffer from dehydration and not having access to a packet of oral rehydration salts, Pranita (using her knowledge from previous work experience at a hospital) suggested a home remedy of an appropriately mixed sugar-and-salt solution to Swapna. The next day, Pranita accompanied Swapna to the health center. She narrated the incident from the previous night to the doctor, who commended Pranita for her timely first aid service, which avoided potential complications. He suggested that Swapna be taken to Dr. Kamble’s clinic in the Yavatmal town, about 3 km away. As a sense of pride and relief overcame Pranita, she wondered how, with only Level 1 training, other VHCs would have dealt with the situation.

Source: ITC

Sanchalaks played a critical role in screening for VHCs. They also introduced the VHCs to the village population, spread awareness about the initiative, and assisted in the conduct of health camps. A health camp was planned by the sanchalak, VHC, and cluster coordinator, taking into account the needs of the community. As appropriate, consent of local health officials and the sarpanch (village leader) was also sought. It was the sanchalak's job to spread awareness regarding the camp, mobilize a specific site, and ensure that the local logistics were taken care of. The VHC took responsibility for all activities related to the conduct of the camp under the guidance of the sanchalak (see **Exhibit 13** for a list of activities).

Health camps typically started at 8 a.m. and lasted for about two hours. A team of a doctor and a nurse from the health center conducted the camp with assistance from the local VHCs. The doctor-nurse team did some basic health screening and diagnostics and prescribed medication as necessary. Some of the medicines could be bought at the camp; for others, the patient could either go to the pharmacy at the Choupal Saagar or purchase them from a local chemist. Any case that required more sophisticated lab diagnostics was referred to the hub clinic. Referrals to specialist care in the town were also not uncommon. On average fifteen to twenty patients were seen at a camp.

"We are very grateful for the opportunity to have our health needs assessed right here in the village," said Meera, a villager who came to the camp in the Yerad choupal with her two-year-old girl.

"Now we only need to travel to the town only if necessary," added Geeta, another villager at the camp.

"I wish we had a doctor in the village. I am not sure how often the camps will be held. We like the VHC because she tells us about good health and hygiene. But she does not have any medicines. She does refer us to the Choupal Saagar clinic. I went there once. The doctor is good, and I like that the pharmacy is at the same place," commented Vinod, a middle-aged farmer at the camp.

In the weeks that followed, more VHCs would be trained and several camps held, approximately one a week in different e-Choupals. By October 2008, a total of twenty VHCs had been deployed, covering half of the Yavatmal hub catchment area.

Periodically, a meeting of the sanchalaks would be called at the hub to discuss progress, get feedback from the field, and reinforce the health care model; on average about half the sanchalaks attended. Those who did, reiterated their commitment to the model but emphasized that VHCs were currently limited in their activities and that the supply chain for OTC drugs and supplies should be developed quickly.

In early November 2008, Kavitha, Girish Babu, and Dr. Tiwari met in Hyderabad to review progress of the implementation. One of the core objectives of the partnership was to create a self-sustaining clinic. As per the original plan of four clinics to be rolled out, ITC had already made a total investment of ₹ 423,000 to retrofit the hubs for setup of clinics. However, only one clinic was operational. The actual footfalls to the clinic were far below the minimum necessary to break even. The average monthly operating costs were ₹ 50,000, but revenue earned was in the range of ₹ 3,000–5,000. People who accessed the clinic usually came from within a 10 km radius.

Connectivity from the health center to the Nagpur hospital for teleconsultation still remained a problem. Technology was unreliable. "I just got approval to install a tower at an additional cost of ₹ 85,000", said Kavitha.

“The attendance at camps is quite variable. It all depends on how hard the sanchalaks and the VHCs work. I am frustrated by the lack of commitment shown by some sanchalaks,” commented Girish Babu.

Dr. Tiwari was responsible for setting up partnerships with the network hospital as well as the local area providers. “I have talked to several local area clinics, hospitals, and diagnostic centers about partnership and discounts for referred patients. Unfortunately, few have shown interest. Unless we get volumes, I fear they will not partner with us,” continued Dr. Tiwari. “I also think we need to focus on developing a financial inclusion product to reduce the burden of health care access and improve uptake,” he added.

Girish Babu hypothesized that generating sufficient footfalls to the health center was a challenge because the Yavatmal hub was located outside the town away from the main transport line. A person from the catchment area would have to first reach the town and then take another transport to reach the Choupal Saagar health center.

Kavitha added, “Periodically, we need to get specialists to the health center from the Nagpur hospital to be able to attend to some procedures so patients have a stronger incentive to come to the Choupal Saagar.”

The team reflected on these challenges and brainstormed about next steps. By the end of November, however, Dr. Tiwari, who was the key link between the CARE Foundation and CARE Hospitals group, left CARE to pursue other opportunities. A replacement was not immediately identified. KT Prasad moved to ITC corporate headquarters in Kolkata, and L. Prabhakar took on his role.

What next?

In December 2008, the ITC-CARE team revisited the original mission and delivery models. Using lessons from the six-month experience, they started refining the model with a mission “To enable healthcare for the first million people in rural India across the e-Choupal channel in 2009.”

CARE was convinced that implementation of the missing elements of the original model, viz., a handheld device for the VHC and health financing mechanism, would be critical for success. With a handheld device connected to the doctor for consultation, a VHC would be able to address basic needs of the population at the village level. The device could also be used to keep track of product sales and to monitor the VHC activities.

Providing health financing in the form of a micro-insurance would incentivize the population to avail of health services in the network. However, no such micro-insurance service was available in the market space. So the product had to be designed and deployed. A memorandum of understanding with an insurance company was signed. Deployment, however, entailed several tasks at each of the three tiers. At the village level, awareness creation and enrollment would be the responsibility of the VHC, sarpanch, or sanchalak. The VHC would also be responsible for documentation and premium collection. Preauthorization for referral services would be enabled via the handheld device with the help of a clinical decision support system. Compilation of documentation and empanelling of providers would be the responsibility of the hub. Third-party administrator software would be used to process the claims. A process of payment to the providers would also have to be in place. Other support functions like call center services, information sharing with providers, and troubleshooting of technology were also required. Overall monitoring, strategic partnerships, and marketing and analysis for the insurance would have to be done at the central level.

CARE also suggested that the current Choupal Saagar location for the clinic was not suitable and that

the CARE Arogya Kendra (clinic) be relocated to the Yavatmal town to improve access.

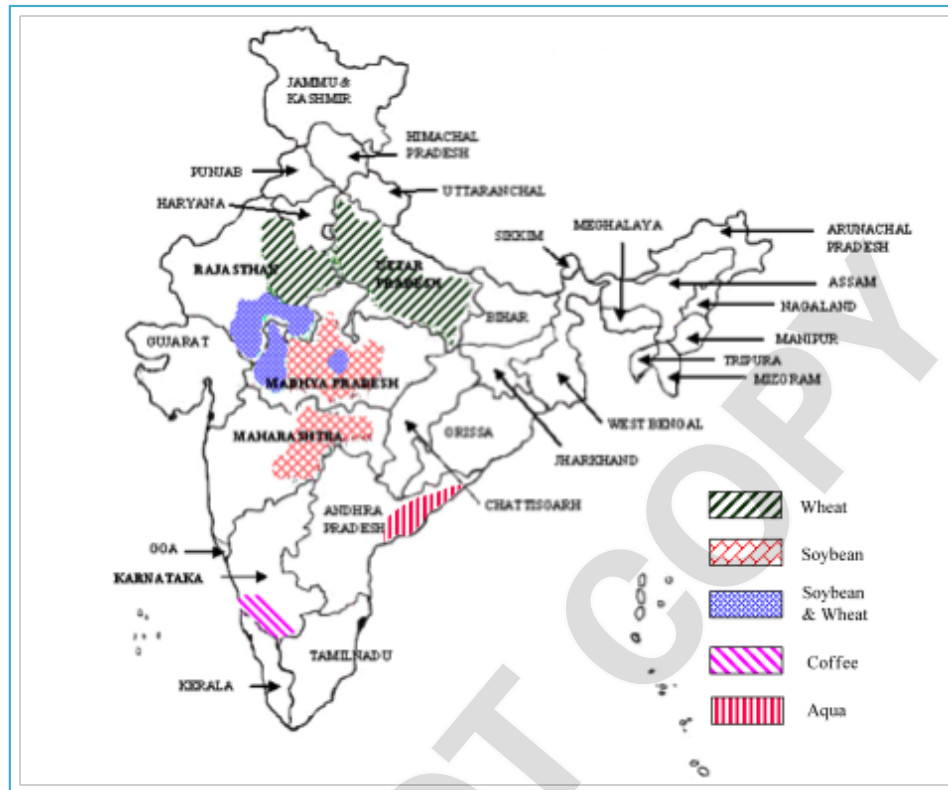
In February 2009 a complete (revised) model with financials was developed; **Exhibit 14** (a-f) shows details of a business model for one hub. On February 12, CARE presented the model to the ITC senior leadership. It was proposed that the missing elements of the new model would be implemented in Yavatmal and the entire model would be rolled out in six other hubs over the next four months. It was also proposed that the renewed model pilot be tried for another year. Depending on the model's performance, ITC could decide on scaling it across the country. During the meeting, CARE also suggested that ITC fund the deployment of handheld devices as well as take the overall responsibility of administering and managing insurance services.

Sivakumar wondered if the proposed model would lead to a sustainable and ultimately scalable solution to address the comprehensive health care needs of the rural areas. Was the additional investment justified? Was CARE the right partner to proceed further? Or should ITC explore other opportunities in the health space?

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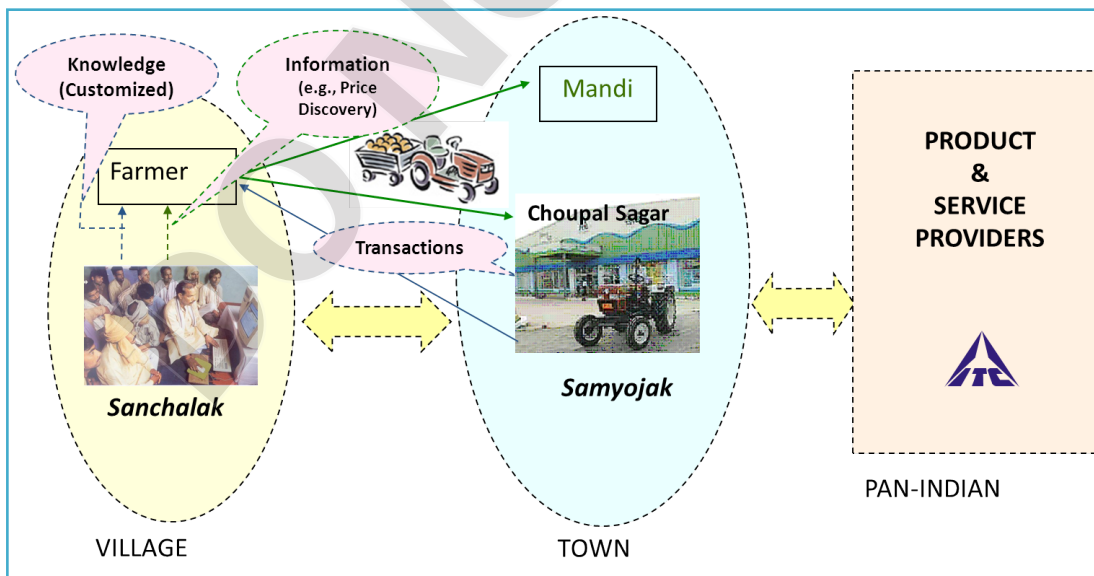
Exhibits

Exhibit 1:
ITC e-Choupal Footprint



Source: ITC

Exhibit 2:
The e-Choupal Platform



Source: Anupindi and Sivakumar (2007)

Exhibit 3:
Typical Layout of a Choupal Saagar



Source: ITC

Exhibit 4:
Rural-Urban Divide

S. No	Characteristics	Rural (per 1,000 population)	Urban (per 1,000 population)
1.	Infant Mortality Rate (IMR): Live births	74/1,000	44/1,000
2.	Under-Five Mortality Rate: Live births	133/1,000	87/1,000
3.	Births Attended	33.5%	73.3%
4.	Full Immunization	37%	61%
5.	Hospital Beds	0.2	3.0
6.	Doctors	0.6	3.4
7.	Public Expenditures	₹ 80,000	₹ 560,000
8.	Out of Pocket	₹ 750,000	₹ 1,150,000

Source: Ghuman, B.S. and A. Mehta, "Health Care Services in India: Problems and Prospects", International Conference On The Asian Social Protection in Comparative Perspective, National University of Singapore, Singapore, 7-9 January, 2009

Exhibit 5:
Public Health Care Infrastructure in India

Agglomeration	Village Level	Block Level	Subdistrict ^{xvii} Level
Name of Facility	Subcenter (SC)	Primary Health Center (PHC)	Community Health Center (CHC)
Coverage			
Population	5,000	32,000	220,000
Avg. area (sq. km)	21.35	134.2	931.95
Radial distance (km)	2.61	6.53	17.22
# of villages	4	27	191
Facilities	1 trained male and female health care worker or auxiliary nurse and midwife (ANM)	Outpatient; 1 or 2 general practitioners; 4–6 beds; diagnostic lab; and nonsurgical birthing facilities	50–60 bed hospital; four specialists in the areas of medicine, surgery, pediatrics, and gynecology; medical and paramedical staff; an operation theater, labor room, X-ray machine, pathological laboratory, and standby generator
Referral Unit		Up to 6 SCs	Up to 7 PHCs

Source: (expanded from) Anupindi, R. et al., "Healthcare Delivery Models and the Role of Telemedicine." In *Indian Economic Superpower: Fiction or Future?* (edited volume), World Scientific, Singapore, Spring 2009.

xvii India has twenty-eight states with a total of 593 districts. Average district size is 5,340 sq. km. and average population per district is 1.73 million.

Exhibit 6:

Sample of Initiatives in Health Care & Rural Marketing

Telemedicine for Health Care is the use of information and communication technology to deliver health care services remotely. It uses audio and/or video technology to effectively substitute for face-to-face encounters between patients and health care professionals, thereby transcending geographical boundaries in the delivery of health care. Deployment of telemedicine was gaining momentum in India across a wide spectrum of health care providers and services. For example, private tertiary care hospitals like Apollo Hospitals, Narayana Hrudayalaya, Aravind Eye Hospitals, and Sankara Nethrayala have deployed the technology to provide remote diagnosis,¹³ and the Health Management Research Institute uses the technology to provide a wide variety of basic consultation services.¹⁴

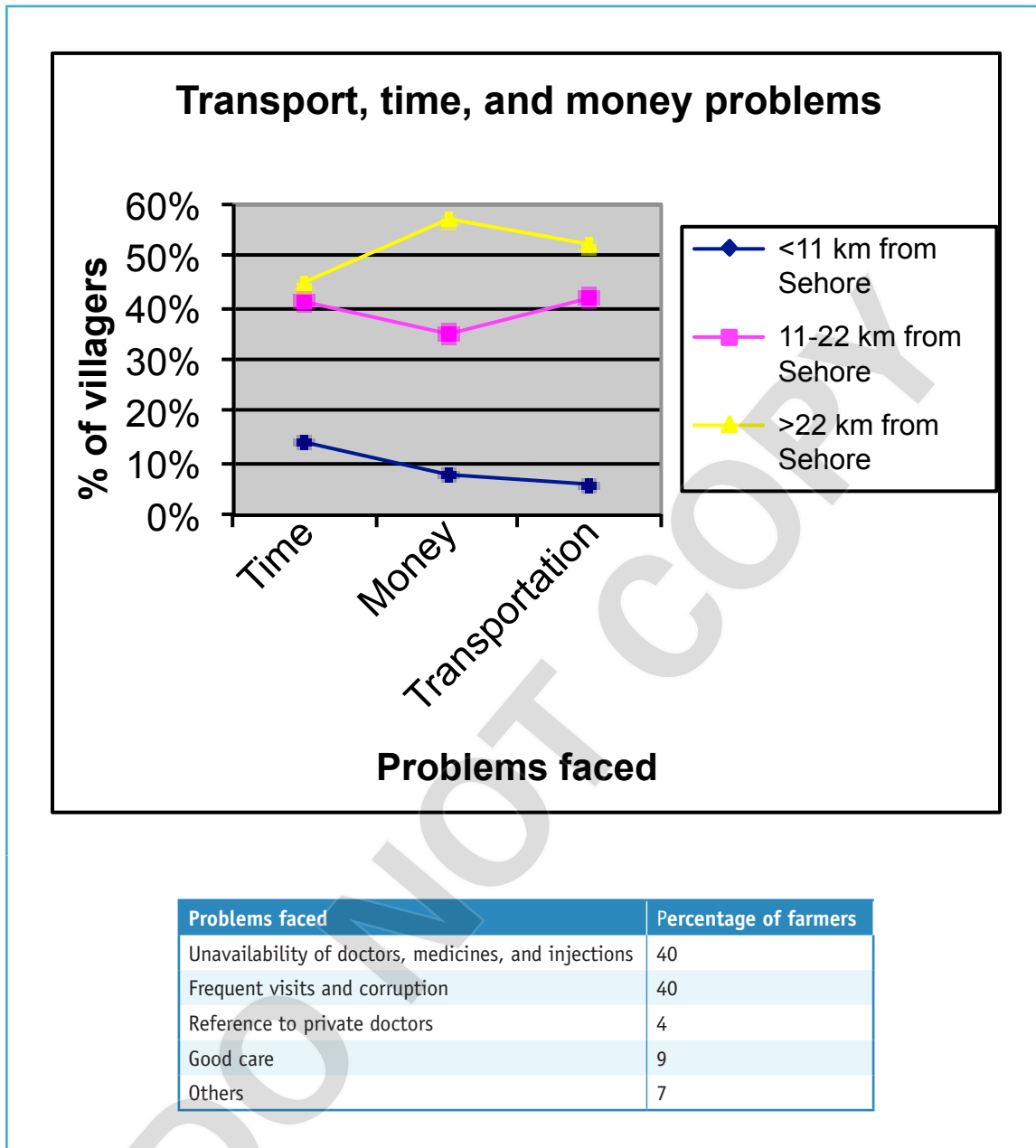
VisionSpring is a social enterprise that delivers high-quality, affordable eyeglasses to individuals in the developing world. To reach the hundreds of millions of low-income consumers in the developing world, VisionSpring empowers local individuals to launch their own businesses to sell eyeglasses. Each Vision Entrepreneur conducts marketing and educational outreach, screens and sells eyeglasses, and refers those requiring prescription glasses to optometrists. Vision Entrepreneurs generate awareness and provide access to VisionSpring products in hard-to-reach communities across the globe.¹⁵

Arogya Parivar is a for-profit social initiative of the pharmaceutical company, Novartis, to deliver health services to rural areas. The approach uses a marketing mix based on the “4 As”—Awareness, Acceptability, Affordability, and Availability—adapted to low-income markets through (i) products that are tailored to the villagers, simple to use, available in small packs and hence more affordable, and with packaging and educational materials in local languages, (ii) systems to ensure supply chain continuity and improve the availability of medicines, (iii) and community health education to address low levels of disease awareness. The program emphasizes patient education and local capacity building to ensure long-term success. Health educators, usually local women, are recruited and trained to raise awareness about diseases and preventive health measures, while health supervisors serve as the initiative’s sales force, working to ensure that medicines are available in the most remote locations.¹⁶

Project Shakti: Hindustan Unilever’s Shakti entrepreneurial program helps women in rural India set up small businesses as direct-to-consumer retailers. The scheme equips women, called shakti ammas, with business skills and a way out of poverty as well as creates a crucial new distribution channel for Unilever products in the large and fast-growing global market of low-spending consumers. By the end of 2004, the project had grown to over 13,000 women entrepreneurs covering 50,000 villages in twelve states, selling to 70 million consumers. In 2005 the project was enhanced to add iShakti kiosks to provide villagers with free information on a wide range of topics, including health and hygiene, agriculture and horticulture, child and adult education, finance, employment, and entertainment.¹⁷

LifeSpring Hospitals is a joint venture between Hindustan Latex Limited and the Acumen Fund to provide low-cost, high-quality maternal and child health care services to peri-urban areas. Normal and cesarean delivery at LifeSpring are one-sixth of the cost of similar services offered at most private clinics.

Exhibit 7:
Problems Faced by Villagers in Accessing Health Services



Source: ITC

Exhibit 8:
Profile of Health Providers, Sehore

Qualifications	Percentage of health providers (n=78)
8 th grade	1
10 th grade	3
12 th grade	31
Bachelors of Art (BA)	8
Bachelors in Ayurveda Medicine and Surgery	4
Bachelors of Commerce	1
Bachelors of Science	19
Diploma in Ayurveda Medicine and Surgery	1
Diploma in Homeopathy Medicine and Surgery	4
Masters of Arts	8
Bachelors of Medicine, Bachelors of Surgery	15

Source: ITC

Exhibit 9:
Survey Conducted by CARE in Yavatmal (Maharashtra)

Demographic details	
Population covered (two villages)	20,000
Average household size	4.93
Average household income per annum	₹62,021
Primary occupation	Labor, agriculture workers, owners, business and private employees
Health expenditure/household/year (₹)	
Out-patient care	570
Hospital care	5,500
Post-hospital care	210
Maternal expenditure	1,239
Health-seeking behavior	
Avail public facilities	48.5%
Avail private facilities	47%
None	4.5%
Willingness to pay for insurance/household/year (average) (₹)	₹366

Source: CARE foundation

Exhibit 10:
District Map of Maharashtra



Source: Election Commission of India (<http://ceo.maharashtra.gov.in/>)

Exhibit 11:
ITC-CARE Partnership

Revenue Sources	
e-Choupal	Teleconsult fees and sales of OTC drugs
Choupal Saagar	Consultation fees, diagnostics, and pharmacy sales
Indirect revenues	Referrals to tertiary care, insurance premiums
Roles	
CARE	CARE will bear all the capital and administrative costs for health care delivery services at e-Choupals and Choupal Saagars CARE will bear the manpower costs, equipment maintenance costs, and other recurring expenses for medical services CARE will obtain necessary licenses and indemnity coverage Miscellaneous activities related to health care delivery
ITC	The existing space will be provided by ITC IT connectivity provided by ITC, including upgradation of bandwidth if required Power backup, building maintenance, and security, etc., covered by ITC ITC will permit sharing of other relevant resources

Source: ITC

Exhibit 12: Training Model for VHCs

VHC Training Program Level 1

- *Introduction:* Overview of e-Choupal & Choupal Saagar; Ground rules
- *Environment:* Healthcare service providers (RMPs, public health network, medicine shops, etc.)
- *Health related:* Human body; Diet and nutrition
- *Services:* Household questionnaire; Promoting a healthy family and environment
- *Career path:* Ongoing education; Rewards & incentives; Recruiting other workers
- *Soft skills:* Communication skills, customer service, ethical behavior, teamwork; Recording & reporting data/referral control
- *Field visits and handholding for a few days.*

VHC Training Program Level 2

- *Services:* Community mapping; Escorting patients to a hospital
- *Health related:* History taking & Clinical examination, Blood sample collection; Counseling, Diarrhea, HIV & AIDS, Malaria, Personal Hygiene, Physical Examination, Safe Drinking Water, Sanitary & Sewage Disposal, Temperature & Pulse Measurement, TB, Urine Sample Collection
- *Soft skills* (Level 1) reinforced

VHC Training Program Level 3

- *Technology:* Use of handheld device
- *Health related:* Cancer, Diabetes, First Aid, Foreign bodies in ear, nose & throat, Heart Diseases, Hypertension, Decision making, Snakebite management, Stroke, Testing of eyes
- *Management Skills:* Handling finances, Loss & theft, Micro-insurance & Health insurance, Planning & Coordinating

Source: ITC

Exhibit 13:
Checklist for Health Camp

- Tent to be placed
- Carpets to be provided
- Table with tablecloth for the doctor
- Table with tablecloth for the helpers
- Chairs for the doctor, helpers, and ten to fifteen for older people
- Drinking water to be provided
- One mic to address the gathering
- Prescription pads with carbon copy
- Handbills and posters
- Banners—CARE & ITC
- Medical equipment (sketch, BP machine, weighing machine, etc.)

Before the camp:

- Ensure that the sanchalak has publicized in the village
- Fix up the location and timing
- Indent for water
- Indent for the tent, tables, mic, and tablecloth
- Get the place cleaned up
- Get the banners fixed up
- Write the script for the message to be given at the camp
- Ensure that the appropriate stocks are ready

On the day of the camp:

- Staff to be dressed neatly
- Medical staff to use aprons
- Use the mobile van to play appropriate CDs
- Play music to attract audience
- Carry the appropriate literature
- Distribute the handbills
- Record the patient details and also the drugs dispensed
- Record the learnings

Source: ITC

Exhibit 14:
Business Model

(a) Assumptions

Number of days in a year	300	
Village population	1,000	
Number of villages in a hub	200	
% of people enrolling in insurance	50%	
Number of members per family	5	
OP visits per capita for insured (assumption)	3	
OP visits per capita for uninsured (assumption)	1.5	
% patients needing OTC drugs	50%	
% of insurance patients seeking referral care	25%	
% of noninsurance patients seeking referral care	10%	
% patients needing lab tests	25%	
% patients purchasing drugs	50%	
Noninsurance pharmacy sales per day	30	
Hub doctor standalone consultations/day	20	
OTC drugs/kits sales per VHC, ₹ per person	125	
COGS	80%	
Transport	5%	
VHC commission on OTC drug/kit sales	5%	
Prices (₹)		
VHC standalone consultation	20	
HUB doctor standalone consultation	20	
Standalone pharmacy revenue per ticket	40	
VHC noninsurance referral consultations	40	
Lab tests	40	
Insurance premium per family per year	400	
Costs (₹)		
VHC standalone consultation	10	
VHC Insurance consultations	3	
HUB doctor standalone consultation	0	doctor is salaried
Referral lab tests	20	
Pharmacy (standalone)	80%	
Pharmacy (insurance)	25%	

(b) One-Time Costs (Village and Hub Levels)

Category	Village Level (₹)	Hub Level (₹)
Human Resources	60,000	25,000
Training	200,000	118,500
Marketing	200,000	-
Supply Chain	200,000	15,000
Insurance Delivery	1,550,000	-
Software	-	770,000
Infrastructure	-	393,000
TOTAL	2,260,000	1,321,500

(c) Capital Costs at Village Level

Category	unit price (₹)	Cost (₹)
Handheld device	30,000	6,000,000
Glucometer	750	150,000
BP machine	1,450	290,000
Ht/Wt machine	500	100,000
Stethoscope	400	80,000
Thermometer	50	10,000
Total		6,630,000
Depreciation for handheld device @ 15%		900,000

(d) Capital Costs at Hub Level

Category	Cost (₹)
Computers	60,000
Video conference equipment	100,000
Lab equipment	100,000
Neurosynaptic kit	50,000
Furniture & fixtures	50,000
TOTAL	360,000
Depreciation for computers @ 60%	36,000
Depreciation for others @ 10%	30,000

(e) Fixed Costs per Hub

Category	Cost (₹)
VHC connectivity costs	477,600
Transportation expenses	180,000
Call center costs	417,600
HR cost	1,662,000
TOTAL	2,737,200

(f) Profit and Loss Statement

	Volumes	Revenue	Costs
Choupal Level		(₹)	(₹)
VHC standalone consultations	150,000	3,000,000	1,500,000
VHC insurance consultations	300,000	0	900,000
# noninsurance purchasing OTC drugs kits	75,000	9,375,000	8,437,500
# insurance purchasing OTC drugs kits	150,000	18,750,000	16,875,000
Hub Level			
# insurance referrals	75,000	0	0
# noninsurance referrals	15,000	600,000	0
# lab tests (w/ insurance)	18,750	0	375,000
# lab tests (w/o insurance)	3,750	150,000	75,000
# pharmacy w/ insurance	37,500	0	1,200,000
Standalone consultations	6,000	120,000	0
Standalone pharmacy	9,000	360,000	288,000
Network Level			
Insurance premiums (per family)	20,000	8,000,000	
Subtotal		40,355,000	29,650,500
Contribution Margin		10,704,500	
Total Fixed Cost			2,737,200
Depreciation			966,000
PBIT		7,001,300	

Source: ITC

Endnotes

- ¹ India Ministry of Health & Family Welfare. "Rural Health Statistics in India 2010." NRHM Health Management Information System (HMIS) Portal, Web. 4. Jan. 2013.
- ² Report of the Expert Committee on a Comprehensive Examination of Drug Regulatory Issues, including the problem of spurious drugs. Ministry of Health and Family Welfare, Government of India, November 2003.
- ³ Indian Market Research Bureau study, cited in Chapter 2 of Jon Eliot Rohde and Hema Viswanathan, *The Rural Practitioner* Oxford University Press, New Delhi, 1995.
- ⁴ Jon Eliot Rohde and Hema Viswanathan, *The Rural Practitioner*, Oxford University Press, New Delhi, 1995. (Chapter 6).
- ⁵ *Ibid* (Chapter 4).
- ⁶ *Ibid*, page 84. The patient showed classic symptoms of dehydration. Indeed a needless loss of life.
- ⁷ *Ibid* (Chapter 4).
- ⁸ *Ibid* (Chapter 7). More recently, charges of ₹ 30 have been observed.
- ⁹ Berman, Peter. "Rethinking Health Care Systems: Private Health Care Provision in India." *World Development*, Vol. 26, No. 8, pp. 1463-1479, 1998.
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- ¹² Duggal, R. "Healthcare Budgets in a Changing Political Economy." *Economic and Political Weekly*, May 1997:17 –24.
- ¹³ Anupindi, R., et al. "Healthcare Delivery Models and the Role of Telemedicine." In *Indian Economic Superpower: Fiction or Future* (edited volume), World Scientific, Singapore, Spring 2009.
- ¹⁴ <http://www.hmri.in> (accessed December 31, 2012).
- ¹⁵ <http://www.visionspring.org> (accessed December 31, 2012).
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- ¹⁷ http://www.unilever.com/images/es_Project_Shakti_tcm13-13297.pdf (accessed December 31, 2012).

Notes

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