



OPERATION ASHA



CONTINENT

Asia



COUNTRY

India



HEALTH FOCUS

Tuberculosis



AREAS OF INTEREST

Community health workers, Last mile distribution,
Digital technology



HEALTH SYSTEM FOCUS

Service delivery, Health workforce

OPERATION ASHA, INDIA

Decentralizing tuberculosis diagnosis and care through a community-based model that closes the delivery gap experienced by low-income patients in India.

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ABBREVIATIONS

CEO	Chief executive officer
DOTS	Directly Observed Treatment, Short-course
HIV	Human Immunodeficiency Virus
INR	Indian Rupee
MDR-TB	Multidrug-resistant tuberculosis
NGO	Nongovernmental organization
Op ASHA	Operation ASHA
PLoS	Public Library of Science
Rs	Rupees
SMS	Short Message Service
SOP	Standard operating procedure
TB	Tuberculosis
US\$	United States dollar
WHO	World Health Organization
XDR-TB	Extensively drug-resistant tuberculosis

CASE INTRODUCTION

Operation ASHA (Op ASHA) is a community-based model to improve delivery of health care services for low-income tuberculosis (TB) patients in India and, more recently, Cambodia. India has the highest burden of TB globally, with 2.2 million new cases and 250 000 deaths annually, and a growing number of MDR and XDR TB cases (Dhanaraj et al., 2015). Although the public sector in India offers free TB services, critical challenges exist in the pre-treatment loss to follow-up, and in treatment adherence. For low-income communities especially, challenges arise from long commuting distances to health care facilities, long queues and waiting times, hidden costs to receive treatment, and missed days of work due to these access constraints. Founded as a nongovernmental organization (NGO) in 2006, Op ASHA seeks to restore hope to people affected by TB across India by delivering the best practice Directly-Observed Treatment, Short-course (DOTS) strategy in a novel, accessible way.

In urban areas it does this by establishing community treatment centres in partnership with local individual informal providers, merchants or religious institutions. The responsibilities of these community providers entail case identification, patient enrolment, observing daily treatment adherence through DOTS, and counselling. Op ASHA supplies them with the pre-packaged TB medication provided by public health facilities. These partners receive a monthly allowance to participate and also benefit from the increase in numbers visiting their shops.

In rural areas, Op ASHA trains and employs community members to take the diagnosis and care of TB directly to patients. These community providers, often young adults, play a vital role in transporting medicines to patients' homes in the villages, monitoring compliance, and assisting patients to travel to health facilities if necessary. To promote compliance, Op ASHA has designed an internet-enabled application linked to a biometric recording system, which monitors patient drug-adherence and the effectiveness of community providers in supporting patients to receive and comply with their treatment. Through fingerprint biometric technology, every dose is monitored, records are secure, and patients can be tracked across all centres.

The Op ASHA case study illustrates how trained members from low-income communities could effectively overcome the last-mile delivery gap in TB care by extending services beyond the health care facility. Clear incentives and targets motivate community workers while also ensuring that TB patients complete their treatment. It also shows how innovative nongovernmental organizations can play a role in creating effective models to complement public sector health care service delivery.

“So what we have done is this, we’ve utilized the community to bridge the gap between the disadvantaged and the government infrastructure. We provide the vital link between the two.” (Dr Shelly Batra, Co-founder and President, Op ASHA)

1. INNOVATION AT A GLANCE

Organization Details

Organization name	Operation ASHA (Op ASHA)
Founding year	2006
Founders' names	Dr Shelly Batra (Indian), Sandeep Ahuja (Indian)
Current heads of organization	Dr Shelly Batra (President), Sandeep Ahuja (CEO)
Organizational structure	Nongovernmental organization
Size	51 employees, 126 community providers, 4091 community partners

Innovation Value

Value proposition	A community-based model that decentralizes TB diagnosis and care and closes the delivery gap experienced by low-income patients in India
Beneficiaries	Low income populations in rural and urban areas in India and Cambodia
Key components	<ul style="list-style-type: none"> • Using existing community locations (shops, religious institutions, etc.) as treatment centres for DOTS • Employing community providers to take TB care directly to patients, especially in rural areas • Using a specially developed technology platform to track compliance and adherence to care

Operational Details

Main income streams	Donor grants, government subsidies, research grants and revenue generated through technology sales
Annual expenditure	Total: US\$ 1 021 548 (2013-2014): India - US\$ 749 155; Cambodia - US\$ 272 393
Cost per person served	Op ASHA delivery costs per person: India - US\$ 80; Cambodia - US\$ 89 Government contribution (drugs, hospital care, laboratory diagnostics): India - US\$ 115; Cambodia - US\$ 335

Scale and Transferability

Scope of operations	India and Cambodia (289 treatment centres across nine states in India; two provinces in Cambodia)
Local engagement	Partnership with Indian National Tuberculosis Control Programme, who provide treatment and diagnostics free of charge.
Scalability	<p>The contextual considerations for adopting the Operation ASHA model:</p> <ul style="list-style-type: none"> • a high-burden TB country; • a National Tuberculosis Programme willing to provide drugs and diagnostics free of charge; • political will and support; • community members willing to be employed and to serve the TB-affected members of their community; • a local nongovernmental organization willing to be the programme implementer.
Sustainability	<p>Op ASHA aims to increase its sustainability by:</p> <ul style="list-style-type: none"> • keeping operational costs at a minimum; • expanding their services to include research-partnerships and other disease screening; • building a technology-based social enterprise (mASHA) where the internally developed technology platform is sold to government departments and organizations.

2. CHALLENGES

Despite great global momentum and action for change, in 2014 there were 9.6 million new cases of TB globally (Murray et al., 2014). Although death rates have halved over the past 15 years, TB claimed 1.5 million lives worldwide in 2014 and for the first time, TB-attributed deaths exceeded HIV-attributed deaths (World Health Organization, 2015).

Two main challenges hinder global efforts to decrease the burden of TB. The first is the failure to diagnose and treat TB in a timely manner. Estimates indicate that 37.5% of cases globally (3.6 million) were unreported to national authorities and thus further transmission continues to occur. The second is poor drug compliance, resulting in the increasing emergence of multidrug-resistant (MDR) and extensively drug-resistant (XDR) TB (World Health Organization, 2015).

Of the total number of TB cases globally, 54% of TB occurs in India, China, Indonesia, Nigeria and Pakistan. India has the highest burden of TB globally, with 2.2 million new cases and 250 000 deaths annually (Dhanaraj et al., 2015). The revised National TB Control Programme was implemented across India in 2006 and focused on standardising diagnostic procedures, ensuring adequate and free drug availability, and supporting patient adherence through the DOTS (Directly Observed

Treatment, Short-course) strategy (Central TB Division, Ministry of Health and Family Welfare, Government of India, 2015). Although the programme achieved success in reducing mortality, the incidence of TB in India has not reduced in the same manner and there is a growing number of MDR and XDR TB cases (World Health Organization, 2015).

The burden of TB has been strongly linked to poverty levels and other social determinants, such as overcrowding and malnutrition (Lönnroth et al., 2010; Bates et al., 2004). In India, 21.9% of the population (273 million people) live below the national poverty line of US\$ 1.90 per day (World Bank, 2016). Although the public sector offers free TB services, critical challenges exist in the pre-treatment loss to follow-up and in treatment adherence. For populations living below the poverty line, some of these challenges arise from long commuting distances to health facilities, long queues and waiting times, hidden costs, and missed days of work and hence loss of income. In addition, TB in India remains severely stigmatized and can lead to those affected being abandoned or ostracized by their families and communities (Storla, Yimer & Bjune, 2008; Swaminathan, 2014). To address these barriers and challenges, innovative approaches are required that leverage existing resources to improve health care delivery.

3. INNOVATION IN INTERVENTION

The Op ASHA model originated from more than a decade of community-engagement and the deep awareness of the challenges faced by slum dwelling populations in New Delhi, especially in accessing health care. Since Op ASHA was established in 2006, it has experienced multiple iterations and its development continues to be informed by the needs of patients and families affected by TB. From the outset, the founders, Dr Shelly Batra and Sandeep Ahuja, were determined to create a

comprehensive model to deliver care directly to the disadvantaged.

Keeping in mind all these challenges, Sandeep and I came up with a solution and the solution was doorstep delivery. Let's take TB treatment to the doorsteps of the disadvantaged... So we started with basically a community-driven model and the best way to do the community-drive model was to use existing community infrastructure. (Dr Shelly Batra, Co-founder and President, Op ASHA)

Op ASHA operates in India and Cambodia since 2010. It seeks to restore hope to people affected by TB across India by delivering the best practice DOTS strategy in a novel way, based on the three core components described below.

3.1. COMMUNITY TREATMENT CENTRES – “INNOVATION IN LOCATION”

Supported by the National Tuberculosis Programme, all Indians are able to receive TB treatment free of charge. Major barriers remain for achieving the accessing of regular treatment for six to eight months. Public facilities are often out of reach and upon arrival, overcrowded with patients. Patients attending these facilities face the significant stigma associated with the disease. These challenges nevertheless provide an opportunity to leverage the free treatment resources and make them available in novel locations in closer proximity to patients' homes. Op ASHA has partnered with a range of community members to establish DOTS centres in urban slum areas within a 1.5 km radius of a patient's home. Many existing non-health facilities in such communities operate with early morning and late night opening hours. Temples are one example. The use of such venues enables patients to access treatment while their privacy is maintained. Teashops and provision shops also are often more accessible and acceptable than designated TB centres. Op ASHA sets out to make each of these facilities partners in the model and supplies them with the pre-packaged TB medication provided by public health facilities. The benefit is easy for the partners to understand as the number of people visiting their shop or 'practice' increases and they also receive a monthly allowance to participate.

3.2. COMMUNITY PROVIDERS

A large group of community providers has been mobilized to facilitate DOTS, as the vital link between the patient and the public health facility or the community treatment centre. The responsibilities of community providers entail case identification, patient enrolment, observing daily treatment adherence, and counselling. In both urban and rural settings, 126 community providers play a central role between the patient and his disease. *“So what we have done is this,*

we've utilized the community to bridge the gap between the disadvantaged and the government infrastructure. We provide the vital link between the two.” (Dr Shelly Batra, Co-founder and President, Op ASHA)

Because TB is highly stigmatized, finding the first willing provider was not easy, but soon TB survivors came forward to support and serve their fellow community members. Since then, older women not in paid employment, and young, unemployed men and women have also joined. Community providers come from the local neighbourhood and often from a disadvantaged background themselves. To join, they need to have basic reading, writing and mathematical skills. Over time, a standardized training programme has been developed to equip providers with the appropriate level of operational information and knowledge about the disease. Community providers are equipped with a backpack in which they carry the TB drugs, over-the-counter medicines to counteract symptoms of drug intolerance, and the e-Compliance system (see below).

The ratio of patients to providers is limited to 60:1 or less, to ensure enough time is available to provide proper care. The treatment of each patient extends to their whole family. By focussing on family counselling and education, the chances are reduced that the affected person will be shunned and ostracized. Rather, the family context becomes a key source of support and motivation to complete treatment.

3.3. TECHNOLOGY PLATFORMS FOR MONITORING

From a desire to learn whether the work is making an impact, Op ASHA now has a team of software developers working in-house (mASHA). One of the most important aspects of TB care is monitoring the treatment success rate. International standards have set this at 85% and higher. By ensuring adherence, i.e., preventing missed doses and defaults, TB can be successfully treated, multi- and extensive- drug resistance can be prevented, and transmission curtailed. Initially with the help of Microsoft Research, the team has subsequently developed three applications:

e-Detection

An application based on algorithmic guidelines to support a community provider to identify and enrol new cases of TB.

e-Compliance

An internet-enabled application linked to a biometric recording system which monitors patient drug-adherence and the effectiveness of community providers to support patients in receiving and complying with their treatment. Through fingerprint biometric technology, every dose is monitored, records are secure, and the patient can be tracked across all centres. This robust data platform provides the organization with the ability to respond quickly to issues arising for partners, providers or patients. It has also enabled multiple collaborative research opportunities with international academic partners and an additional revenue stream. *“We take action at a single missed dose, we don't wait for two months. We believe TB treatment means adherence has to be there. There's no TB treatment if treatment is incomplete.”* (Sandeep Ahuja, Co-founder and CEO, Op ASHA)

Lab alert

This SMS-based application supports the timely communication of sputum results so that immediate action can be taken. The Lab Alert application links the diagnostic laboratory and the community provider. Once a sputum sample tests positive for mycobacteria TB, an SMS is sent to the community provider, who can fast-track patient enrolment on medication and so reduce further disease transmission.

These applications have been refined through trial and error and user feedback. It was important for the applications, especially e-Compliance, to be culturally appropriate. Biometric technology has been successfully used among illiterate populations in India and is not perceived with fear.

In addition, appropriate signs and symbols are used in such a way that the illiterate patient can feel secure that the data are being captured correctly. These applications have been adapted for programmes on diabetes, haemophilia and vaccinations. *“So, if you see our application, it is very simple, doesn't have lot of data points, all you have to do is give the fingerprint and it will show the number, and demand the number with the box. So usability is very, very important.”* (Employee, mASHA team)

3.4. URBAN AND RURAL APPLICATIONS

Urban model

Within urban slum areas, multiple community treatment centres have been established in partnership with informal providers, merchants or religious institutions. Individual community providers, mainly housewives, facilitate patient treatments from locations within their local community. Here, they monitor patient adherence with the help of e-Compliance. A second function is to find new cases in densely populated slum areas. Each centre treats on average 24 patients annually.

Rural model

Vast distances between public facilities and rural villages make access to these facilities the biggest barrier for poor people. Community providers, often young adults, play a vital role in transporting medicines to patients' homes in the villages, monitoring compliance, and assisting patients to travel to health facilities if necessary. Rural dirt roads, often flooded from monsoon rainfall, require a fleet of motorcycles to fulfil this objective. In the Mekong delta of Cambodia, community providers go on bicycles to visit patients and distribute their medication. Then they put their bicycles on boats and row from island to island to meet with other patients. Good transport facilitates greater efficiency.

4. IMPLEMENTATION

4.1. INNOVATION IN IMPLEMENTATION

Leveraging existing resources

Through a partnership with the Revised National Tuberculosis Control Programme, Op ASHA has become an extension of government services and is able to leverage drugs, physicians, and diagnostics free of charge. Drugs, for example, account for 33% of the overall programme costs, and physicians and diagnostics for an additional 13%, all of which are covered by the government. Annually Op ASHA leverages almost double its own contribution in the form of contributions in kind. The cost component for Op ASHA is 36% of total costs.

Ongoing monitoring and measurement

The technology platforms provide Op ASHA with the opportunity to be a data-driven organization with the ability to act, modify or iterate, based on the closed-loop cycle established with patients. These platforms are used to monitor or measure everything that is undertaken. *"I'm here to deliver outcomes, which are measureable – measurement is a part of Operation ASHA's basic philosophy. That is how we devise programmes – a programme cannot exist as far as I am concerned if it does not have a measurement method."* (Sandeep Ahuja, Co-founder and CEO, Op ASHA)

Op ASHA has developed its operations to conduct research projects pertaining to its work. These include: the effectiveness of results-based remuneration; perceptions and effectiveness of the biometric e-Compliance system; and an exploration of community versus provider new case identification. Each of these studies has been supported by a variety of international academic institutions.

Results-based remuneration

One mechanism that has supported Op ASHA's effectiveness is adopting a robust incentive structure for its staff. The remuneration of community providers and senior programme managers is incentive-based. Community providers receive a base salary of INR 1000 per

month (US\$ 15). Over and above this are incentive payments whose monetary value is based on the location. In Gwalior, a large rural town surrounded by tribal villages in the state of Madhya Pradesh, community providers can increase their income through three different incentives: INR 225 (US\$ 3.30) for each new TB patient identified, diagnosed and enrolled; INR 1250 (US\$ 18.50) for each patient who achieves an 85% or higher compliance with their medication schedule and a smaller incentive for avoidance of missed treatment doses. On average, community providers earn INR 5400 per month (US\$ 80) but their monthly income can be as high as INR 11 000 (US\$ 165). The biometric technology used overcomes the potential falsification of records.

Management perceives the impact and effectiveness of results-based remuneration to be positive, especially in relation to new case detection. *"I think if we talk of advantages, the biggest being that we do not need to actually push people in that case. They work on their own. It also works as a rewarding system as well as an eliminating system."* (Asyvin Vyas, Op ASHA) However, to fully understand whether results-based payments motivate community providers, enhance their efforts and lead to improved performance, or have negative unintended consequences, Op ASHA has invested in systematic research on this issue. In collaboration with an academic partner, an experimental, randomized controlled trial was conducted across five states in northern India. Following classification by city, 90 community providers were randomly allocated to two arms: 1) fixed salary, or 2) base salary with approximately 75% of final payment variable based on the following factors: detection; compliance; and missed dose avoidance. Preliminary results have been mixed but final results and recommendations will be known in 2016.

4.2. BUSINESS MODEL

Op ASHA is a not-for-profit, nongovernmental organization, registered in India and in the United States. As a partner of the National Tuberculosis Control Programme (NTCP), Op ASHA receives

20% of its income as a subsidy from the NTCP. The remaining 80% of its operations are funded through donor grants, research grants and product sales. Grants have been received from organizations such as the International Finance Corporation, GuideStar India and Global Giving. An increasing portion of its income comes from research grants. Op ASHA serves as a research partner for private and academic institutions such as the Eli Lilly Foundation, University of Chicago, Massachusetts Institute of Technology and Johns Hopkins University. Op ASHA is also able to generate revenue from sales of its mASHA technology products.

In India, the total value of the programme delivered is US\$ 2 037 337. Of this total, the National Tuberculosis Programme covers 63% of the expenditure for drugs, health professionals and diagnostics. The total operating expenditure of Op ASHA was US\$ 749 155 in 2014.

4.3. ORGANIZATION AND PEOPLE

The collaborative partnership of Dr Shelly Batra, an obstetric and gynaecological surgeon, and Sandeep Ahuja, a senior official in the Indian Revenue Services, was an unlikely one, but was formed out of their shared deep conviction to serve those in need.

In her early years of practising medicine, Dr Batra was moved by the injustice in the inequitable Indian health system. She frequently went to slum locations behind the private hospital where she was working to provide medical advice. Soon she had a long queue of patients awaiting her, each

with a long list of needs. She started fundraising by calling on friends and family to support her in supplying medications, or to fund surgery patients may require. After some time, the favours dried up and she would often get negative reactions associated with cultural perceptions of giving: people would give to their religious institution or to those working in their homes, but failed to understand why a well-off private physician would engage with lower-income communities.

One friend, Sandeep Ahuja, kept answering Dr Batra's phone calls. He supported her fundraising activities and started accompanying her on her visits to the slums. After several years of working together voluntarily, they were ready to tackle a big challenge. In 2006 they co-founded Operation ASHA, with the vision of restoring hope to people affected by TB. Today, Op ASHA comprises 30 people who operate out of their apartment-office in the middle-class residential neighbourhood of Sarita Vitar in New Delhi. This young and energetic team is daily influenced by the passion and conviction of the two co-founders, Dr Shelly Batra as President and Sandeep Ahuja as CEO.

Members of the operational team are encouraged to develop new ways to improve their work and to pioneer new solutions. Instead of outsourcing innovation development, in-house capacities have been created. mASHA, the technology arm of the organization, was established after no existing provider could be found with a ready-made adherence tracking system. Since working with Microsoft Research, capacity and capabilities have been increased to allow for ongoing development, testing and the implementation of new ideas.

5. OUTPUTS AND OUTCOMES

5.1. IMPACT ON HEALTH CARE DELIVERY

Op ASHA now operates in eight states in India, including 17 cities and 14 villages. It has 4091 community partner distribution centres in India, 51 full-time staff and 126 community providers. In Cambodia 62 community providers have been trained to provide TB care.

Op ASHA reports that 6.2 million individuals in India have been reached and have received TB education, and 41 000 patients have successfully completed TB treatment. In addition, 198 MDR-TB cases have been identified and enrolled on treatment. In Cambodia, 1 million people have been reached and 14 000 initiated on treatment. Op ASHA's average treatment success rate is 88% and shows a default rate of less than 3%.

Op ASHA reports cost per drug-sensitive patient (those whose TB bacteria are susceptible to treatment) to be US\$ 80 (US\$ 27 for detection and US\$ 53 for treatment) and US\$ 1000 for drug-resistant TB patients. Comparative data on these two categories are scarce in India. Costs per drug-sensitive patient associated with Delhi public-private DOTS programmes (2002) were US\$ 143 (Floyd et al., 2006). Cost comparisons from other countries suggest more substantial savings. For example, a 2013 study from South Africa found cost per patient for drug-sensitive TB to be US\$ 257 and for drug-resistant TB US\$ 6772 (Pooran et al., 2013).

5.2. ECONOMIC BENEFITS

By mobilising and empowering communities, Op ASHA has created employment opportunities for over 200 community members in India and Cambodia. Many of the providers are women from disadvantaged areas. The opportunity for income and skills development has transitioned many out of poverty.

5.3. COMMUNITY PERCEPTIONS

The challenges surrounding access to health care services remain very real for people in both urban and rural settings in India. Accessing services from private providers, although in closer proximity, often comes at an unsustainable cost. One of Op ASHA's patients speaks of the difficult choice she had prior to Op ASHA's intervention when she either had to travel far to access free treatment from the public health care facility or pay for treatment at a nearby private provider. Op ASHA's model provides treatment that is free and conveniently located. *"She says she is thankful for the medicine from Operation Asha that she gets free of cost. She says that's why she just left the treatment half way; in future she will take the medicine."* (Patient, Urban Slum) (translated on site)

The tribal village community members live in remote areas, connected by dirt roads. Although free treatment is available to them at public health facilities, transportation is expensive or completely absent at certain times of the year. In the monsoon months, the roads are flooded and only passable

on foot. Health facilities are 8 – 50 km away from villages. Transport costs to reach a facility could be between INR 50 – 200 (US\$ 0.75 – 3.00), too expensive for those on a daily income of INR 100 (US\$ 1.50). *"We are telling you we have no money for the fare. It takes 50 rupees from here."* (Community member, tribal village)

The work of Op ASHA is making a visible impact in these communities by bridging a critical delivery gap. Communities are grateful to receive visits every second day from the Op ASHA community provider and do their best to ensure the safety of providers visiting them. The arrival of a provider attracts villagers to come out of their straw dwellings to witness his/her work. During a visit, each patient brings his/her canvas-stretched 'bed' out of the hut and a family member goes to the well to bring water for the patient to swallow the medication. The provider, carrying a backpack of supplies, dispenses the TB medicines, observes their consumption, and completes the process by using the fingerprint e-Compliance system to confirm that the dose has been administered.

5.4. ORGANIZATIONAL MILESTONES

Op ASHA has achieved a long list of accolades and commendations in many public arenas. Dr Batra received the Schwab Foundation Social Entrepreneur of the Year Award (2014). Op ASHA is now recognized as an influential global NGO, with notable achievements in social impact and awards in mobile technology innovation.

For Dr Shelly Batra and Sandeep Ahuja, the greatest milestone was opening their first community centre after overcoming many professional and personal hurdles. Over the past nine years, their vision of a TB-free world has continued to be a strong motivator. The opportunity to expand their work beyond India was also a key milestone. In December 2010, operations started in Cambodia and after four years, the organization is serving 10% of the country's TB-affected population. As the only NGO in Cambodia to be awarded a Global Fund grant, it is now possible to train 1100 community members as providers and hence expand services to 18% of TB-affected patients.

The organization has great pride in its technology systems and has taken the opportunity to commercialise these, paving the way for their use in other countries. *"Our technology has been*

made keeping in mind the needs of the people, their cultural perceptions, their abilities, and even their cognitive abilities." (Dr Shelly Batra, Co-founder and President, Op ASHA)

6. SUSTAINABILITY

As an organization with a clear vision to scale their work, developing a sustainable model has been a conscious focus.

Keeping operational costs at a minimum

All efforts are undertaken by the senior operational team to keep running costs at a minimum. Where possible, building rental costs are kept low: the headquarters operate out of a low-cost residential apartment in New Delhi and costs associated with renting their own treatment centres in the community are avoided by partnering rent-free with existing merchants, religious institutions and unlicensed providers. Community partners and providers in addition remove the overtime remuneration costs associated with health facilities. The current costs associated with administration and fundraising are 22% of the total expenditure. To attract and retain talent, Op ASHA offers market-based salaries to their operational team. However, the salaries of the two founders have been reduced for several years. Leveraging existing free diagnostic and treatment resources provided in the public health system remains an important aspect of delivering the model at an affordable cost.

A growing service offering

Op ASHA has expanded its service to include research partnerships and other disease screening. The large numbers of patients served by Op ASHA across India, coupled with its robust electronic data collection platform (e-Compliance), has brought several international research partners and academic institutions to their doorstep. Three large-scale research studies are underway in collaboration with University College London and Johns Hopkins University.

In addition, Op ASHA provides services to pharmaceutical companies in the form of screening of large groups within the general population in health camps. In partnership with Medtronic, 10 000 TB patients were screened for diabetes and cardiovascular disease. A second screening initiative with Baxter Pharmaceuticals was undertaken to identify patients suffering from haemophilia.

A technology social enterprise

mASHA, the social enterprise technology arm, has demonstrated the commercial value of its products. The technology platform has been sold to government departments and organizations like the United Nations Human Rights Commission, Public Health Foundation India, and NGOs in Uganda.

7. SCALABILITY

Dr Shelly Batra and Sandeep Ahuja have designed and built their organization with scaling in mind from the outset. They spent six months learning from operational experiences in their first community treatment centre, and then developed standardized training and operating procedures. In 2010, Op ASHA scaled its operations to Cambodia and in 2016, will be serving 18% of TB-affected patients in the country. This experience has crystallized several key principles of their strategy.

Scaling principles, not products

The Op ASHA team believes in developing solutions which fit the context. Valuable lessons and core principles are distilled and ready to be adapted to new circumstances. From results-based remuneration schemes to community mobilisation, each organizational feature holds relevance in new settings if appropriately contextualized.

All this technology, all this model, we develop every SOP here in this country because that is where we are set. Then we export it, not exported as a package, but exported as core principles which are then piloted in another country and adapted to local requirements by the local people so they produce results. (Sandeep Ahuja, Co-founder and CEO, Op ASHA)

Scale through local empowerment

To catalyse operations in Cambodia, two consultants from the India team initially spent two years in the country. The long-term vision is for the India team to build sufficient local capacity in Cambodia so that a locally-owned NGO could be established, allowing the India team to subsequently play a technical and fundraising advisory role.

Scale through collaboration

For the complete elimination of TB to occur, work cannot be undertaken by a single NGO. Op ASHA wants to see NGOs, academic institutions and ministries of health join forces. The success achieved in India demonstrates that a collaborative partnership approach is the key.

The founders' vision is to continue scaling to many more countries. New locations under consideration include Romania, Afghanistan and South Africa. For the delivery system to be successful, three minimum enabling factors must be in place: 1) a strong national TB programme and partnership with the national ministry of health to provide free diagnostics and treatments; 2) a local NGO willing to become the local country partner; and 3) sufficient funding to hire local staff as community providers.

8. KEY LESSONS

8.1. IMPLEMENTATION LESSONS

Empathetic and deep understanding

Solutions or interventions, capable of changing health systems, need to be well grounded in the daily lived experiences of those whom the solution is meant to serve. It is also of utmost importance to have a deep understanding of the local system, the way it operates and the gaps in the existing health care delivery system. By engaging at both grassroots and systems levels, innovation opportunities become visible and simple, new low-cost solutions can be identified. *“Because unless you develop a very good understanding of the challenges, of the gaps, you cannot fill the gaps, you cannot connect the dots.”* (Dr Shelly Batra, Co-founder and President, Op ASHA)

Every context is different

Often innovations, once developed, lose their agile nature. Op ASHA has learned to avoid becoming a passive implementer; to remain attuned instead to the contextual, cultural and economic nuances across geographies. *“Each state, each city, has a different incentive because the cost of living is different, and what they expect is different. In some cities, an incentive might not work at all.”* (Sandeep Ahuja, Co-founder and CEO, Op ASHA)

Health care cannot be volunteerism

Health services provided outside the formal health system carry the expectation of delivery free of charge and community interventions frequently imply volunteerism. A health system cannot be strengthened on the basis of volunteers alone. Providing even small salaries enhances accountability and trust.

8.2. PERSONAL LESSONS

Professional acclaim and large-scale impact does not come without personal sacrifice. For both Dr

Batra and Sandeep Ahuja, decisions had to be made at many occasions that incurred great professional cost. Dr Batra experienced ridicule and discouragement from her medical peers for choosing the path of service in a cultural context where class and caste factors still prevail. The hours invested in developing the project meant that as a mother, she had to leave her own TB-affected daughter in the hands of other family members, in order to fundraise. Sandeep Ahuja's decision to pursue Op ASHA full time was not linked to financial success. Instead, for many years, both he and Dr Batra earned nothing from their work for Op ASHA.

It's a choice, a path to choose... So they must remember that if they keep on persevering, they will find their goal. I remember when I started Operation ASHA, very clearly there were two roads in front of me. One was a path of a successful private practice, where you have money, you have glamour, you have fame, you are invited to the best parties and you can buy diamonds and cars or whatever you want... And equally clearly I could see the other path, where I could see nothing but terrible hardships and darkness, and I could see rocky paths and boulders, it was like climbing a huge and frightening and gargantuan mountain. (Dr Shelly Batra, Co-founder and President, Op ASHA)

In recent years, Dr Batra's pioneering vision for Op ASHA has been celebrated and rewarded internationally. She has invested many hours of unrecognized work, overcome many hurdles and made difficult decisions. One lesson she learned many years ago has remained with her. *“And when I went to the nuns, the nuns taught me several other things, and I remember one sentence, one small line from a prayer, ‘To give and not to count the cost.’ I will never forget this ‘To give and not count the cost.’”*

CASE INSIGHTS

1. Innovative nongovernmental organisations can play a role in addressing gaps in public sector health care service delivery. They are agile and creative in leveraging new resources to support low-income, hard to reach populations.
2. Trained members from low-income communities could effectively overcome the last-mile delivery gap in TB care by extending health care beyond the health care facility. Clear incentives and targets motivate community workers while also ensuring that TB patients completes his/ her treatment.
3. An inexpensive technology system can enable compliance monitoring of TB patients and also provide additional opportunities for research.

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