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# MOBILE MONEY FOR HEALTH CASE STUDY COMPENDIUM



October 2015

This publication was produced for review by the United States Agency for International Development. It was prepared by the Health Finance and Governance Project.

## **The Health Finance and Governance Project**

USAID's Health Finance and Governance (HFG) project helps to improve health in developing countries by expanding people's access to health care. Led by Abt Associates, the project team works with partner countries to increase their domestic resources for health, manage those precious resources more effectively, and make wise purchasing decisions. The five-year, \$209 million global project is intended to increase the use of both primary and priority health services, including HIV/AIDS, tuberculosis, malaria, and reproductive health services. Designed to fundamentally strengthen health systems, HFG supports countries as they navigate the economic transitions needed to achieve universal health care.

**October 2015**

**Cooperative Agreement No:** AID-OAA-A-12-00080

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# ACRONYMS

|                |  |
|----------------|--|
| <b>ASHAs</b>   | Accredited Social Health Activists                         |
| <b>CA</b>      | community agents   |
| <b>CAF</b>     | Care of Afghan Families                                    |
| <b>CCBRT</b>   | Comprehensive Community-Based Rehabilitation in Tanzania   |
| <b>CCT</b>     | conditional cash transfer                                  |
| <b>CHW</b>     | community health worker                                    |
| <b>DHS</b>     | District Health Service                                    |
| <b>DOT</b>     | directly-observed treatment                                |
| <b>EPI</b>     | Expanded Program for Immunization                          |
| <b>FP</b>      | family planning  |
| <b>HFG</b>     | Health Finance and Governance                              |
| <b>IRD</b>     | Interactive Research and Development                       |
| <b>JLN</b>     | Joint Learning Network for Universal Health Coverage       |
| <b>MAMA</b>    | Mobile Alliance for Maternal Health Action                 |
| <b>MMT</b>     | mobile money transfer                                      |
| <b>MOHFW</b>   | Mobile Alliance for Maternal Health Action                 |
| <b>MoPH</b>    | Ministry of Public Health                                  |
| <b>MSM</b>     | Marie Stopes Madagascar                                    |
| <b>mSTAR</b>   | Mobile Solutions Technical Assistance and Research Project |
| <b>NHRM</b>    | National Rural Health Mission                              |
| <b>NIPI</b>    | Norway-India Partnership Initiative                        |
| <b>NHIF</b>    | National Hospital Insurance Fund                           |
| <b>OpenMRS</b> | Open Medical Record System                                 |
| <b>OpenSRP</b> | Open Smart Registration Platform                           |
| <b>PSI</b>     | Population Services International                          |
| <b>PFP</b>     | Pay-for-performance  |
| <b>RFID</b>    | radio frequency identification                             |
| <b>TB</b>      | Tuberculosis   |
| <b>TBA</b>     | traditional birth attendants                               |
| <b>UNOPS</b>   | United Nations Office for Project services                 |
| <b>UTM</b>     | Union Technique de la Mutualité Malienne                   |
| <b>USAID</b>   | United States Agency for International Development         |
| <b>WHO</b>     | World Health Organization                                  |



# I. INTRODUCTION

## I.1 Background

Globally, 2.5 billion people are “unbanked,” lacking access to formal financial services. As a result, roughly one third of the world’s population is forced to rely on cash transactions or informal financial systems, which can often be unsafe, inconvenient, and expensive. Among the unbanked, however, a billion have access to a mobile phone, and mobile-based financial services are quickly closing the financial access gap. Mobile financial services now cover more than 60 percent of developing markets, reaching an estimated 299 million registered mobile money users, of which 103 million are estimated to be active.<sup>1</sup>

Recognizing the potential of mobile-based financial services, the United States Agency for International Development (USAID) is committed to accelerating the adoption and uptake of mobile money based on its potential to increase financial inclusion, root out corruption, and provide economic benefits to communities. To support these goals, the USAID Global Health Finance and Governance (HFG) Project seeks to promote the use of mobile money in health programs, both as catalyst for uptake in communities and to strengthen health systems.

### I.1.1 Mobile Money Landscape

Mobile phone usage is one of the fastest-spreading technological innovations of recent years. From 2000-2010, mobile phone subscriptions increased by more than 1,500 percent in low- and middle-income countries, from 4 to 72 subscriptions per 100 inhabitants.<sup>2</sup> As access to mobile phones expands in developing markets, money transfer systems based on mobile phone technology are being leveraged to tackle development challenges across many different sectors, including agriculture, education, finance, and health.

Mobile money has grown rapidly as a substitute for cash in developing countries. More than 70 countries have implemented mobile money platforms as alternatives to traditional cash payment systems or formal financial services, the majority of which are located in sub-Saharan Africa. These systems enable funds to be deposited, transferred, and withdrawn electronically through mobile phone accounts, bringing financial services to the previously un- and underbanked.

#### Box I.1 – Mobile Money Defined

“Mobile money” consists of financial transactions that are conducted using a mobile phone, where value is stored virtually (e-money) in an account associated with a SIM card. Individuals can deposit cash onto a mobile account, make transactions between accounts, and withdraw funds as cash. Mobile money transactions are compatible with basic phones and do not require internet access.

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<sup>1</sup> [http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2015/03/SOTIR\\_2014.pdf](http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2015/03/SOTIR_2014.pdf)

<sup>2</sup> <http://siteresources.worldbank.org/EXTINFORMATIONANDCOMMUNICATIONANDTECHNOLOGIES/Resources/IC4D-2012-Report.pdf>





## 1.1.2 Mobile Money and Health

Despite the recent proliferation of mobile phone usage and uptake of mobile money in developing markets, use in the health sector remains limited and, often, has not been brought to scale. While mobile money can provide a means for improving efficiency, management, and transparency of healthcare financing and transactions,<sup>3</sup> adoption has been limited. This compendium seeks to expand the knowledge base on mobile money in the health sector by drawing out trends from existing programs and examining what's worked, what hasn't, and why, while documenting recommendations and insights from past and current practitioners for future adaptation.

## 1.2 Case Study Overview

The 14 mobile money programs profiled in this compendium span a range of countries, health topics, and application types, from health insurance schemes promoting universal health coverage, to lottery voucher payments encouraging parents to vaccinate their children against polio and other diseases. For this compendium, the mobile money applications we summarize can be categorized according to the following types of financial flows in the health system:

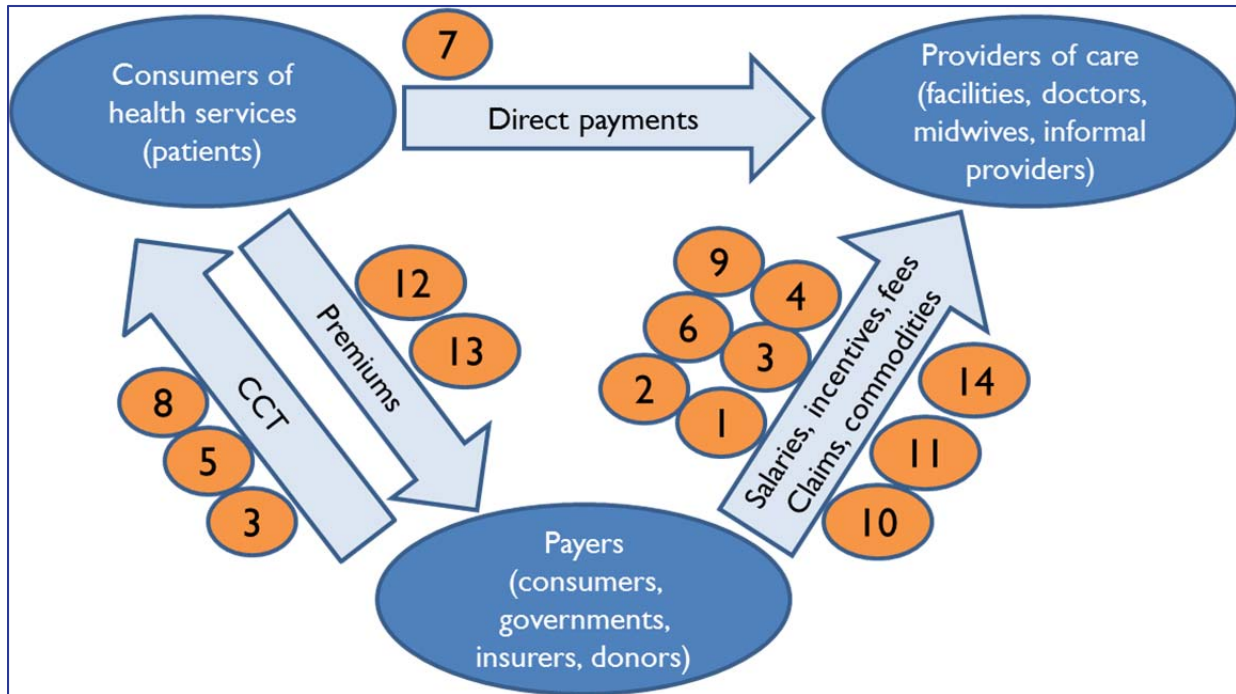
1. *Direct payments from consumers to health providers* – payments to health providers for health services or health commodities (e.g., orders of drugs and other medical supplies);
2. *Health insurance premiums* – allow the insured to send premium payments via mobile phone;
3. *Demand-side incentives, conditional cash transfer (CCT), and voucher systems* – financial incentives or vouchers to use health services made to beneficiaries (demand side) transferred through mobile phones;
4. *Other payments to health providers* – includes a broad range of payments to health providers, including salaries (direct mobile transfers of standard employee payments) and financial incentive transfers (e.g., pay-for-performance, PFP) who meet specific performance criteria. Other types of payments include claims reimbursements and other fees (e.g., ad hoc per diems, reimbursements for patient emergency transport).

Figure 1.1 illustrates the distribution of the mobile money applications featured in this compendium according to the financial flows in the health system. Nine of the featured programs use mobile money to pay health providers salaries or performance incentives [Pathfinder Kenya (1), TB Reach – Indus Hospital (2), IRD – Zindagi Mehfooz (3), Aponjon (4), Asha program (6), D-tree Tanzania (9)], reimbursements for claims [MicroEnsure Tanzania (10), Marie Stopes Madagascar (11)], or health commodities [Movercado (14)]. Three programs use mobile money to deliver cash transfers or incentives directly to health consumers [IRD – Zindagi Mehfooz (3), Paywast (5), CCBRT (8)]. The other programs featured in this compendium employ mobile money to enable consumers of health services to pay directly for health services [Ubuntu (7)] or health insurance premiums [Kenya's National Hospital Insurance Fund (12), Malian Mutuelles (13)].

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<sup>3</sup> Haas, Sherri, Marilyn Heymann, Pamela Riley, and Abeba Taddese. 2013. Mobile Money for Health. Bethesda, MD: Health Finance and Governance Project, Abt Associates Inc.

Figure 1.1: Case Studies and Financial Flows in Health System



An overview of the challenges and the solutions that mobile money addresses across all 14 case studies is provided in Table 1.1 below.

Table 1.1: Overview of Case Study Programs

| Program                      | Challenge and Solution  | Mobile Money Use                          |
|------------------------------|---|---|
| 1. Pathfinder Kenya          | <p><b>Challenge:</b> Leakages and waste of health worker payments, security risks surrounding cash payments, and lack of reliable health data all impact the provision of high quality health services in Kenya.</p> <p><b>Solution:</b> Pathfinder Kenya introduced the widespread use of mobile money for all operational and health worker stipend payments in 2012. Using performance data collected through their mobile phone platform, CommCare, Pathfinder utilizes a pay-for-performance incentive model to encourage health workers to use the mHealth application.</p> | Salaries; Provider performance incentives |
| 2. TB REACH – Indus Hospital | <p><b>Challenge:</b> Inadequate incentives for identifying and referring tuberculosis patients results in delayed detection and improper treatment.</p> <p><b>Solution:</b> The Indus Hospital and IRD partnered to develop a mobile money incentive scheme to improve and increase data on directly-observed treatment for tuberculosis.</p>   | Provider performance incentives           |

| Program                          | Challenge and Solution   | Mobile Money Use  |
|----------------------------------|--|---|
| 3. IRD – Zindagi Mehfooz         | <p><b>Challenge:</b> Immunization coverage in Pakistan remains modest and, thus, infectious diseases such as polio remain endemic.</p> <p><b>Solution:</b> Using a combination strategy of reminders and mobile money incentives, Zindagi Mehfooz encourages parents to vaccinate their newborn children against measles, hepatitis, and polio through a progressive lottery system.</p>   | Provider performance incentives; Demand-side incentives |
| 4. MAMA Bangladesh – Aponjon     | <p><b>Challenge:</b> While mobile phone penetration in Bangladesh has reached new highs, an urgent need to improve maternal, newborn, and child health remains.</p> <p><b>Solution:</b> Aponjon transitioned from cash payments to mobile financial services to issue incentive payments to community health agents who register expecting and new mothers, and their families.</p>  | Provider performance incentives                         |
| 5. Paywast – mHealth Call Center | <p><b>Challenge:</b> Distances and transportation costs prevent many women facing pregnancy complications from giving birth at health facilities with qualified medical professionals.</p> <p><b>Solution:</b> Paywast developed a mHealth call center that facilitates access to emergency medical transportation by providing free transportation for women in need, paid for using mobile money transfers to emergency transport providers.</p>   | CCT   |
| 6. ASHA Program                  | <p><b>Challenge:</b> Delayed payments, loss of work time due to travel, and a lack of transparency around amounts due to ASHAs for services rendered lead to decreased motivation amongst health workers.</p> <p><b>Solution:</b> UNOPS-NIPI and the Eko Aspire Foundation launched a pilot program to introduce mobile money savings accounts as an alternative method for transferring ASHA incentive payments for promoting universal immunization, referral and accompaniment services for reproductive and child healthcare programs, and facilitation of delivery at primary health centers.</p> | Provider performance incentives                         |
| 7. ARA – Ubuntu Afya Unit        | <p><b>Challenge:</b> There are a number of challenges preventing rural and urban poor in Kenya from obtaining quality health services, including: distance to health facilities, poor infrastructure, suboptimal quality of health services, and overworked health providers.</p> <p><b>Solution:</b> ARA developed a chain of health kiosks located in hard-to-reach locations, which offer affordable, accessible health care services that clients can pay for using M-PESA mobile money. The kiosks are further subsidized through income generated by supplemental mobile money transactions.</p> | Direct payments from consumer to health provider        |

| Program  | Challenge and Solution  | Mobile Money Use                |
|--|---|---------------------------------|
| 8. <b>CCBRT – Text to Treatment</b>                    | <p><b>Challenge:</b> There are an estimated 24,000 women in Tanzania living with obstetric fistula, because they are either unaware that treatment is available, or cannot afford transportation costs for seeking treatment.</p> <p><b>Solution:</b> CCBRT began the “Text to Treatment” program, which facilitates mobile cash transfers for transportation costs and implements an incentive scheme for identification of fistula cases.</p> | CCT                             |
| 9. <b>D-tree Tanzania</b>                              | <p><b>Challenge:</b> Transportation costs prevent underserved women from reaching emergency health services in a timely manner.</p> <p><b>Solution:</b> In Zanzibar, D-tree International is using mobile money to transfer funds for emergency transportation to traditional birth attendants who identify high risk pregnant women for referrals to health facilities.</p>  | Provider performance incentives |
| 10. <b>MicroEnsure Tanzania</b>                        | <p><b>Challenge:</b> Delays in receiving claims reimbursements for health insurance can be catastrophic for the poor.</p> <p><b>Solution:</b> MicroEnsure partners with a mobile network provider to deliver a health micro-insurance product exclusively to network subscribers. Individuals can receive claims reimbursements via mobile money, ensuring that they receive them rapidly and safely.</p>                                       | Claims                          |
| 11. <b>Marie Stopes Madagascar</b>                     | <p><b>Challenge:</b> Sending voucher claims reimbursements to health providers in rural and remote areas is administratively complicated and costly.</p> <p><b>Solution:</b> MSM offers vouchers for reproductive health services. Patients exchange the vouchers for health services at select providers, and MSM reimburses the provider via mobile money to ensure timely payments.</p>  | Claims                          |
| 12. <b>Kenya National Health Insurance Fund (NHIF)</b> | <p><b>Challenge:</b> Making monthly health insurance premium payments is inconvenient and time-consuming for members.</p> <p><b>Solution:</b> NHIF uses the widely recognized M-PESA payment platform to offer a flexible and convenient mechanism for health insurance premium payments.</p>   | Premiums                        |
| 13. <b>L’Union Technique de la Mutualite Malienne</b>  | <p><b>Challenge:</b> Making premium payments in-person is inconvenient for Mali’s mutuelle members residing in hard-to-reach areas.</p> <p><b>Solution:</b> Mali’s largest Mutuelle Health Organization partnered with a mobile network operator to develop a mobile money application to collect premium payments and manage individual payment records for members.</p>   | Premiums                        |

| Program       | Challenge and Solution   | Mobile Money Use |
|---------------|--|------------------|
| 14. Movercado | <p><b>Challenge:</b> As part of its model, Movercado reimburses retailers of health products. Rapidly and securely paying retailers and tracking their sales and inventories is critical to ensuring that vendors are incentivized to sell commodities and that products reach populations.</p> <p><b>Solution:</b> Movercado uses mobile money as a component of its larger program and technology platform to send payments safely and securely to shop vendors. They submit a code associated with the product via SMS and receive automatic reimbursements via mobile money.</p> | Commodities      |

### 1.2.1 Benefits

From the case studies, a number of trends and benefits are highlighted to inform the future expansion and scale up of mobile money initiatives in health.

- Expanding program reach** – The proliferation of mobile phone usage has allowed for a greater reach of health services to those who previously were not captured in formal financial systems. Not only has this resulted in increased membership in mobile money services, but it has also resulted in improved rates of service utilization. For example, the use of mobile money has enabled Kenya’s National Hospital Insurance Fund (Case Study 12) to extend health insurance coverage to informal sector workers who were previously without coverage.
- Time and cost savings** – By replacing cash flows, mobile money has been shown to provide time and cost savings, minimize travel times previously required with in-person distribution of payments, improve delayed payments through reductions in processing times, clear administrative backlogs, and thereby improve financial and administrative efficiency. The Aponjon program (Case Study 4) reported an annual cost savings of approximately US \$60,000 and an annual time savings of roughly 41,333 work hours due to its transition from cash payments to mobile money.
- Improved transparency, accountability, and oversight** – Mobile money provides an opportunity to curb leakages and corruption, thereby improving the transparency of financial flows. Funds can be transferred directly from a financial institution to the end beneficiaries’ mobile devices, eliminating the role of middlemen who previously could divert funds as they moved through the financial system, and ensuring more timely receipt of payments. Pathfinder Kenya, Aponjon, and the ASHA program (Case Studies 1, 4, and 6) found that mobile money improved the transparency and monitoring of payments to community health workers by ensuring that payments are sent safely and in a timely manner.
- Increased data access** – Mobile money systems can generate data that service providers and program managers can use for evidence-based decision-making on program implementation and operations. For example, the Indus Hospital (Case Study 3) uses data on mobile money transactions to monitor program performance and growth.
- Improved service delivery** – As a combination of all the benefits listed above, mobile money can help health programs and service providers strengthen their program operations in order to improve the efficiency and quality of service delivery.

## 1.2.2 Challenges

However, mobile money is not without its challenges. The uptake of mobile money within health systems has been limited, and those projects that have been successful have faced difficulty achieving scale. The most commonly cited challenges, limiting the success and roll out of mobile money initiatives in health are:

- **Low citizen awareness and utilization rates of mobile money** – Mobile money is a new concept globally. Because citizens are often unfamiliar with mobile money as an alternative to cash payments, users often express skepticism, driven by fear that their money will be lost or stolen within the system. As demonstrated by the Paywast program (Case Study 5), convincing potential users that mobile money is a viable, and safer, alternative to cash payments is imperative to the success of such projects, and requires intensive training, a well-planned communications strategy, establishment of a reliable network of trusted mobile agents, and a responsive user support/customer service mechanism. Many countries are experiencing a high rate of growth in the use of mobile money subscriptions, which indicates that unfamiliarity with mobile money transactions will rapidly diminish.
- **Client literacy levels** – Limited literacy levels among program beneficiaries has proved to be a difficult obstacle for mobile money to overcome, given that the SMS systems used to transfer funds require a minimum level of literacy to operate. This detracts from a potential user-base and requires thoughtful consideration of the language and format used to transfer mobile money payments. Some programs featured in this compendium, such as the ASHA program, D-tree, and Marie Stopes Madagascar (Case Studies 6, 9, and 11) are leveraging existing training programs and developing new ones to ensure that new mobile money users are comfortable sending and receiving payments.
- **Agent availability** – Mobile money systems using agents - points at which users can convert between cash and e-money - commonly have weaker agent networks in rural, hard-to-reach, and/or underserved areas. Programs working in these areas may face challenges in ensuring there are sufficient agent points to support their mobile money clients. To address this issue, mobile money service providers are investing in growing and strengthening their agent networks.
- **Measuring impact specifically of mobile money** – The benefits and impacts of mobile money are difficult to quantify and to isolate from other program effects, particularly in cases where mobile money is closely integrated with other program operations or where it is part of a bundled package of services. The programs featured in this compendium are using their program data to begin to document the impact of mobile money to contribute to the global evidence base on this topic.

## 1.2.3 Insights and Recommendations

In response to these challenges, health practitioners who have implemented mobile money platforms report a number of lessons learned, which provide valuable insight for those looking to adopt this methodology in the future:

- **Invest in start-up and pilot** – Prior to scaling up, mobile money programs should pre-test their interventions in a small number of target communities, in order to identify and fix bugs early on. Marie Stopes Madagascar emphasized the importance of scaling slowly and systematically in order to address operational and technical issues as they arise.
- **Design with the users' needs in mind** – It is important to keep users' needs and capacities in mind while developing mobile money platforms. Programs should take into account literacy levels

and local dialects, and solicit user feedback and opinions prior to designing and rolling out mobile money platforms, to ensure convenience and acceptability for users.

- **Establish strategic partnerships** – To ensure buy-in, uptake, ownership, and, ultimately, success of mobile money platforms, implementers note the importance of building strategic partnerships with administrative and political leaders, donors, and other local actors (including government ministries, district health officials, and local health institutions).
- **Work closely with mobile providers** – Strong relationships with mobile providers are key to the success of any mobile money initiative. It is important to be strategic in identifying which mobile money provider(s) to work with and ensuring the terms of agreement adequately represent the needs of the health program and its mobile money users. It is important that when establishing a mobile money system, implementers maintain frequent communication with mobile providers, in order to ensure that their target audiences are reached within the network and that there is adequate customer support.
- **Provide adequate and frequent training** – One-off trainings for those to use mobile money systems do not appear to be sufficient for successfully transitioning to mobile financial services. Instead, programs report the need for frequent training or sensitization of individuals using mobile money to ensure they can comfortably use mobile money. Programs also offer mobile money trainings to their program staff to ensure that they understand mobile money and can effectively support its integration with the program operations.
- **Integration mobile money with program operations** – Programs that are successfully using mobile money have integrated it as a core part of their program, including their payment and information management operations, which oftentimes requires an upfront investment of both time and money. Effective implementation and management of mobile money mechanisms are essential to ensuring that they adequately serve their purpose and support programs in meeting their objectives.



## 2. CASE STUDY I: PATHFINDER KENYA

### Background

Pathfinder International is a global NGO that delivers reproductive, maternal, and child health care services in more than 100 countries worldwide. In 2012, Pathfinder Kenya launched the mHMtaani project (Swahili for “Mobile Health for my Community”), which aims to promote healthier communities through the use of innovative mobile technologies that track the health of expectant mothers and orphans and vulnerable children. The project, funded by USAID’s APHIAplus Nairobi-Coast Program, operates using the application CommCare, a “decision and counseling support tool,” that supports community health workers (CHWs) in providing home and community-based care to hard-to-reach populations. CHWs use the mobile phone application to register clients and upload patient data, including information on antenatal care visits, family planning, and pregnancy danger signs, to track and analyze patient care and outcomes. The program provides real-time health data to service beneficiaries, and ensures pregnant women know their estimated delivery dates and have a delivery plan in place.

**Type of program:** Pay-for-performance  
**Health focus:** Maternal, newborn, and child health  
**Date launched:** 2012  
**Stage:** At scale  
**Size:** 6 community units in Kilifi, Coast region  
**Countries:** Kenya (Nairobi and coastal regions)  
**Key partners:** Dimagi, Inc.  
**Mobile providers:** Safaricom M-PESA  
**Funding:** USAID APHIAplus Nairobi-Coast Program, VISA Innovation Grants Program, NetHope

### Mobile Money

Pathfinder Kenya introduced the widespread use of mobile money for all operational and CHW stipend payments in 2012. The mHMtaani application is implemented by a network of more than 270 CHWs in Nairobi and the coastal regions. Using performance data collected through CommCare, Pathfinder utilizes a pay-for-performance (PFP) incentive model to encourage CHWs to use the mHealth application, rewarding those who meet or exceed their performance goals. The PFP model, funded by Visa and NetHope, issues incentive payments using M-PESA, Kenya’s leading mobile money platform. The CommCare platform provides a secure, reliable, and efficient payment platform for issuing payments to CHWs.

In addition to promoting use of an innovative financial product for the poor and unbanked in Kenya, Pathfinder reports a multitude of benefits from their transition to mobile money payments, including: improved health outcomes; increased transparency and reduced leakage and waste of CHW payments; improved aid efficiency and cost savings; reduced security risks of program staff; and increased availability of reliable data for decision making.

mHMtaani aims to support the Government of Kenya in achieving its objectives to extend health services to hard-to-reach populations. The project also aims to integrate CommCare with Kenya’s national health information system, which uses the DHIS2 platform; a sophisticated web-based open-source system.

### Results

Since 2012, Pathfinder has paid over 630,000 recipients through M-PESA, totaling over 5.6 million US dollars. Approximately 3,300 CHWs in Kenya are paid monthly stipends through M-PESA.



**CommCare** is a mobile phone platform that houses apps developed in partnership with software developer Dimagi, Inc. The apps act as a counseling support tool for CHWs, covering the majority of health services, including integrated maternal and child health, family planning, and HIV services. CHWs use the app to register and track clients through case management functionality and SMS schedule reminders to monitor community-level service delivery. CommCare apps are currently used by Pathfinder in multiple countries worldwide.

## Lessons Learned

- **Build staff buy-in** – In order to build buy-in for the mobile money application among its program staff, Pathfinder invested time in educating staff on the transaction process for mobile payments. Pathfinder also made the shift from cash to mobile-based payments mandatory to ensure uptake of the new payment process among staff.
- **Ask the right questions to telecom providers** – Pathfinder engaged and worked with Safaricom M-PESA to ensure that mobile money agents were available and transactions were secure. This experience highlighted the importance of reviewing the available network and coverage data in order to ensure that target populations can access services.
- **Importance of pre-testing** – Pathfinder observed that time should be reserved prior to piloting the intervention to conduct pre-testing, in order to pinpoint challenges before rolling out the intervention more widely.

### Mobile Money Payment Process

1. CHWs use CommCare to provide community level counseling and referrals
2. Performance tracked through CommCareHQ and measured against targets
3. Performance bonuses automatically calculated based on mobile data collected
4. CHWs registered into M-PESA to receive payments
5. Project sends stipends and bonuses via M-PESA monthly to CHWs' mobile phones
6. CHWs retrieve funds from local M-PESA agents

## Challenges

- **Lack of understanding of mobile money among users**– Mobile money services are new, which can lead to a lack of understanding among users of how they work. Systematic training of staff, as well as national and local opinion leaders and other end users, is necessary in order to ensure the smooth roll out of this new service. Literacy levels of CHWs should also be taken into account. For instance, Pathfinder found that nearly 10 percent of CHWs were incapable of using the CommCare platform despite initial training due to low literacy levels.
- **Poor connectivity in rural areas** – In order for mobile money services to be successful, mobile network and internet connectivity is essential. In many rural regions, there is not the necessary level of connectivity to support mobile money transactions. As a result, it is important to consider connectivity levels in project planning and strategy and to test connectivity levels in all areas where the program will operate.
- **Government bureaucracy and approvals to implement PFP** – Consistent engagement with government was essential to establishing enthusiasm and buy-in for both mHealth and mobile money services. To mitigate against potential government bureaucratic hold-ups, stakeholder forums and orientation meetings were held to build trust and, later, to draft a policy on mHealth in Kenya.

## Looking Forward

Pathfinder Kenya has completed scale-up of their mobile money initiative throughout Nairobi and the coastal regions in which they operate. Since 2012, the service has been used to transfer all operational and CHW stipend payments. Pathfinder plans to continue to utilize mobile money payments in Kenya, as well as to adapt and learn from this experience in other program countries globally.

### Sources

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## 3. CASE STUDY 2: TB REACH — INDUS HOSPITAL

### Background

The Indus Hospital, a non-profit, private charity hospital situated in Karachi, Pakistan, provides free tertiary-level care to patients within a catchment population of 2.6 million. The hospital aims to promote early and increased detection of tuberculosis (TB) cases in order to ensure their timely treatment. With support from the Stop TB Partnership's TB REACH program, and in partnership with Interactive Research and Development (IRD), the Indus Hospital has built a TB control program that ranks as the second highest volume treatment center in Pakistan.

### Mobile Money

With funding from the Stop TB Partnership, the Indus Hospital and IRD partnered to develop a mobile-money incentive scheme to improve and increase data on directly-observed treatment (DOT) for TB. The program operates using mobile-phone based software, built in house to screen over 1.2 million individuals for TB, and utilizes a progressive incentive scheme to motivate general practitioners, health workers, and community screeners to identify and refer TB suspects, confirm TB cases, and ensure TB patients successfully complete treatment.

Under the first wave of TB REACH funding, the program relied on a network of community screeners, selected from local community members in family-clinic catchment areas. Screeners received training on TB awareness, screening, and treatment, and were supplied with mobile phones pre-loaded with software that allows them to enter data electronically. Screeners were stationed in 54 geographically dispersed family clinics, where they conducted home visits of multidrug resistant-TB patients to perform DOT. After their home visits, screeners uploaded data to the hospital's patient database in real-time over the phone network or, if the network connection was unreliable, they completed and stored electronic forms on their phones which are linked to the Open Medical Record System (OpenMRS). The mobile phone database creates a streamlined data collection system, which automatically detects and corrects data entry errors, saving time and money for all those involved.

Incentive payments (or 'conditional cash transfers') were sent electronically directly to doctors', community health workers', or screeners' mobile banking accounts, for which they could register at their convenience from a local shop or outlet. Screeners at family clinics received a monthly stipend of approximately USD \$23.50 (where \$1 = PKR 84), plus cash incentives for submitting a daily phone report (\$0.18), procuring an acceptable sputum sample (\$0.88), and identifying a smear-positive case (\$11.80) or other form of TB (\$4.88). Additional incentives were also provided for initiating treatment (\$1.76) and follow-up visits (\$0.58). In total, screeners earned on average USD \$50 per month and were paid on a monthly basis through their mobile banking accounts. Screeners also received regular SMS messages from the mobile phone system to inform them of how many cases they had helped to detect.

**Type of program:** Progressive incentive scheme used to reward private doctors and community health workers for identifying and referring TB suspects and tracking treatment

**Health focus:** Tuberculosis

**Date launched:** October 2010

**Stage:** Scale up

**Size:** 1.2 million people screened

**Countries:** Pakistan (Karachi Province)

**Key partners:** Interactive Research and Development (IRD)

**Mobile providers:** Telenor (Easypasia); Zong (responsible for data transfer)

**Funding:** TB REACH Wave I Grant Recipient

Incentive payments (or ‘conditional cash transfers’) were sent electronically directly to doctors’, community health workers’, or screeners’ mobile banking accounts, which they could pick up at their convenience from a local shop or outlet. Screeners at family clinics received a monthly stipend of approximately USD \$23.50 (where \$1 = PKR 84), plus cash incentives for submitting a daily phone report (\$0.18), procuring an acceptable sputum sample (\$0.88), and identifying a smear-positive case (\$11.80) or other form of TB (\$4.88). Additional incentives were also provided for initiating treatment (\$1.76) and follow-up visits (\$0.58). In total, screeners earned on average USD \$50 per month and were paid on a monthly basis through their mobile banking accounts. Screeners also received regular SMS messages from the mobile phone system to inform them of how many cases they had helped to detect.

## Results

Within the first year of implementation of the mobile-money enabled incentive scheme, the Indus Hospital saw a 300% increase in the detection of TB cases within their catchment area, spurred by increased motivation among screeners due to the incentives they receive via mobile money. In addition, patient adherence to TB treatment rose to over 90%. During the project’s 2.5 years of implementation funded by TB REACH, over 1.2 million individuals were verbally screened, resulting in the detection of 32,971 suspected and 3,668 confirmed TB cases.

## Lessons Learned

- *Benefits of public-private partnership* – By partnering with physicians and community members, Indus Hospital was able to identify and report a greater number of TB cases. Through their use of mobile money, the project was able to more efficiently leverage a wider population as TB screeners, which would have been difficult if they were instead forced to rely on traditional cash payments.
- *Working with mobile providers* – In order to identify a mobile provider that could provide efficient, reliable and affordable mobile money services and offer coverage across a wide geographic range, the Indus Hospital and IRD explored partnerships with various mobile providers before forging agreements with two – one for transferring payments (Telenor) and one for transferring data (Zong).
- *Ensuring the number and location of mobile money service-points meets demand* – A limited number of mobile money cash-out points presented challenges to screeners, which eventually led to a switch in mobile providers.

### Mobile Money Payment Process

1. Screeners report activities electronically using OpenMRS system
2. At the end of each month, the reported data is used to automatically calculate incentives earned by each screener
3. Incentive payments are made electronically through Easypasia, and sent directly to the screeners’ mobile phone
4. Screener can pick up incentive payments from local shops or outlets at their convenience

## Challenges

- *Process to set up mobile money accounts inconvenient to users* – Screeners faced difficulties in setting up mobile money accounts due to stringent documentary requirements, which included having an up-to-date identity card and completing a signature verification process. Registration was inconvenient and time-consuming for screeners, who were most often informal sector workers with irregular hours and limited income, and for whom this registration process oftentimes represented loss of income.

- Distrust of *mobile money* – Although IRD required all screeners to open mobile money accounts, this request was met with initial resistance and skepticism. Any delays in sending incentive payments increased distrust among screeners. However, this mistrust dissipated over time as the project progressed and a regular, reliable payment schedule proved to be effective.

### **Looking Forward**

Based on the experience of the TB REACH Wave I, IRD received an additional round of funding for scale-up of the intensive TB case finding project, starting in July 2013. This two-year project aims to build on the successes of Wave I funding and create a social business model to generate revenue in order to sustain the TB initiative in the future.

### **Sources**

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## 4. CASE STUDY 3: IRD – ZINDAGI MEHFOOZ

### Background

Pakistan is one of three countries across the globe where Polio remains endemic. Peshwar, Pakistan's northwest province, has been declared by the World Health Organization (WHO) as the city with the "largest reservoir of endemic poliovirus in the world," caused by open sewage channels and broken water pipes. Full immunization coverage in the country remains modest, with levels varying from below 40% up to 80% by province.

Pakistan's Ministry of Health (MoH) instituted the Expanded Program for Immunization (EPI) to combat the Polio endemic by vaccinating all children in the country. To support this initiative, Interactive Research for Development (IRD) launched Zindagi Mehfooz (meaning "Safe Life"), a mobile-phone based online immunization registry. In collaboration with the Department of Health in Sindh Province, IRD is using this registry to increase the efficiency of vaccine services and to aid EPI staff by providing real-time data through streamlined reporting systems.

**Type of program:** Mobile incentive payments to community health agents

**Health focus:** Vaccination

**Date launched:** June 2012

**Stage:** Scale up

**Size:** 300,000 children

**Countries:** Pakistan (Peshwar Province)

**Key partners:** MoH Expanded Program for Immunization (EPI); Sind Province, Government of Pakistan; openXdata.org; Indus Hospital; Johns Hopkins Bloomberg School of Public Health; WHO

**Mobile providers:** Telenor and Ufone  
**Funding:** United Nations Foundation and mHealth Alliance

### Mobile Money

Zindagi Mehfooz aims to benefit approximately two million children in one of Pakistan's most disadvantaged provinces, Kyber Pakhtunkhwa. The registry uses a combination strategy of reminders and incentives to encourage parents to vaccinate their newborn children against measles, hepatitis, and polio.

| Lottery Incentive Payments |             |        |
|----------------------------|-------------|--------|
| Vaccine                    | On due date | Late   |
| BCG                        | Rs 200      | Rs 200 |
| Penta 1                    | Rs 300      | Rs 250 |
| Penta 2                    | Rs 500      | Rs 350 |
| Penta 3                    | Rs 600      | Rs 400 |
| Measles                    | Rs 700      | Rs 450 |

Every child enrolled in the program is assigned a radio frequency identification tag (RFID), which enables health workers to track them in the system using near field communication Nokia 6131 phones through IRD's Interactive Alerts application. RFIDs are placed on each child's EPI identification card to track their appointments in order to ensure they are receiving the appropriate vaccinations at the correct time intervals.

In addition, the RFID is linked to a lottery system, which distributes prizes to parents who vaccinate their children. The lottery system uses mobile money to transfer prize payments to caregivers. When the child receives vaccinations, their RFID is scanned. With each subsequent vaccination that a child completes and for all vaccinations that are completed on time, the potential prize amount increases. If a caregiver wins the lottery, they receive a code via their

mobile device which can later be redeemed at a local kiosk. Store owners verify the transaction by scanning the RFID on the child's EPI card.

As an additional incentive to encourage vaccination of children, each time a caregiver is awarded a prize, the health worker who was responsible for administering that vaccination or scheduling that appointment also receives a mobile money payment equivalent to 40 percent of the lottery prize. Mobile money is therefore used to incentivize health users to vaccinate children, as well as health providers to provide quality care.

## Results

Since launching Zindagi Mehfooz in 2012, over 35,000 newborns and infants have been enrolled in the program. Overall, the electronic registry and lottery incentive scheme have contributed to increased EPI enrolment of infants who otherwise would have been missed, improved uptake and timeliness of vaccinations, incentivized health workers, and generated real-time data for improved monitoring and evaluation.

### Mobile Money Payment Process

1. If prize is won, caregiver receives code via SMS
2. Caregiver visits kiosk to redeem code
3. Kiosk owner confirms transaction by scanning the RFID on the child's EPI card and provides cash to caregiver
4. Vaccine provider receives additional incentive payment equal to 40% of lottery prize
5. Providers cash out at local mobile money kiosk

## Lessons Learned

- *Tailoring solutions to meet local needs* – IRD has tailored Interactive Alerts to meet the expressed needs of the local health system and community. The Interactive Alerts application sends SMS reminders about vaccination appointments to caregivers who have previously enrolled in the Zindagi Mehfooz lottery system during their dependent's EPI center visit.
- *Power of performance-based incentives* – IRD has found that performance-based incentives can be a powerful tool for inducing extrinsic motivation among health workers to
- provide better healthcare services, most notably in situations where they have few avenues for vertical mobility and salaries are not tied to performance, which can lead to perverse behaviors. Mobile money provides a safe and efficient method for transferring these incentive payments.

## Challenges

- *Conflict environment* – Zindagi Mehfooz is being implemented in an environment racked by near-daily attacks by Taliban militants who have specifically targeted and condemned the work of polio vaccination teams in retaliation for US drone strikes in the region. This is further fueled by a general suspicion of programs backed by Western powers. As a result, attractive incentives and flexible, discrete payment mechanisms are necessary to generate local interest in programs such as this.

## Looking Forward

Based on the success of Zindagi Mehfooz, this comprehensive and evidence-based approach is now being incorporated into the WHO-led multi-site THRIVE study for the adaptation, validation, and institutionalization of the Open Smart Registration Platform (OpenSRP), an mHealth platform that allows health workers to electronically register, track, and monitor the health of their patients.

## Sources

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## 5. CASE STUDY 4: Aponjon (MAMA Bangladesh)

### Background

In Bangladesh, there is an urgent need to improve maternal, newborn, and child health outcomes. While 55 out of every 100 people have access to health services, 64 out of 100 are mobile phone subscribers. Recognizing high mobile phone penetration, the Mobile Alliance for Maternal Health Action (MAMA) Bangladesh has supported the development of a mobile phone based health information system for expecting and new mothers. The system, known locally as Aponjon (which translates to “dear one” in Bangla), delivers bi-weekly SMS or voice messages to expecting and new mothers and their relatives to ensure they receive the vital health information they need from the beginning of their pregnancies through the time their children turn one.

After completing a year-long pilot, Aponjon began its national scale-up in December 2012 led by the Bangladesh social enterprise, Dnet, in partnership with the government of Bangladesh’s Ministry of Health and Family Welfare (MOHFW). Dnet brokered partnerships with six outreach organizations, as well as every mobile operator in the country and three large corporate partners, to implement the nation-wide scale-up of Aponjon’s mHealth services.

With the support of their six partner outreach organizations, MAMA Bangladesh identified and trained “community agents” (CAs) across the country to identify, motivate, and register expecting and new mothers to Aponjon’s services. CAs, in turn, conduct door-to-door visits in rural, often isolated, regions of Bangladesh to reach and inspire women and their family members to enroll in the mobile service. For every individual a CA enrolls, they receive an incentive payment. Most CAs receive a monthly average of approximately Tk 200 (approximately USD \$2.50).

### Mobile Money

With funding from USAID’s Mobile Solutions Technical Assistance and Research Project (mSTAR), Dnet received support to transition away from traditional cash payment methods to mobile financial services (MFS) to administer payments associated with Aponjon services. Dnet now administers incentive payments to CAs, as well as payments for other Aponjon service costs, such as travel and daily allowance disbursements, via MFS.

Under the previous payment system, cash payments were administered to CAs via money orders from local post offices. This payment system required additional travel for CAs located far from post offices and also presented a lack of security for CAs traveling with cash. On average, payments took a month and a half to reach their final destination. Such delays decreased CA motivation, as well as increased the

**Type of program:** Mobile incentive payments to community health agents

**Health focus:** Maternal, newborn, and child health

**Date launched:** Pilot started in September 2011; Nationally launched in December 2012

**Stage:** Scale-up

**Size:** 64 districts

**Countries:** Bangladesh

**Key partners:** Dnet, USAID, Johnson & Johnson, Government of Bangladesh MOHFW, NHSDP s, BRAC, Infolady, MaMoni, SMC

**Mobile providers:** Grameenphone, Banglalink, Robi, Aritel, Citycell, Teletalk

**Funding:** Relies on multiple revenue streams including: donor funding, corporate partnerships, mobile operator discounts, and user fees

workload of accounting staff who were required to complete extensive paperwork to complete transactions.

## Results

The benefits of the transition from cash to MFS were significant. There is a reduction in the workload of accounting staff, reduced risks for cash handling, and increased incentives for CA recruitment of Aponjon service users. In total, it is estimated that this transition provides the Aponjon system with an annual cost savings of Tk 4.75 million (approximately US \$60,000) and an annual time savings of roughly 41,333 work hours.

Furthermore, since beginning scale-up in late 2012, Aponjon has enrolled more than 1.2 million mothers and families in the mHealth alert system and trained more than 3,000 community health workers as CAs. By streamlining the payment process from traditional cash disbursements to MFS, Dnet has substantially reduced the payment time to CAs from an average of 41 days to 11 days. Furthermore, there is now increased transparency and monitoring of payments, which ensures CAs receive the full amount due on a timely basis.

## Lessons Learned

- *Cash payments still valued* – Based on a monitoring and evaluation report of the Aponjon program conducted in 2013, the study found that cash payments are still generally viewed as safe and secure as both a transaction and savings method and that CA cash users typically have higher savings rates than MFS users. The program has learned that they must encourage a culture of savings through the use of MFS and sensitize users to the security benefits of mobile money.
- *CAs utilize MFS through alternative means* – Although there are CAs who are not MFS account holders, many of these traditional cash users still utilize MFS through their friends', family members', and agents' accounts. This highlights an untapped market of potential MFS users that may need additional training and incentives in order to make the full transition to mobile money services.

### Mobile Money Payment Process

1. Aponjon staff calculates payment amount to beneficiary
2. Aponjon staff sends the payment amount list by beneficiary to the MFS provider (bkash/DBBL) to check account eligibility
3. After eligibility is confirmed, Aponjon accounting team sends payment disbursement request to the MFS provider
4. MFS provider disburses payments to beneficiaries' mobile money accounts and sends confirmation to the accounting team
5. Beneficiaries receive payments to their mobile wallet on the same day as the disbursement request
6. Beneficiary can cash out mobile payment at local outlet

## Challenges

- *Many CAs are unaware of MFS* – There are still many CAs across Bangladesh who are unaware of MFS services and continue to rely on slower, less secure cash payments. To address this, Aponjon sees an opportunity to conduct additional awareness raising activities.
- *CAs have competing priorities* – Because the majority of CAs also work for other local and international NGOs, they typically have other responsibilities and products to sell or promote, thus, they often are not completely invested and financially dependent on the part they play in Aponjon's registration process. A 2013 study indicated that of 3,000 CAs, only 700 were actively registering subscribers to Aponjon. To mitigate this challenge, Dnet instituted "brand promoters" (BPs) whose sole job is to promote and register users to Aponjon.

## Looking Forward

Aponjon is continuing to build a sustainable business model, adding new products, including web-based and smart phone services, and expanding their scope of services to include additional health guidance to mothers of children up to age five.

## Sources

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- <http://www.mobilemamaalliance.org/sites/default/files/MAMA%20Bangladesh%20Formative%20Research%20Report.pdf>
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## 6. CASE STUDY 5: PAYWAST

### Background

Launched in 2011, Paywast (meaning “to connect” in Dari), is Afghanistan’s largest social network with more than 1.5 million users. The platform, which stands at the forefront of SMS-based social networking technology in the country – processing roughly 30 percent of all SMS messages – also assists government departments, NGOs, and other enterprises to customize mobile solutions for Afghan citizens.

With support from the Afghan Ministry of Public Health (MoPH) and in partnership with Care of Afghan Families (CAF), Paywast began technical implementation of an mHealth call center for maternal health in 2013. Responding to a low rate of facility-based deliveries and limited referrals, the call center aims to ensure that all women have the opportunity to deliver at health centers with qualified medical professionals by managing customer relationships between patients and community health workers (CHWs), and facilitating access to emergency medical transportation when necessary. While Paywast is responsible for the implementation and operations of the mobile money application and the call center, CAF is the primary MoPH partner, and is responsible for training of staff, CHWs, drivers, clinics and health facilities.

**Type of program:** SMS based cash voucher system for reimbursement of transportation costs

**Health focus:** Maternal health

**Date launched:** 2013

**Stage:** Scale up

**Size:** Pilot program available in 3 districts in the north of Afghanistan

**Countries:** Afghanistan

**Key partners:** Afghan MoPH, WHO, CAF

**Mobile providers:** Mobile vouchers delivered on major Afghan mobile operators who are all integrated directly with Paywast

**Funding:** Afghan Ministry of Public Health. The project received a special mention award from mBillionth

### Mobile Money

Health workers contact the mHealth call center in Kabul to ask for medical information to help them manage cases of obstetric emergencies. For low-risk cases, call center staff provide instructions and suggestions to health workers concerning safe maternal health practices. In high-risk cases, the call center encourages the health worker to refer the patient to a health facility and will provide emergency transport through informal transportation partners (local car or motorcycle owners) to ensure patients go to clinics that provide the appropriate medical services to address their needs.

### Results

During its first year of operation, the Paywast/CAF mHealth call center enrolled more than 2,000 citizens into the program, of which approximately 65 percent were women. The call center made transportation referrals to more than 1,800 women and their families – all facilitated by mobile money transactions. The center also observed an improvement in the ratio of childbirths that took place in a clinic versus at home in affected areas. With the opening of a second call center in late 2014, Paywast hopes that the number of citizens they are able to serve will continue to grow exponentially.

In these high risk cases or in the event of an emergency, the call center utilizes an SMS-based cash voucher reimbursement system to pay drivers for emergency transportation. When an emergency

arises, the health workers contact the call center, and the center identifies an available driver and makes travel arrangements for the patient to go to an appropriate health facility. After the driver has brought the patient to the health facility, the call center sends a voucher directly to the driver to cover the costs of his or her services via a proprietary mobile money system built by Paywast specifically for this purpose. The mobile money vouchers can be sent through any of the mobile operators integrated with the Paywast platform. The driver, in turn, shows the SMS voucher to a local Paywast mobile money dealer, who verifies it by contacting the call center, and then pays out the driver in cash. The mobile money dealers are typically trustworthy small businesses operating in the covered districts.

## Lessons Learned

- *One size does not fit all* – While the project achieved its targets and the outcome was decidedly positive, an SMS wallet based mobile money model may not be the best solution for digital reimbursements in Afghanistan, particularly considering the country’s current mobile and financial services environment. While beneficiaries tended to embrace the mobile-based reimbursements because of the rapid payments and conversion to cash, experience from other mobile money initiatives in Afghanistan shows that there is little motivation or incentive for consumers to keep their money inside the mobile money ecosystem by depositing it in a virtual wallet or account.

### Mobile Money Payment Process

1. Health worker contacts Paywast mHealth call center to arrange emergency transportation for patient
2. Call center makes emergency transport arrangements with a local driver
3. After transportation has been completed, call center sends voucher directly to driver to their mobile money account
4. Driver shows voucher to Paywast mobile money dealer
5. Dealers verify voucher by contacting call center
6. Transportation service is confirmed and driver is paid in cash

## Challenges

- *Lack of citizen trust in non-cash payments* – Given that mobile money is still a new concept in Afghanistan, there is skepticism from drivers who fear that they will not receive their money. This skepticism reflects a wider sentiment expressed by many mobile money users throughout the country. Convincing potential users that mobile money is a viable – and safer – alternative to cash payments is imperative to the success of such projects, and requires intensive training, a well-planned communications strategy, establishment of a reliable network of trusted mobile money agents, and a responsive user support/customer service mechanism.
- *Operating mobile money in a niche environment* – Due to the extremely limited traction mobile money has in Afghanistan, there is virtually no knowledge of mobile financial services among citizens or established ecosystem to leverage. While this project is in early stages, only available in three districts in the Northern Province of Badakhshan, a national scale-up would require significant investment in building out the stakeholder ecosystem, to increase citizen awareness of mobile money.

## Looking Forward

Building on experiences from this and other projects, Paywast developed a new voucher-based mobile payment network, independent of mobile operators, which will work as a hybrid between mobile and cash payments and is intended to empower programs such as the one covered here. With this, any merchant or service provider will be able to accept digital remote payments using a smartphone, and

consumers will be able to pay using vouchers from their basic phones or smartphones. The service will launch later in 2015.

### **Sources**

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# 7. CASE STUDY 6: ACCREDITED SOCIAL HEALTH ACTIVISTS

## Background

The ASHA program was conceived and funded by the Indian National Rural Health Mission (NHRM) in an effort to promote public health awareness amongst local, rural populations, and increase the utilization and accountability of existing health services. ASHAs (Accredited Social Health Activists) are trained female community health workers who serve as the primary point of contact for many marginalized members of the Indian population, particularly women and children. They receive basic public health training and are equipped with a standard drug kit, which allows them to deliver first-contact healthcare.

Typically, ASHAs are engaged in promoting community health activities between 20 and 25 days out of each month. In return, they receive performance-based incentives for promoting universal immunization, referral and escort services for reproductive and child health and other healthcare programs, and facilitation of delivery at primary health centers.

**Type of mobile money program:** Delivery of performance-based incentives to ASHAs

**Health focus:** Reproductive and child health

**Date launched:** December 2010

**Stage:** Scale-up across new districts (no longer live in Sheikhpura)

**Size:** 6 blocks of Sheikhpura district in Bihar (Sheikhpura, Arari, Berbigha, Sheikhopursarai, Ghatkusumba, Chewara)

**Countries:** India (Bihar State)

**Key partners:** Eko Aspire Foundation, MicroSave, State Bank of India, State Health Society Bihar, Sadara Primary Health Center, Chewara Primary Health Center

**Mobile providers:** Bharat Sanchar Nigam Limited (BSNL)

**Funding:** Norway India Partnership Initiative through UNOPS to NRHM

## Mobile Money

In December 2010, the United Nations Office for Project services (UNOPS), the Norway-India Partnership Initiative (NIPI), and the Eko Aspire Foundation collaboratively launched a pilot for a mobile money transfer (MMT) program with support from the State Bank of India and State Health Society Bihar. The pilot aimed to introduce mobile-based savings accounts as an alternative method for transferring ASHA incentive payments. The pilot was implemented in all six blocks of the Sheikhpura district in Bihar, covering 440 ASHAs. Ultimately, the mobile money application ceased operation as ASHA payments were switched to bank transfers, but the experience still provides many valuable lessons for those looking to integrate mobile money into their programs. The objectives of the pilot were: 1) to assess the impact of mobile transfers on the financial behavior of ASHAs and gauge their satisfaction levels; 2) to assess the impact of the new processes around mobile money transfer payments on the health department; and 3) to identify challenges faced in implementing mobile money and provide recommendations to overcome them in the future.

## Results

A study to assess the effectiveness of the MMT program found substantial challenges with the traditional cash payment system. The study revealed delayed payments that could take 4-6 months to process, loss of work due to travel time to collect payments, and a lack of transparency around the amounts due to ASHAs for services rendered. In comparison, the switch to MMT payments increased the timeliness of payments to ASHAs and resulted in a clearance of backlogs, providing time and cost savings for both ASHAs and primary health care centers. Additionally, monitoring and transparency of ASHA payments improved, as they no longer relied on middlemen who could divert funds. With the introduction of MMT, the average monthly incentive disbursed to ASHA increased from Rs. 1,265 (year 2010) to Rs. 2,012 (year 2011).

Furthermore, the mobile money application provided a method for identifying inactive ASHAs. For any ASHAs who earned zero commissions for three consecutive months, their agreements were terminated and new ASHAs were hired to replace them.

## Lessons Learned

- *Train PHC staff on mobile money* – During the pilot, PHC staff did not receive training on the process for releasing mobile money payments from the DHS to ASHA's individual accounts. As a result, when ASHAs would approach PHC staff with questions about payments that they were unable to resolve, this created a culture of panic and distrust.
- *Build buy-in from administrative and political leaders* – The project required several changes to systems and procedures already in place within primary health care centers, DHS and the State Health Service, including the development of a standardized accounting format. Therefore, the involvement, support, and guidance of administrative and political leadership was of utmost importance.

### Mobile Money Payment Process

1. ASHA submits documentation of her work at the PHC by the 25<sup>th</sup> of each month
2. The PHC verifies the documents provided and creates a consolidated summary sheet of incentives, which is sent to the District Health Service (DHS) by the beginning of each month
3. The DHS verifies the incentive sheet and releases money to the bank for payment to ASHAs
4. The Bank transfers money into an SBI-Eko mobile savings account, linked to the ASHA's mobile number
5. ASHA receives an SMS on her mobile phone after payment has been credited to her account
6. ASHA visits Eko CSP at her convenience to withdraw money

## Challenges

- *Need to create viable business case for customer service points* – There must be a sufficiently large network of Eko customer service points for ASHAs to cash-out funds. However, customer service points are required to use their own capital for cash-outs, which requires that they earn a sufficient return on investment through transaction fees.
- *Low awareness of mobile money* – Because mobile money is still a new concept, many ASHAs are not yet aware that this payment option is available to them. When first introduced to the concept, many feared that their money would disappear and that it was not safe with transfer agents. However, this skepticism began to dissipate as ASHAs received training and became more familiar with the system.
- *Changing mobile numbers* – ASHAs have a tendency to change mobile numbers frequently as competing operators offer free talk-time services and other incentives. Given that their mobile



number is linked to their SBI-Eko mobile savings account number when they register for the program, maintaining one number is crucial for trouble-free delivery of incentive payments.

- *Notifications from mobile provider in English* – Because most low-cost mobile phones do not feature Hindi as a language for sending messages, SMS response messages from Eko are in English. Thus, ASHAs had to be trained to understand the messages and codes they received via SMS.

### **Looking Forward**

The MMT project ceased implementation in the Sheikhpura District after the government opened bank accounts for all ASHAs and changed their payment method to direct bank transfers. However, the Chief Minister of Bihar was inspired by the intervention's potential and has recommended the use of mobile money for the program's scale-up across the entire state (in six districts, namely: Nalanda, Jehanabad, Rohtas, Vaishali, Samastipur, and Bhagalpur). He also has proposed its expansion into other sectors, such as agriculture, child development, and education.

### **Sources**

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- <http://nrhm.gov.in/communitisation/asha/about-asha.html>
- <http://www.slideshare.net/theradiationdoctor/asha-a-true-story>
- <http://blog.microsave.net/why-mobile-wallets-might-work-for-asha-and-many-others/>

## 8. CASE STUDY 7: ARA — UBUNTU AFYA UNIT

### Background

There are a wide range of challenges preventing the rural and urban poor in Kenya from obtaining quality health services, including: distance to health facilities, poor infrastructure, sub-optimal quality of health services, and overworked health providers. With funding from the HANSHEP Health Enterprise Fund, Afya Research Africa (ARA), a Kenyan based non-profit, has responded to these challenges by developing a chain of health kiosks. The Ubuntu Afya kiosks, located in hard-to-reach locations, offer affordable, accessible health care services to previously underserved populations, contributing to ARA's overall vision of improving access to quality health care.

Health kiosks are co-owned and operated by members of the community, including self-help groups and savings collectives, who contribute labor and monetary resources in order to build and staff the kiosks. All kiosks are staffed by a clinical officer and a community health worker (CHW), who provide a variety of basic health services, primarily focused on maternal, newborn, and child health, reproductive health, and family planning. CHWs provide consultations, perform basic diagnostics, and distribute medicines on a fee-for-service basis at highly subsidized prices. The kiosk operations are supported by a web-based health management information system, allowing for real time monitoring of service delivery and quality, and promoting clinical accountability.

In addition to providing basic health services, all kiosks are host to at least one other income-generating activity in order to subsidize costs for clinical services. These activities are selected and managed by members of the community. Examples include: soft drink depots, safe water sales, motorbike taxi services, and mobile money pay stations.

### Mobile Money

Three out of nine M-Afya kiosks currently operate as mobile money transfer stations, using Kenya's leading mobile money platform, M-PESA. These kiosks provide basic financial services to community members in the form of mobile phone based money transfer services, which provide clients with a platform to save money for their future health needs, fostering a culture of savings.

The mobile money stations in M-Afya kiosks provide patients with a mobile-based payment option to pay for health services, which cuts out additional financial and time costs they would incur, such as transport costs. The mobile money service is typically operated by the CHW stationed at the health kiosk, who is trained by M-PESA agents to process these transactions.

**Type of mobile money program:** Pay-for-service kiosks subsidized by supplemental mobile money transactions

**Health focus:** Maternal, Newborn, and Child Health, Reproductive Health, and Family Planning

**Date launched:** 2011

**Stage:** Scale-up

**Size:** 9 Kiosks in Rarieda and Malindi Districts

**Countries:** Kenya

**Key partners:** Afya Research Africa (ARA), Abt Associates

**Mobile providers:** Safaricom M-PESA

**Funding:** HANSHEP Health Enterprise Fund through the SHOPS project, USAID, DFID

## Results

In the first year of this public-private partnership model, the M-Afya Kiosks (now dubbed the Ubuntu Afya Unit) provided health services to more than 8,000 clients. Of these clients, 1,300 received reproductive health and family planning services; 1,400 women and children received maternal and child health care services; and more than 400 clients were screened for HIV.

In addition, supplemental kiosk activities generated more than \$27,000 in additional revenue, recovering approximately 99 percent of clinic operating costs during their first year. The M-PESA services have so far facilitated transactions of more than \$30,000 across the three units, providing access to financial services, facilitating enterprise, promoting community savings, and generating profit for the kiosks.

## Lessons Learned

- *Mobile money as a supplemental income-generating activity* – In addition to allowing clients to pay for services via mobile money transfers, ARA has found that providing mobile money transfer services within kiosks can be a viable source of supplemental income to financially support the provision of clinic services, through transaction fees generated. Although the commissions from transfers are low, the volumes are large, and the service provides additional value to communities that hitherto had difficulties facilitating transactions. The service provides an additional pull to kiosks, providing more value than apparent from the profits.

## Challenges

- *Liquidity issues at kiosks* – In a few instances, the demands from clients to cash-out required volumes of cash larger than the money flows that kiosks had access to. Due to these liquidity issues, Ubuntu kiosks were unable to meet the cash-out demands of their clients.
- *Sub-lease arrangement with mobile providers* – Currently, mobile money transfer stations operate under Safaricom agents who sub-lease the M-PESA lines to them. Therefore, ARA has to share the profits from mobile money transactions with these agents. Eventually, ARA hopes to register CHWs and others operating health kiosks as agents themselves, but this will require a significant monetary deposit, which they do not currently have available.
- *Risk of fraud* – To mitigate risks of fraud, the Ubuntu kiosks have taken preventive measures by appropriately training all M-PESA operators staffed in their kiosks.

## Looking Forward

As the Ubuntu Afya Unit continues to grow, ARA plans to link some of the mobile money stations to bank agencies to improve liquidity. Furthermore, they would like to expand their use of mobile money and eventually have an M-PESA line for all kiosks. However, this will have to be driven by community demand, as citizens are responsible for determining the investment priorities at each kiosk. In addition, ARA intends to develop a cooperative insurance model whose services will be anchored in their mobile money transfer services.

## Sources

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- <http://afyaresearch.org/>
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## 9. CASE STUDY 8: CCBRT – TEXT TO TREATMENT

### Background

Each year, over 3,000 women in Tanzania become incontinent through obstetric fistula, a condition that is caused by prolonged or obstructed labor. Today, an estimated 24,000 women in Tanzania live with obstetric fistula, which is an easily treatable medical condition that often isolates women from their families and communities when unaddressed.

Comprehensive Community-Based Rehabilitation in Tanzania (CCBRT) is seeking to address this problem. Their mission is to prevent disability and maternal and neonatal mortality and morbidity by providing equitable access to affordable, quality medical and rehabilitative services. Since its inception in 1994, it has grown to be the largest indigenous provider of disability and rehabilitative services and surgeries in the country.

The CCBRT Disability Hospital provides a range of surgical and outpatient services for ophthalmology, obstetric fistula, orthopaedics, and reconstructive surgery. Corrective surgery for obstetric fistula and cleft lip/palate patients are offered free of charge, while other services are offered at highly subsidized rates in order to reduce barriers to treatment for Tanzania's poor.

In 2007, CCBRT entered into a public-private partnership with the Government of Tanzania, in an effort to better address the maternal, newborn, and child health challenges facing the country. The partnership has two primary components: 1) increased capacity building of existing health facilities in the Dar es Salaam region to provide high quality maternal and newborn care; and 2) the creation of the CCBRT Maternity and Newborn Hospital, which will serve as a referral facility for the Eastern Zone of Tanzania and will be the largest dedicated maternal health facility in the country.

CCBRT is represented in the USA by its sister organization, Kupona Foundation. Established in 2009, Kupona Foundation unlocks access to the US market. Working side by side, with total transparency, Kupona Foundation and CCBRT facilitate the allocation of resources to the people, places, and programs with the greatest potential for impact.

### Mobile Money

In 2009, CCBRT began the “Text to Treatment” program, with support from the United Nations Population Fund (UNFPA) Tanzania Country Office. Recognizing that most people living in rural communities are unable to afford transportation to hospitals, and that many of the local healthcare facilities in these areas do not have the capacity to offer specialized services to people with disabilities, the program aims to make specialist services both more available and affordable to underserved populations.

**Type of mobile money program:** Mobile cash transfer for transportation costs and incentive scheme for identification of fistula cases

**Health focus:** Maternal, Newborn, and Child Health – Fistula Repair

**Date launched:** December 2009

**Stage:** Scale-up

**Size:** 100 ambassadors mobilized across 25 regions

**Countries:** Tanzania

**Key partners:** CCBRT, Kupona Foundation

**Mobile providers:** M-PESA (Vodacom mobile money)

**Funding:** Vodafone Foundation, UNFPA

The program relies on a community of “ambassadors” – made up of health workers and other volunteers throughout the country – who are tasked with identifying women with fistula. Ambassadors, who have all been trained by CCBRT and mentored by experienced fellow ambassadors, are responsible for outreach activities, awareness creation, health education, screening, and organizing referral to CCBRT Disability Hospital, or to one of CCBRT’s satellite health facilities for treatment.

Once an ambassador has identified a woman with fistula, they call CCBRT to arrange a referral. CCBRT operates a hotline that receives on average 50 calls daily. Once they have confirmed the diagnosis, CCBRT sends funds via M-PESA (Vodacom mobile money) to the ambassador that referred the case. The ambassador claims the money from an M-PESA agent and uses the funds to purchase a bus ticket(s) for the woman’s transportation to the hospital. Travel costs can reach as much as USD \$70 for a single patient. By removing the financial barrier of transportation, women with fistula can receive dignity-restoring treatment at no cost to themselves or their families.

On arrival at the health facility, the patient submits her bus ticket as proof of referral and is admitted for treatment, free of charge. The ambassador that facilitated the transport then receives a USD \$6 incentive payment via M-PESA for referring the patient.

## Results

Since the “Text to Treatment” program was launched in late 2009, over 2,000 women have been treated and the number of fistula surgeries has increased by 337 percent. There are now more than 600 CCBRT ambassadors using M-PESA to facilitate cash transfers for patient transportation from rural and peri-urban areas. Furthermore, in 2014, more than 80 percent of obstetric fistula patients treated at CCBRT and satellite health facilities were referred by ambassadors using M-PESA.

## Lessons Learned

- *Ensure sufficient number of M-PESA agents* – When the text to treatment program initially began, the reach of M-PESA agents was still fairly limited in rural areas, as the service was relatively new. CCBRT found that in order for the program to be effective, there needed to be a sufficient number of M-PESA agents for ambassadors to access in order to cash out funds.
- *Expanding ambassador network* – CCBRT has sought to raise awareness of their text to treatment program through a variety of measures, including radio, bulk SMS messages, billboards, and videos. But what has proven to be most effective is their ambassador network. They are now seeking to partner with community health workers throughout the country, as an easy and efficient way to expand their ambassador network in order to reach more potential patients.

### M-PESA Mobile Money Process

1. Ambassador refers woman suffering with fistula to CCBRT Disability Hospital or satellite health facility for treatment using his or her mobile phone
2. CCBRT confirms the diagnosis and sends funds via M-PESA to the ambassador to pay for the woman to travel to the hospital
3. On arrival at the health facility, the referred patient submits her bus ticket to staff and is admitted for treatment
4. The ambassador that referred the patient receives a USD \$6 incentive payment, transferred via M-PESA
5. The ambassador cashes out at a local M-PESA agent

## Challenges

- *Lack of mobile phone access inhibits growth of ambassador network* – Former fistula patients are positioned to be effective ambassadors, but the majority do not have mobile phones, which prevents CCBRT from being able to leverage this potential resource.

### **Looking Forward**

In 2012, the Vodafone Foundation took over funding of the “Text to Treatment” program through its “Mobile for Good” fund. They plan to expand the initiative to all regions of the country by 2017.

In addition to treating fistula via M-PESA, CCBRT expanded the scope of this referral system to include cleft lip/palate, in partnership with Smile Train, helping enable the treatment of 437 cleft lip/palate patients in 2014. The success of CCBRT’s ambassador network has also led to a new partnership with Pink Ribbon Red Ribbon, tapping into the existing network of trained and trusted field workers to aid in the identification of cervical cancer patients in rural areas.

### **Sources**

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# 10. CASE STUDY 9: D-TREE TANZANIA

## Background

D-tree International is a non-profit organization committed to improving the quality of healthcare with the use of innovative technology. D-tree established a program in Zanzibar, Tanzania to help frontline community health workers provide high quality maternal health care and adequately refer women with high-risk conditions and obstetric emergencies to health facilities. The program currently has 208 trained traditional birth attendants (TBAs) and community health workers (CHWs) who serve a network of 4,500 women who have enrolled in the program.

TBAs in Zanzibar are typically paid to assist deliveries. It is therefore a financial disincentive for TBAs to refer their patients to health facilities, since this represents a loss of income.

**Type of program:** Payment of incentives to TBAs and emergency transport costs for pregnant and post-partum women

**Health focus:** Maternal health, emergency transport

**Date launched:** November 2011

**Stage:** scale-up

**Size:** 208 TBAs, expected 350-400 by end of 2014

**Country:** Tanzania (Zanzibar)

**Key partners:** The Bill and Melinda Gates Foundation, Zantel, Etisalat

**Mobile providers:** Zantel,

**Funding:** The Bill and Melinda Gates Foundation Grand Challenges Round 1 and Round 2

## Mobile Money

In November 2011, D-tree was awarded a grant through Grand Challenges Round 1 and launched a program in Zanzibar that offers mobile-enabled clinical guides to TBAs to help them treat women and identify women who should be referred to health facilities. D-tree also forged a partnership with Zantel, the largest mobile phone operator in Zanzibar, and Etisalat to incorporate an SMS-mobile money payment system into the program. Phase II started with a Round II grant in late 2012.

The mobile money payment system used by D-tree incentivizes timely and appropriate referrals. TBAs conduct home visits, screen each pregnant woman for risk factors and danger signs, identify need for referrals and accompany the woman to the health facility, and provide follow-up care for both mother and baby after delivery. D-tree uses mobile money to ensure that TBAs are able to make prompt payment for transport for the woman to deliver in a health facility or in case of any complications for both mother and baby that require medical attention. Transfers are made from the TBAs' mobile money accounts to the drivers' accounts at pre-negotiated rates to the appropriate facility, costing and average of US\$30USD per referral. After the TBA's last follow-up visit to the family, D-tree pays each TBA US\$6 per facility delivery through mobile money as well, which is higher than the amount the TBA would make from an assisted delivery.

## Results

As of October 2013, more than 1,720 financial transactions had been sent to TBAs to pay incentives. For emergency transport, the program performed 781 transfers from D-tree to TBAs for transport, while TBAs made more than 3,000 payments to drivers for transport to health facilities. The use of mobile money in the D-tree enables rapid referrals and contributes to increased rates of institutional



deliveries among program beneficiaries, and reduced administrative costs and improved accountability and oversight for program administration.

## Lessons Learned

- *Establish strong partnerships with local actors* – D-tree invested in building relationships with the Ministry of Health, district health officials, and local health institutions to ensure buy-in and local ownership of the program. D-tree worked with local health facilities and district staff to identify and establish a network of car owners to provide emergency transport services for the program at fair rates. D-tree also met with village leaders to sensitize them about the project and the importance of facility delivery for the women in their community.
- *Provide adequate training and follow up for mobile money* – D-tree provides a comprehensive training not only on the decision support application, but on the use of mobile money. The initial training covers basic functions of mobile money (e.g. typing letters into phones, remembering passwords, conducting transactions, and checking balances). In the subsequent months, D-tree follows up with newly trained TBAs and monitors their use of mobile payments to ensure that they have a strong understanding of the mobile payment system. This training and oversight process is essential to ensure that the TBAs have a strong enough understanding of how to transfer mobile money transfer so they can complete mobile-based payment while managing complicated emergencies.
- *Offer a cash payment option for community health workers* – There is a strong “cash culture” in Tanzania, and some TBAs initially took time to become accustomed to using mobile money instead of cash. However, in the 2 years since the initial project launched, D-tree has seen this issue disappear and the drivers and TBAs have been very comfortable using mobile money.
- *Building an agent network* – D-tree uses Zantel’s agent network, which is spread across the country, to allow drivers to cash their money out. When working with an agent network, it is important for the program to verify that all the listed agent locations are fully operational to ensure that the coverage of the agent network meets the programs’ needs. This is particularly important in rural areas, where there tend to be fewer agents, and so it is important to work with the mobile provider to ensure they can bring pay points where you need them.

### Mobile Money Payment Process

1. TBA uses mobile money account to send payment to drivers for emergency transportation for patients
2. D-Tree sends payment for referrals (\$6.00USD) and advance payment to cover costs for emergency payments via mobile money
3. Payment information automatically updated in web-based platform
4. TBAs can cash out via Zantel mobile money agents

## Challenges

- *Integrating mobile payments with existing information technology systems* – D-tree initially had to manually reconcile its payments to TBAs using combined information from the network provider on D-tree’s corporate mobile money account and the referral forms from the phone application that showed what the TBAs should spend on each referral. This was a challenging and tedious administrative task because D-tree could only see payments sent to TBAs—not from TBAs to drivers. In 2013, D-tree established a web-based platform that synthesizes payment information in one place, thus providing a running balance for each TBA through an automated system, but with the added ability to manually edit payments if needed. It also flags duplicates, incorrect payments, and low balances so that D-tree can better control the flow of money and track the referral activity for each TBA.



- Measuring impact specifically of mobile money – The benefits and impacts of mobile money are difficult to quantify and to isolate from other program effects. In the case of D-tree, this difficulty is partly because mobile money consists of a bundled package of services. The costs of not using mobile money, however, would be very significant and would include costs for staff time, vehicle rental, and fuel to arrange visits to complete payment in-person for 1,000 transactions a month (at current scale) or 1,800 transactions a month (at the full expected scale). There is also a security risk associated with cash-payments that is eliminated with the use of mobile money.

### **Looking Forward**

D-tree is successfully scaling up the use of mobile money as it expands its program. Currently, 208 TBAs are enrolled in the program, as well as 32 Community Health Workers using the same application, and this project will have scaled up to 350-400 users by the end of 2014. Because of the success of using mobile money in Tanzania, D-tree is seeking other opportunities to phase out cash in its programs and eliminate financial barriers to healthcare.

### **Sources**

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- Interview with Steve Ollis, Chief Operating Officer, D-tree International. October 2013.

# 11. CASE STUDY 10: MICROENSURE TANZANIA

## Background

MicroEnsure is a social business that designs and delivers high-impact insurance products to provide financial risk-protection for poor and underserved populations. As of June 2013, the company covered more than 4.5 million clients across 13 countries in Africa and Asia, oftentimes partnering with private and not-for-profit sectors to deliver insurance products to mass-market consumers.

In May 2010, MicroEnsure partnered with Tigo, a mobile network provider, to develop a life insurance product (that MicroEnsure named, “Family Care”) for the network’s subscribers in Ghana (see box A.1.1).

The partnership quickly expanded to Tanzania and Senegal, reaching one million lives insured within 14 months of the formal launch in January 2011. MicroEnsure’s efforts to build awareness about the value of insurance among its rapidly expanding client network helped to create ambassadors life insurance, thereby setting the stage for health insurance. Following the rapid success of the Family Care Insurance Plan, Tigo Tanzania asked MicroEnsure to design a micro-insurance health product for its subscribers. In October 2012, MicroEnsure and its partners, Tigo, Bima and Golden Crescent, piloted a health insurance product, “Pona na Tigo Bima” (Get Well with Tigo Insurance), which offers life insurance and cash for inpatient hospital care at a defined network of private and public hospitals.

The product offers six tiers of life and hospitalization coverage based on the premium level (between US\$0.45 and US\$6.00), which are paid via three monthly installments that are deducted from the customer’s airtime balance. Clients receive hospital cash via Tigo’s mobile money service, “Tigo Cash.” Initially launched in Dar es Salaam, within the first year, tens of thousands of memberships were sold and the product was expanded to other regions in Tanzania, making it the fastest-growing health insurance product in East Africa over the past year.

## Mobile Money

MicroEnsure uses mobile money transfers for claims payments. With Tigo Cash, they can pay claims to subscribers within minutes of claims submission and anywhere in Tanzania.

## Lessons Learned

- *Establish strategic partnerships* – An essential part of establishing a successful partnership between MicroEnsure and Tigo was to clearly define the role and responsibilities of each partner. This clarity ensured that all parties agreed from the outset and benefited from the partnership arrangement.

**Type of program:** Mobile phone-based claims payments

**Health focus:** Health insurance

**Date launched:** 2001

**Stage:** Scale up

**Size:** N/A

**Countries:** Tanzania

**Key partners (in Tanzania):** Tigo, Bima, Golden Crescent

**Mobile providers:** Tigo

**Funding:** Self-funded

### Mobile Money Payment Process

1. Health provider enters claim information into phone and submits to Pona na Tigo Bima via SMS
2. Claims automatically processed and reimbursement sent to provider via mobile money
3. Provider can cash out via mobile money agent in Tigo shops

- *Training sales agents about health product and mobile money* – MicroEnsure and its partners use a network of sales agents to educate consumers about the “Pona na Tigo Bima” program. MicroEnsure provides one-day training to all sales agents that covers both the insurance and mobile payment components of the program. MicroEnsure conducted agent trainings for the first two years of the program; today, Bima trains and manages the agent network using a variety of approaches to deploy agents, including placing agents in Tigo shops and working with call centers.
- *Design payment mechanisms for users* – Although MicroEnsure explored the possibility of using mobile phone payments for premium payments, mobile money utilization in Tanzania is still too infrequent to secure regular premiums. The company opted to use automated premium deductions (via airtime) to make premium contributions as convenient as possible for clients. Tigo clients are willing to pay for health insurance, but they face difficulties in paying standalone payments on a monthly basis – just as other mass-market consumers do. By bundling health insurance in a package of Tigo services and automatically deducting premiums, MicroEnsure established a convenient payment mechanism for its clients that ensure regular and timely contributions for premiums.

### **Challenges**

- *Low utilization rates for mobile money* – Whereas MicroEnsure is interested in expanding its use of mobile money to other areas (e.g. premium payments), low utilization rates for mobile money in Tanzania limit opportunities for mobile payments. Mobile money potential continues to increase as familiarity grows across Tanzania, and more widely across the continent.
- *Education of clients about health insurance* – MicroEnsure and its partners intended to launch a product that was easy to understand and operate, such as its life insurance products; however, health insurance has proven to be more challenging product for clients to understand than life insurance products. The company is continuing to address this challenge in its product development, messaging and underwriting work.

### **Looking Forward**

MicroEnsure has established itself as a clear leader in the rapidly-growing field of mobile insurance, including health. Over the next few months, MicroEnsure plans to launch new products to extend financial protection and deliver high-quality insurance coverage using mobile money payments to new markets. MicroEnsure aims to continue to build consumer trust both in insurance and in the use of mobile money as it extends the reach of its products to new populations.

### **Sources**

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- <http://www.microensure.com/>
- <http://www.tigo.com.gh/tigo-cash/tigo-cash-3-easy-steps>

## 12. CASE STUDY 11: MARIE STOPES MADAGASCAR

### Background

Marie Stopes International is a non-profit organization that is one of the leading providers of reproductive health services in the world. In 2010, Marie Stopes Madagascar (MSM) launched a voucher program to subsidize care for family planning services, with a particular focus on reaching poor women in remote and hard-to-reach areas. The program aims to help Madagascar reach its national target to increase access to reproductive health services and use of contraceptives among women—particularly among the poor—by reducing financial access barriers to care. MSM offers reproductive health vouchers to prospective clients through community-based delivery channels for about \$10USD. Each voucher has a

unique code and can be redeemed at one of 118 different health facilities in 12 regions of Madagascar, in exchange for reproductive and contraceptive health care services. The number of vouchers sold in the MSM program has increased at an impressive rate; more than 37,000 vouchers have been sold since the start of the program, and this number continues to grow. The high number of vouchers sold represents increased access to family planning services for poor women in Madagascar, which is the main objective of the MSM voucher program.

**Type of program:** Family planning voucher program targeting poor and remote areas

**Health focus:** Family planning

**Date launched:** 2010

**Stage:** Fully operational

**Size:** provider network of 150 facilities of which 118 are accredited to voucher program

**Countries:** Madagascar (12 regions)

**Key partners:** Marie Stopes International, mobile operators, USAID

**Mobile providers:** Telma, Orange, and Airtel

**Funding:** USAID

### Mobile Money

MSM integrated a mobile money system in an effort to improve the efficiency of voucher management to reduce barriers to accessing family planning (FP) and further increase availability of voluntary FP across Madagascar, as well as reducing inefficiencies and risks associated with reimbursing providers with cash payments in both urban and hard-to-reach rural areas of Madagascar. Support for developing a mobile money platform for MSM's voucher reimbursement scheme initially came from USAID as part of the Strengthening Health Outcomes through the Private Sector project, followed by funding from Strengthening International Family Planning Organizations.

MSM partners with the three largest mobile phone operators in Madagascar—Telma, Orange, and Airtel—all of which have SMS-based money transfer systems and a network of mobile money agents in kiosks across the country. Health facilities register to receive and send payments with the mobile phone operator of their choice. They can then receive cash payments through their phones, and “cash out” at local kiosks the mobile network provider's agent network. When a client comes to the social franchise with a voucher, the provider counsels the client on a range of voluntary FP methods. If the client chooses to take up a method, they are provided with the method of their choice free of charge and the provider then sends in the voucher code to MSM where MSM validates it and sends a reimbursement back to the provider via SMS. To submit claims, the providers send a unique voucher code with each claim by text message and receive the reimbursement by mobile phone payment.

## Results

From a programmatic perspective, MSM has experienced improved financial and administrative efficiency due to the availability of real-time data on service provision and redemption through the mobile money program, ultimately making more resources available for other activities. The use of mobile money in this program also provides access to current data on service provision (number and type of service), which has been very helpful for overall program management. Mobile money has also contributed to improved service delivery among providers. Service providers are reimbursed within a few days, instead of weeks or months, and their satisfaction with rapid and direct claims reimbursements has increased their motivation to comply with quality checklists around counseling and service provision in order to increase their client base.

## Lessons Learned

- *Invest in program start-up* – Some key challenges faced by MSM with its use of mobile money came when setting up the payment system, fixing “bugs,” and ensuring that the SMS-based payment system was fully functioning. MSM invested time in the initial the first years of the project and scaled up the use of mobile money slowly and systematically in order to address operational and technical issues as they arose.
- *Working with donors* – There was strong donor support for the mobile money component, to improve the operations of the MSM program which ensured voluntary and informed choice for a broad range of FP methods and appropriate care to meet reproductive health needs.
- *Ensuring timely payments to obtain buy-in from users* – The MSM accredited social franchise network providers were already familiar with FP voucher reimbursements, so the integration of mobile money only changed the payment system for the program. Providers were familiar with mobile money transactions and were very eager to work with MSM to develop a mobile money payment system for voucher reimbursements. Once developed and tested, the mobile money system was fairly easy to explain to providers, there was enthusiasm around the efficiency and quick turnaround of reimbursements for services provided. The mobile money system was accepted and advocated for wider use very quickly. While the providers initially took a bit of time to send the voucher codes for reimbursement via SMS, MSM consistently reimbursed the provider within 7 days and once accepted, transaction efficiency improved. MSM receives claims for reimbursement via their centralized server and a voucher manager cross checks the claims before issuing an electronic reimbursement.
- *Ensuring convenience for users* – MSM had initially planned to work with the biggest supplier of mobile money in Madagascar, Telma, but quickly realized that they needed to work with all three mobile network operators to ensure that health service providers could rapidly access their payments at locations nearer to them. MSM engaged local network providers at the inception of the program to understand their needs and develop an SMS reimbursement system that would be useful for provider s. A challenge around working with multiple network providers was the variation in the rate of SMS transfers and varying network coverage across the 12 regions MSM works in. In an effort to reduce financial barriers and expand access to FP regardless of network provider or

### Mobile Money Payment Process\*

1. Health facility submits voucher code to MSM
2. Voucher reimbursement submitted to the health facility within 7 days
3. Recipient cashes out at mobile money agent

\*Process may vary based by mobile money provider

financial ability, MSM deliberately chose to collaborate with multiple providers to increase access to FP across network.

### **Challenges**

- *Streamlining provider payments* – MSM reimburses every provider for each voucher claimed, which leads to a high volume of transactions. MSM is working with mobile operators to identify solutions for reducing the overall number of transactions to providers while still reimbursing voucher claims in a timely manner. This is particularly challenging given that there are currently 118 providers across the country that have different network coverage.

### **Looking Forward**

Marie Stopes International is currently exploring opportunities to expand the use of mobile money payments in its programs in other countries to replace cash flows. In some places, uptake of mobile money payment systems is happening organically; program staff at Marie Stopes Kenya began using mobile money transfers to rapidly transfer money using M-Pesa to send cash advances to cover medical costs and payments for last minute travel costs. MSK is now integrating a mobile payment system to pay community health workers and youth peer educators monthly stipends and to cover costs for trainings and other activities.

### **Sources:**

- Interview in July 2013 with Judy Gold, formerly Marie Stopes International.
- Interview in July and October 2013 with Lalaina Razafinirinasoa, Projects, Evidence and Innovations Director, Marie Stopes.
- <http://www.mariestopes.org>



# 13. CASE STUDY 12: KENYA NATIONAL HEALTH INSURANCE FUND (NHIF)

## Background

The Kenya National Hospital Insurance Fund (NHIF) is the oldest government insurance scheme in Africa. As the primary provider of health insurance in Kenya its mandate is to provide access to quality and affordable health care for all Kenyans. NHIF membership is compulsory for all salaried employees. Premium contributions are calculated on a graduated scale based on income, and deducted automatically through payroll. For self-employed and other informal sector workers, membership is contributory (voluntary) and available at a fixed premium rate of 160 Kenya Shillings per month. Overall membership enrollment for formal and informal sector populations has reached 4.5 million people (11% of the Kenyan population). While coverage is high for the formal sector (98%), coverage of the informal sector which accounts for over 80% of Kenya's workforce has proven to be more challenging, and remains low at 16% of the informal sector population.

**Type of program:** Collection of health insurance premium payments  
**Health focus:** Health insurance  
**Date launched:** 2010  
**Stage:** National-level  
**Size:** Close to 100,000 NHIF members use M-pesa for paying monthly insurance premiums  
**Country:** Kenya  
**Key partners:** Safaricom  
**Mobile providers:** Safaricom (M-Pesa)  
**Funding:** NHIF

## Mobile Money

To facilitate timely remittance of member contributions and maintenance of up-to-date payment information for individual accounts, NHIF has partnered with Safaricom Limited, a leading telecommunications company in Kenya, to provide a flexible and convenient platform for remittance of monthly insurance premium contributions from informal sector populations. NHIF no longer transacts in cash for premium collections and has additionally partnered with banks to enable direct cash and check deposits from members. A key goal of these partnerships is to improve access to and utilization of the NHIF services.

## Results

The use of the highly successful and innovative M-Pesa money transfer platform has enabled NHIF to extend health services to informal sector workers who are not captured in formal payroll systems and whose incomes are often less regular or predictable. The option to make monthly insurance contributions using M-Pesa has helped to minimize travel to NHIF offices and time spent in long lines away from productive livelihood activities. M-Pesa is a particularly useful payment method for NHIF beneficiaries living in rural areas with limited access to NHIF offices. Additionally, by allowing workers to make incremental contributions to their monthly premium, the M-Pesa platform has helped to reduce the frequency of NHIF's penalty charge – 5 times the monthly contribution amount for those who default in remitting contributions. The steep penalty fee has been a major deterrent to re-enrollment for defaulted members as well as attraction of new members.



Since launch in 2010, the number of NHIF members using M-Pesa to make monthly premium contributions has grown nearly ten-fold from 10,000 to close to 100,000 in 2014. To use the M-Pesa payment platform, members must already be registered users of M-Pesa and possess a National ID, a requirement for making M-Pesa payments. Revenue collection for NHIF grew from 1M KES per month at the end of the 2011, to an average of 35 M KES per month in 2013.

## Lessons Learned

- *Fewer cashiers are required to handle M-Pesa payments* – This has helped to reduce administrative burdens.
- *The M-Pesa payment system has made it possible for individuals to submit payments on behalf of others* – with limited or no income, including extended family members, orphans, and the elderly.

### Mobile Money Payment Process

1. Individual selects Pay Bill option
2. Enters NHIF Business Number – Type 200222
3. Enters a/c no – Type in contributor's National Identity Number
4. Enters amount – Type in the amount you wish to contribute
5. Enters Pin – Type M-PESA PIN
6. Confirms details are correct and hits OK
7. User receives two confirmation SMS's from M-PESA and NHIF immediately

## Challenges

- *Integration of systems* – Initially, there were challenges and delays in integrating the M-Pesa payment platform with the NHIF payment and information technology system. Beneficiaries would often arrive at health facilities to learn that they could not access services because contributions were not being reflected in membership accounts in a timely manner. This has now been corrected and is recognized by the NHIF as an important consideration to take into account when introducing new payment platforms.
- *Identifying bottlenecks* – In its first iteration, NHIF's M-Pesa payment system was not able to detect information that might have been entered erroneously. All payments were processed regardless of whether the member account information was correct or not. It was a long and tedious process for NHIF staff to trace these errors which often were the result of a mis-keyed number, and correctly assign payment to the right individual. The delays affected members who could not access services until their accounts were credited with the correct payment amounts.

## Looking Forward

NHIF has set an ambitious target of enrolling a total of 10M Kenyans with 33% or approximately 3M comprising the informal sector, by the end of 2014. A media campaign focused on creating awareness of the health coverage plan for the informal sector and the flexible M-Pesa payment option is underway. This includes print, media and radio ads in vernacular language to reach populations in rural areas. NHIF is also exploring a bulk SMS offering with Safaricom to send reminders to members about the status of payments, coverage and important NHIF contact information.

Finally, in the near future NHIF plans to introduce scratch cards in fixed increments as another convenient and flexible option for remittance of monthly premium contributions from informal sector populations. For this offering, NHIF intends to contract with agents who have access to remote, internal and marginalized areas of the country where branch offices may not exist. These agents would have the ability both to register new beneficiaries and issue NHIF membership cards.

## Sources

- Interview with, Juliet Maara, Senior Programme Officer, NHIF March 19, 2014.

# 14. CASE STUDY 13: L'UNION TECHNIQUE DE LA MUTUALITE MALIENNE

## Background

As part of a national commitment to work towards achieving universal health coverage, Mali is scaling-up a network of community based health insurance schemes, otherwise referred to as mutuelles. The mutuelles currently cover 4% of the population. Efforts are underway to scale the mutuelles with the aim of covering 40% of the population by 2023. Membership in the mutuelles is voluntary, and members largely consist of low-income populations residing in rural areas of the country.

A major challenge faced by the mutuelles is collection and management of membership contributions (CFA 6,000, equivalent to 12.70USD, per year). The Government of Mali subsidizes 50% of the membership contribution for many members, but even the subsidized premium is expensive for Mali's poorest. Traveling to a mutuelle facility to pay membership fees can pose a burden and create additional costs for members, particularly those residing in remote rural areas. For the mutuelles, it is administratively complicated and costly to collect membership contributions in-person, particularly in hard-to-reach rural areas of the country.

**Use of mobile money:** Health insurance premium payments

**Date launched:** September 2013

**Stage:** Scale up

**Size:** 500+ mobile money transactions among 30 mutuelles

**Country:** Mali

**Area of the country:** Country-wide

**Funding:** Self-funded

**Key partners:** Orange

## Mobile Money

In June 2011, shortly after the launch of several mutuelle pilots in Mali, managers of Union Technique de la Mutualité Malienne (UTM) attended a workshop in Mombasa, Kenya, organized by the [Joint Learning Network for Universal Health Coverage \(JLN\)](#), where they learned about the Kenya National Hospital Insurance Fund's (NHIF) use of M-Pesa, the well-known payment platform, to collect health insurance premiums from informal sector populations. Union Technique de la Mutualité Malienne (UTM) is one of the largest associations of Mutuelle Health Organizations in Mali. It plays an important role in providing political, technical, and administrative support to all of Mali's mutuelles.

Upon returning to Mali, UTM managers were inspired to explore as a potential tool to collect health insurance premiums in Mali. They began exploratory conversations with Orange Telecommunications, the mobile network provider in Mali with the most extensive coverage across the country. Over the next 2 years, UTM managers worked in partnership with Orange-Cash program to design a mobile money payment system for collecting mutuelle membership contributions. UTM launched the mobile money application within all of Mali's mutuelles in September 2013. One of the key features of this program is a customized IT platform developed jointly by Orange and UTM to enable secure file transfer between the two institutions to ensure that both parties can access updated and accurate mobile payment records for mutuelle members. This IT platform also allows UTM administrator to register mutuelle members with Orange mobile accounts to the Orange-Cash program directly from the UTM office.

## Results

As of June 2014, 300+ mutuelle members from across the country had paid premiums via mobile money, resulting in 500+ mobile money transactions. This number continues to grow.

## Lessons Learned

- *Establishing an agreement with a network service provider* – When UTM first approached Orange, the Orange-Cash program had been in operation for less than one year in Mali. The program was in high-demand in Mali, but only among private sector firms. UTM was the first organization in the public sector – and in the health sector – to work with the Orange Cash program. A business agreement was signed between UTM and Orange after one year of negotiations.
- *Adapting a mobile money application to meet program needs* – UTM asked Orange to make several changes to its Orange-Cash program in Mali to make it user-friendly for mutuelle members, many of whom are poor and have limited financial literacy. Initially, the Orange Cash program didn't allow users to make incremental payments, which is an important feature for mutuelle members. Upon request, Orange adapted the program to enable “flexible payments,” which allow members to submit premium contributions – of any size - at their convenience. UTM also asked Orange-Cash to display fees associated with each transaction before a payment is sent. As transaction fees can be prohibitive costs for mutuelle members, UTM managers wanted to ensure transparency about all fees incurred in the payment process.
- *Educating program users about mobile money* – In order to inform and educate existing mutuelle members about paying premium payments via Orange-Cash, UTM staff diligently reached out to all mutuelle members by sending text messages and conducting phone calls. For existing members already subscribed to Orange, UTM members offered to register them for Orange Cash and would do so upon request. UTM offers to register all new mutuelle members to the Orange Cash program.

### Mobile Money Payment Process

1. *Mutuelle members visits Orange Cash agent to add money to account*
2. *Member submits partial or full contribution amount to mutuelles via mobile money, and receives notification of transaction cost prior to sending payment*
3. *Data on member contribution automatically updated in Orange Cash and UTM databases*

## Challenges

- *Resistance among users to pay transaction fees* – During the pilot phase of the program, UTM learned that mutuelle members were strongly opposed to paying transaction fees, particularly as hidden costs. UTM worked with the telecom provider to ensure that mobile money users would receive a notification message about all transaction fees, but members continue to be concerned about transaction fees. In response to this, UTM staff explains that transaction fees are lower than the travel and opportunity costs associated with paying premiums in-person.
- *Providing customer-service to mutuelle members* – When Mutuelle members have questions about the Orange-cash program or encounter difficulties, UTM managers and staff respond to address their needs because Orange staff are unfamiliar with the mutuelles payment system and therefore lack knowledge to adequately support mutuelle members when needed.

## Looking Forward

UTM and Mali's mutuelles aim to increasingly use mobile money to collect and manage premium payments, particularly as the mobile money ecosystem continues to develop in Mali and membership in mutuelles expands. UTM is also exploring a mobile-based payment mechanism to send claims payments to health providers.

## Sources

- <http://jointlearningnetwork.org/>
- Interview in December 2013 with Cheickna Toure, UTM Deputy Director General.

# 15. CASE STUDY 14: MOVERCADO

## Background

PSI Mozambique's Por Ti (For You) health social marketing program uses a mobile technology powered platform to increase healthy behaviors and encourage use of health commodities, such as condoms, water purification and micro-nutrients. Launched in May 2012, the platform known as Movercado is an ecosystem that leverages micro-entrepreneurs and small businesses to expand access to health commodities to bottom of the pyramid markets.

PSI uses a trained cadre of 1440 micro-entrepreneur interpersonal communication agents to conduct outreach sessions that motivate people to change current health behaviors and adopt new ones (for example around HIV prevention and use of condoms, and anti-natal care). At the end of each session, beneficiaries are issued a unique code, which when entered into their cell phones, validate the outreach session and trigger a commission for the agent. Beneficiaries also receive an SMS with additional health information and a code for the relevant health product which can be redeemed at any participating shop to receive free or discounted access to products.

The Troka Aki ("Swap here" in Portuguese) brand identifies participating outlets that will redeem Movercado-powered vouchers and accept payments. Troka Aki points include informal neighborhood shops, wholesalers service providers, and pharmacies. Currently, there are 338 active Troka Aki points across the country, with plans to expand to another 1000 by end 2014, distributing products such as condoms, water purification solution and micro-nutrient powder. Additional products will be introduced to the ecosystem, including long-lasting insecticide treated nets and soap.

The use of vouchers removes a significant cash-flow barrier; the beneficiary accesses the product and the shops are refunded by PSI, increasing business and incentivizing them to actively promote and carry health products (condoms, water purification products, etc.). For the vendors, the voucher transactions are equivalent to regular sales, as they receive the same profit margin as they would from the sale of other commodities.

The beneficiary's phone number is sent to a quality control call-center where a trained call-agent contacts beneficiaries and conducts in-depth interviews in order to evaluate the amount of information retained by each beneficiary from sessions with interpersonal communication agents (recall rate). Data from the interviews is used to calculate incentive payments to agents and to identify areas where they may need additional training.

## Mobile Money

Movercado uses mobile money as a component of its larger program and technology platform to send payments safely and securely to shop vendors. After retailers distribute health products, they submit a

**Use of mobile money:** reimbursement of costs for health commodities

**Date launched:** May 2012

**Stage:** Scale up

**Size:** 480+ registered shops

**Country:** Mozambique

**Area of the country:** National, focused in Maputo, Sofala, Tete.

**Funding:** USAID, Embassy of Netherlands, DANIDA, DFID

**Key partners:** USAID, Embassy of Netherlands

code associated with the product via SMS and receive automatic reimbursements via mobile money. This mobile payment system allows for careful tracking of the sales and inventories of the shops. The use of mobile money goes beyond health; the platform can be used for food as well as nonfood distribution programs run by other NGOs. Retailers are trained to submit product codes and enable and use mobile money to redeem the cost of the product.

## Results

Movercado is scaling up its use of mobile money as the program grows. As of 2014, Movercado had registered more than 480 Troka Aki outlets and approximately 2 million mobile money transactions.

## Lessons Learned

- *SMS vouchers offer an alternative approach for addressing inefficient supply chains which disrupt local markets.* Costs associated with distribution of health commodities, such as transportation and warehousing, can be prohibitively expensive and can deter vendors from sending commodities to rural and hard-to-reach areas, where they are usually needed most. These inefficiencies in traditional supply chains create tremendous opportunities for alternative distribution methods, such as SMS vouchers, which deliver a subsidy directly to beneficiaries and bring economic value to bottom of the pyramid economies.
- *Using data to create a user-centric program.* Individuals are logged and tracked within the Movercado IT system via their cell phone numbers, which enables the collection of real-time data on interactions between health consumers, health workers, local health markets (shops/small businesses), and health facilities, as well as the broader supply-side chain for health commodities. Movercado analyzes this data to gain insights on the best ways to engage with program users and beneficiaries and constantly adapts the program design to very rapidly respond to changes in consumption patterns.
- *The value of agility.* Movercado evolves quickly in response to consumer behavior and market adoption. From a programmatic perspective, the most important lesson learned is to rapidly launch new features and applications and use real feedback from users to modify and improve upon the program.
- *Quality Assurance.* As with any intervention directly targeting consumers, quality assurance is very important. Movercado has a call center that completes surveys with beneficiaries on a daily basis and updates results in real time to a cloud-based system. Based on this feedback, Movercado makes adjustments to its program operations (e.g. distribution channels) and its IT platform (i.e. minimizing incorrect use of codes).

### Mobile Money Payment Process

1. After selling a commodity the retailer submits the product code via SMS
2. A reimbursement for the health commodity is automatically sent to retailer via mobile money
3. Retailer cashes-out at mobile money agent

## Challenges

- *Reaching at-risk populations.* Movercado has demonstrated exceptional resourcefulness in reaching poor and disadvantaged populations with their services. Nonetheless, there are significant barriers to mobile money uptake and use among these populations, which poses an ongoing challenge. These include: lack of access to cell phones, low mobile phone subscription in rural areas, low literacy rates (which impede sending/receiving health information via text), as well as lack of cash throughout bottom-of pyramid economies and in particular at agent cash-out points. This creates a huge

opportunity for virtual cash/ wallet applications. Movercado has developed one such application and is currently testing it.

- *Program sustainability.* The Movercado program is funded by several donors. The Embassy of the Kingdom of Netherland has supported core program development, while the operationalization and application has been funded by USAID via Population Services International (PSI). As operational funding was reduced in 2014, PSI Mozambique is experimenting with cross-subsidies and the creation of micro-entrepreneur networks aimed at growing the scale of the eco-system without requiring significant funding.

### **Looking Forward**

Within and outside of Mozambique, there is significant interest in Movercado to expand the use of platform. PSI is exploring practical options to make this platform available globally in health and other sectors.

### **Sources**

- <http://enter.movercado.org/>
- Interview in August 2014 with Iulian Circo, PSI Country Manager for Mozambique.







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