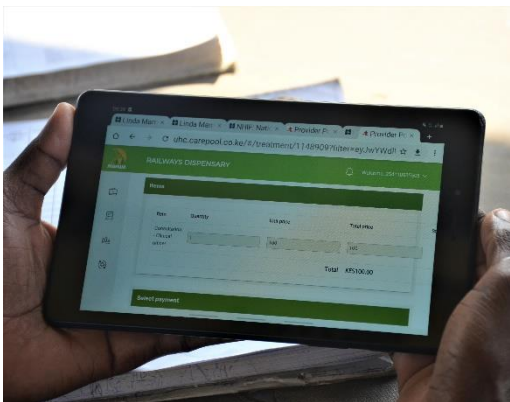




JULY 30, 2021



# DIGITAL FINANCIAL SERVICES FOR HEALTH PROGRAMMATIC CASE STUDIES

EXPERIENCE FROM KENYA AND RWANDA

MANAGEMENT SCIENCES FOR HEALTH

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## ACKNOWLEDGEMENTS

The authors gratefully acknowledge insights offered by the key informants from PharmAccess, Kenya's National Health Insurance Fund and the Rwanda Social Security Board – as well as the dozens of program managers and beneficiaries of the different digital financial services programs who participated in the field surveys in the midst of the COVID-19 pandemic. In addition, we would like to thank colleagues Sherri Haas (USAID), Aleefia Somji (MSH), Emily Carnahan (PATH), Rachel Marcus (USAID), and Amani M'Bale (The Bill & Melinda Gates Foundation) for their guidance and important contributions to the design and documentation of these case studies.

**Recommended Citation:** Wilson, D<sup>1</sup>, Haas, S<sup>2</sup>, Hitimana R<sup>3</sup>, Rulisa, A<sup>3</sup>, Machichi, A<sup>4</sup>. 2021. *Digital Financial Services for Health Programmatic Cases Studies: Experience from Rwanda and Kenya*. Arlington, VA: Management Sciences for Health

**Date:** July 2021

**Submitted to:** Digital Square, PATH

**Digital Square Subaward No:** AID.2134-01705021-SUB

**Cover photo:** Joseph Odegu, Kisumu, Kenya, PharmAccess (Top); Jacklyne Ashubwe, Kakamega, Kenya (Bottom Right); Todd Shapera, Kigali, Rwanda (Bottom Left)

Management Sciences for Health prepared these case studies with funding from Digital Square, in support of the Digital Financial Services for Health project. Digital Square is a PATH-led initiative funded and designed by the United States Agency for International Development, the Bill & Melinda Gates Foundation, and a consortium of other investors.

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<sup>4</sup> PharmAccess, Kenya

## ACRONYMS

<b>3MS</b>	Mutuelle Membership Management System
<b>API</b>	Application Program Interface
<b>CA</b>	Cash Advance – unsecured mobile loan program funded by MCF
<b>CBHI</b>	Community Based Health Insurance
<b>CCT</b>	Conditional cash transfer
<b>CHV</b>	Community Health Volunteers
<b>CHW</b>	Community Health Worker
<b>DFS</b>	Digital financial service(s)
<b>EMR</b>	Electronic medical record
<b>FINTECH</b>	Companies that support the nexus between financing and technology
<b>HMIS</b>	Health management information system
<b>HSA</b>	Health Savings Account
<b>ICT</b>	Information and communication technology
<b>IFHA</b>	Investment Funds for Health in Africa
<b>i-PUSH</b>	Innovative Partnership for Universal Sustainable Healthcare
<b>Irembo</b>	Rwandan ‘gateway’ for government digital financial services
<b>KIIs</b>	Key informant interviews
<b>LHSS</b>	Local Health System Sustainability Project
<b>LMIC</b>	Low- and middle-income countries
<b>LODA</b>	Local Administrative Entities Development Authority (Rwanda)
<b>MAF</b>	Mobile Asset Finance – secured mobile loans for equipment purchases funded by MCF
<b>MCF</b>	Medical Credit Fund
<b>MNO</b>	Mobile network operator
<b>MOH</b>	Ministry of Health
<b>M-PESA</b>	Mobile phone-based money transfer service, mobile ‘cash’ (Kiswahili),
<b>MSH</b>	Management Sciences for Health
<b>M-TIBA</b>	Mobile ‘Care’ (Kiswahili)
<b>NHIA</b>	National Health Insurance Authority
<b>NHIF</b>	National Hospital Insurance Fund (Kenya)
<b>NIDA</b>	National Identification Agency, Rwanda
<b>OOP</b>	Out-of-pocket
<b>RSSB</b>	Rwanda Social Security Board
<b>SaaS</b>	Software as a service
<b>SACCO</b>	Savings and Credit Cooperative
<b>SME</b>	Small and medium-size enterprises
<b>SMS</b>	Short messaging service
<b>UHC</b>	Universal health coverage
<b>USAID</b>	United States Agency for International Development
<b>USSD</b>	Unstructured supplementary service data
<b>WRA</b>	Women of Reproductive Age

## EXECUTIVE SUMMARY

Digital financial services (DFS) for health have been identified as a category of innovations that can contribute to achieving the Sustainable Development Goal 3.8 of achieving universal health coverage (UHC)<sup>5</sup>. Applications include digital health insurance; health savings accounts; credit, transfers, remittances, and loans for health purposes; vouchers for health care; payments for health care/insurance by beneficiaries; and bulk purchases/payments across the health system, including payments to health workers.

This research is intended to examine, through two programmatic case studies, the role of DFS in advancing financial protection in accessing health services and supporting improved health system performance in two countries, Rwanda and Kenya. The case studies are:

- Community-based health insurance (CBHI) program in Rwanda
- M-TIBA-based i-PUSH program and Medical Credit Fund (MCF) loans including Cash Advance (CA) and Mobile Asset Financing (MAF) in Kenya

The programmatic case studies utilized a mixed methods and process evaluation approach to examine the key implementation considerations of the programs. Data collection methods included qualitative key informant interviews (KIIs) and analysis of existing secondary data previously collected through the programs. The study sought to engage the range of stakeholders in the DFS for health programs, including implementers, developers, and recipients/users, and even some who opted not to use the digital options. A stratified purposeful sampling methodology was used to select participants to conduct semi-structured KIIs.

The research sought to answer the following questions:

1. What is the experience in implementing the program, specifically?
  - a. Facilitators and barriers to successful implementation
  - b. Program adaptations
  - c. Pandemic-related changes
2. How is the program perceived to influence health system performance?
3. What has been the client/beneficiary experience of the program with regard to:
  - a. Financial protection
  - b. Service demand/utilization

Respondents from both countries believed that DFS contributed to health system performance by making systems more responsive, enabling programs to quickly implement changes to services based on new laws or client-proposed features. The DFS initiatives supported national e-government initiatives to move from manual to automated management for greater efficiency, transparency, equity, and control.

With respect to the client/beneficiary experience, the key informants and secondary data confirmed that both implementations likely contributed to increasing health insurance coverage; however, there were also many other changes in market dynamics

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<sup>5</sup> <https://www.who.int/health-topics/sustainable-development-goals>

that were also likely to influence these changes. Respondents (program managers and some beneficiaries) praised the easy use of digital functions, compared to older paper-based systems, and their effect on individual savings behavior to prepare them for health expenditure should their household be hit by a health shock. Beneficiaries also felt more engaged in the process by being able to pay premiums and check the status of their enrollment in real time using a simple feature phone.

Increasing trends in utilization of health services were also noted by beneficiaries and service providers from both programs as enrollment in formal insurance schemes increased and entitled beneficiaries to a wider array of services. However, the extent to which this was influenced by DFS could not be established through these case studies.

The findings also suggested a variety of other health system performance gains including improvements in access to better quality data for case management, fraud detection, health facility cash flow management, cost savings, and improved quality of services.

A number of implementation considerations emerged that contribute to the success or failure of DFS for health. These included the importance of multisectoral investments in the general information and communication technology (ICT) infrastructure; the value of leveraging existing community systems and resources (such as CHWs and mobile money agents) to boost enrollment and help households overcome the digital divide; and the importance of developing trust across government agencies and private sector organizations to enable interoperability with national population registration systems.

The studies led to the development of eight recommendations, summarized below, for the design and implementation of health programs incorporating DFS:

- DFS for health programs should begin with an assessment of the current state of the digital health ecosystem to establish a multisectoral ICT investment roadmap to fill in key gaps and build on and sustain a solid foundation in the country where they are implemented.
- DFS for health programs should leverage the existing service delivery ecosystem, for example, community-level agents (such as CHWs, community health volunteers [CHVs], mobile phone agents), to make services accessible at the household level and help bridge the digital divide.
- It is critical to develop trust and engage multisectoral stakeholders from government (health and other ministries) and private sectors (financial technology, banking, and mobile industries) in order to promote collaboration and improve sustainability of DFS for health initiatives.
- DFS for health programs should promote opportunities to use the wealth of transactional data generated by DFS for other purposes.
- Initiatives that seek to expand financial protection must be built around the financial realities of the target populations they serve.
- DFS programs should incorporate mechanisms and payment strategies that make it easy for beneficiaries and third parties (relatives, small businesses, government, or donors) to contribute to insurance premium costs or health savings accounts so that more economically disadvantaged families can benefit

from preventive and curative health services, and countries can advance on the path toward UHC.

- Investing in DFS programs that support health insurance premium payments may reduce some barriers to UHC and is likely to expand health service coverage.
- Programs to build resilience should consider incorporating DFS into health care financing initiatives.



# Digital Financial Services for Health Programmatic Case Studies: Experience from Kenya and Rwanda

## BACKGROUND

As countries work toward universal health coverage (UHC), digital financial services (DFS) for health have been identified as a category of innovations that can contribute to achievement of this goal. Applications in the context of health include digital health insurance; health savings accounts; credit, transfers, remittances, and loans; vouchers for health care; payments for health care/insurance by beneficiaries; and bulk purchases/payments across the health system, including payments to health workers.<sup>6</sup>

About 100 million people are still being pushed into “extreme poverty” (living on \$1.90 or less a day) because they have to pay for health care. Women are especially vulnerable to extreme poverty as they typically have more restricted access to financial and productive assets than men, and they shoulder a greater burden of using unpaid leave time. Gender inequality is high in many countries facing high or extreme poverty rates, and women in low- and middle-income countries are less likely than men to own mobile phones and to access internet-based mobile services.

Financial protection is achieved when direct payments made to obtain health services do not expose people to financial hardship and do not threaten living standards. A key to protecting people is to ensure prepayment (savings) and pooling of resources (insurance) for health, rather than paying for services out-of-pocket at the time of use. Advances in digital technology have made it more efficient and affordable to reach people with key services.

The programmatic case studies described in this document will contribute to the areas of research inquiry below by utilizing qualitative data and existing program data/information to the extent available. It is expected that the case studies will provide insight and help understand stakeholder perceptions on the following (without assigning attribution or evaluating impact):

- Financial protection – such as how the program contributes to increases in financial protection among clients and if that differs from a non-digital approach (or prior to digitalization).
- Demand and Utilization – such as whether the DFS-enabled program contributed to demand for and use of health services among clients, particularly poor and vulnerable populations, and if/how the program was designed to address client demand and utilization.
- Health Systems Performance – such as whether the DFS-enabled program was designed to and/or perceived to improve quality and responsiveness of health

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<sup>6</sup> Mangone, Emily, Pam Riley, and Kenya Datari. 2021. *Digital Financial Services for Health: A Global Evidence Review. Page 1*, Rockville, MD: USAID Local Health System Sustainability Project, Abt Associates Inc.

service providers, and if any perceived changes could be understood to be DFS or other digitization-related.

- Key considerations—beyond digitization—that appear to have contributed to the results and should be considered as enablers for successful DFS implementations.

This research is intended to examine the role of DFS in the following two programmatic case studies that document efforts to advance financial protection in accessing health services and to support improved health system performance in two countries:

- Community-based health insurance (CBHI) program in Rwanda
- M-TIBA-based i-PUSH program and Medical Credit Fund (MCF) digital loans including Cash Advance (CA) and Mobile Asset Financing (MAF) in Kenya

These programs were selected because they represent innovative use of digital financing technologies to support UHC programs at scale. The Rwanda 3MS program was government led and implemented nationally, while the Kenya i-PUSH and MCF CA/MAF were privately led programs targeting specific underserved populations—women of reproductive age from low-income communities and their children.

Building on the 2019 publication “The Role of DFS in Accelerating USAID’s Health Goals”<sup>7</sup>, USAID’s Global Health Bureau, via its Office of Health Systems and Center for Innovation and Impact, commissioned studies on the role of DFS in advancing financial protection and supporting improved health system performance, and better understanding the factors that make solutions successful, and the role digitization can play in enhancing and leveraging these factors.

As a complementary initiative to this work, USAID funded a global evidence review of DFS for health that was implemented by Abt Associates through the Local Health Systems Sustainability Project (LHSS).<sup>8</sup> The research questions for that study were essentially the same as the ones in these cases studies, but they focused on a broader range of DFS interventions at a higher level of analysis. The programmatic case studies enabled us to drill down and better understand specific interventions and implementation issues. The Kenya programs were selected for this in-depth case study partly because they are representative of a wide range of DFS work reported from Kenya in the LHSS study.

The systematic literature review identified 34 documents from 12 sources, and LHSS conducted interviews with 36 key informants from 26 organizations to enrich and qualify the evidence collected in the literature review. Most of the included documents focused on mobile money applications in health and were published in the last five years. Nearly half of the documents described activities in Kenya. The research questions for the systematic review were similar to those in this case study:

- Do digital financial services increase financial protection in low-resource settings?

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<sup>7</sup> [https://www.usaid.gov/sites/default/files/documents/15396/DFS\\_Accelerating\\_USAID\\_HealthGoals.pdf](https://www.usaid.gov/sites/default/files/documents/15396/DFS_Accelerating_USAID_HealthGoals.pdf)

<sup>8</sup> Mangone, Emily, Pam Riley, and Kenya Datari. 2021. Digital Financial Services for Health: A Global Evidence Review. Rockville, MD: USAID Local Health System Sustainability Project, Abt Associates Inc., [https://pdf.usaid.gov/pdf\\_docs/PA00XDJ7.pdf](https://pdf.usaid.gov/pdf_docs/PA00XDJ7.pdf)

- Do digital financial services increase demand for or utilization of health services in low-resource settings?
- Do digital financial services impact health system performance in low-resource settings?
- What factors contribute to the success or failure of digital financial services for health?

Some of the findings of these programmatic case studies reinforce those of the systematic review, especially the following:

- “Interoperability and digital payment ecosystems are key to expanding use of digital financial services”
- “Digitization of parallel and upstream systems facilitate implementation of digital financial services.”
- “A political mandate or a national crisis can expedite a hospitable regulatory environment for digital financial services for health.”
- Digital platforms “can facilitate participation in national health insurance”.
- “Mobile money accounts help people smooth health and non-health expenditures when faced with a health shock.”
- “Digital loans smooth health and non-health expenditures for populations who do not have access to alternative formal or informal health financing options”.
- “Mobile money facilitates health care use in low-resource settings.”
- “Digitization of health insurance processes results in operational and cost efficiencies.”
- “Digital financial services have the potential to improve service quality.”

The full report of the LHSS systematic review is available at on the USAID web site<sup>9</sup>.

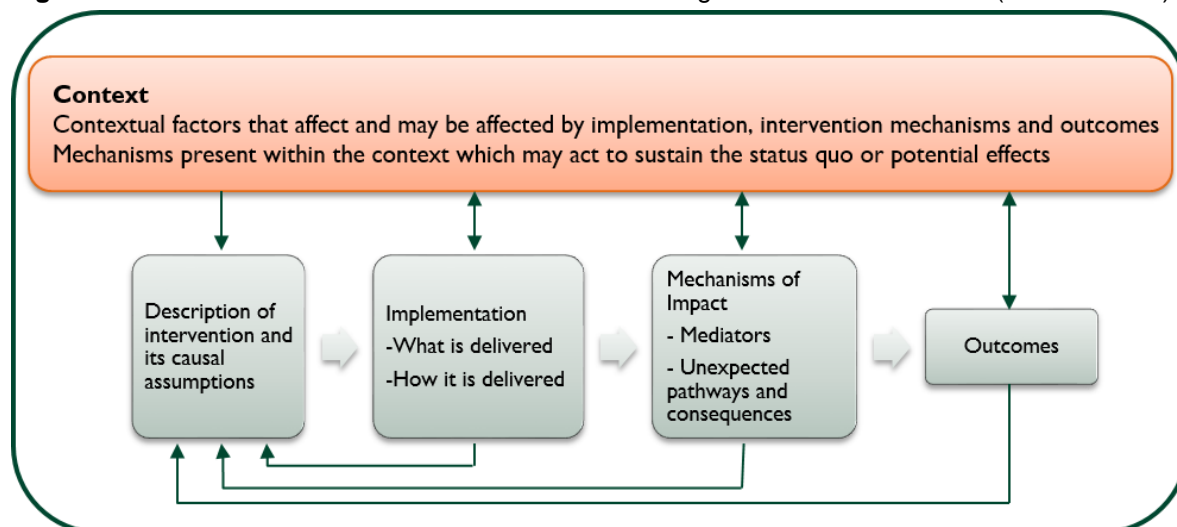
## CONCEPTUAL FRAMEWORK AND RESEARCH QUESTIONS

Under the PATH-led Digital Square initiative, MSH, in collaboration with government stakeholders, PharmAccess and USAID, examined the role of DFS in two programmatic case studies of initiatives to advance financial protection in accessing health services and to support improved health system performance. The study gathers insight and triangulates results across different stakeholder perspectives including DFS implementers, governments, beneficiaries, and providers.

The programmatic case studies utilized a mixed methods and process evaluation approach to examine the key implementation considerations of the programs (see Figure 1 below). It used qualitative methods and secondary analysis of quantitative data to answer the research questions and document critical facilitators and barriers to success in implementation—including ways in which the programs adapted and addressed challenges, as well as lessons in health process digitalization.

<sup>9</sup> [https://pdf.usaid.gov/pdf\\_docs/PA00XDJ7.pdf](https://pdf.usaid.gov/pdf_docs/PA00XDJ7.pdf)

**Figure 1:** Process Evaluation Framework used for the Programmatic Case Studies (Source: MSH)



## METHODOLOGY AND STUDY POPULATIONS

A stratified purposeful sampling methodology was used to select participants to conduct semi-structured key informant interviews (KIIs). Participants were selected based on several criteria (see the table below). Where multiple participants were available for each stratified group after meeting the minimum criteria, participants were selected randomly. The study sought to create a 360° view of the different DFS programs by conducting qualitative interviews with implementers, developers, and recipients/users—and even some who opted not to use the digital options. Professional researchers were hired to conduct the field interviews in Kinyarwanda and Kiswahili and transcribe them into English. In both cases, the researchers pre-tested the translated interview guides and made minor changes to the translations before completing the process. The final questionnaire formats are included in annex. Field interviews were recorded and transcribed, as were about half of the above site interviews. The recorded above site interviews were transcribed using transcription software (otter.ai) before being edited to correct a few un-transcribable texts based on interview notes.

As described in the two study protocols developed and approved by ethics committees in both countries, survey respondents were advised of the voluntary nature of their contributions and provided written (in the case of face-to-face interviews) or verbal consent (for virtual interviews) before beginning.

**Table 1:** Key informants and study questions

Data Collection Method	1. What is the experience in implementing the program, specifically: a. facilitators and barriers to successful implementation b. program adaptations c. pandemic-related changes	2. How is the program perceived to influence health systems performance?	3. What has been the client/beneficiary experience of the program and with regard to: a. financial protection? b. service demand/utilization
<b>Kenya</b>			
<b>i-PUSH M-TIBA</b>			
KIIs CarePay	X	X	
KIIs NHIF	X	X	
KIIs PharmAccess	X	X	
KIIs i-PUSH M-TIBA participating facilities (1 staff per)	X	X	
KIIs i-PUSH participants (WRA)		X	X
Secondary analysis of i-PUSH M-TIBA program data		X	X
<b>MCF Digital Cash Advance and Mobile Asset Finance</b>			
KIIs CarePay	X	X	
KIIs PharmAccess	X	X	
KIIs CA and MAF loan recipient facilities (1 staff per)		X	X
Secondary analysis of CA and MAF program data		X	X
<b>Rwanda</b>			
KIIs IREMBO (implementers)	X	X	
KIIs 3MS developers (Software company and RSSB IT)	X		
KIIs National CBHI managers	X	X	
KIIs District CBHI managers	X	X	
KIIs CBHI clients (DFS users and		X	X (DFS users and non-

Data Collection Method	1. What is the experience in implementing the program, specifically: a. facilitators and barriers to successful implementation b. program adaptations c. pandemic-related changes	2. How is the program perceived to influence health systems performance?	3. What has been the client/beneficiary experience of the program and with regard to: a. financial protection? b. service demand/utilization
non-users)			users)
KIs participating facilities (public and private facilities)	X	X	
Secondary analysis of CBHI 3MS program aggregate data			X

For the Kenya case study, the team conducted a total of 7 in-depth interviews with program implementers (stakeholders from PharmAccess, CarePay, and the National Hospital Insurance Fund [NHIF]) and 26 in-depth interviews with program beneficiaries. For the Rwanda case study, the team conducted 9 in-depth interviews with program implementers (stakeholders from the organizations that implement the community-based health insurance and digital payment services) and 18 interviews with program beneficiaries.

Two of the envisioned interviews could not be conducted. In Rwanda, this was the case for the respondent from Irembo (the digital services platform used for many e-government services). In Kenya, we had hoped to interview MAF loan recipients from health facilities that did not continue with the program, but it seems there were few such facilities and most had defaulted on their loans, so they were unwilling to participate in an interview.

The original plan was to analyze the qualitative data deductively using computer-assisted qualitative data analysis software (CAQDAS), however due to the simple short question-answer dyads used in the interview guides and the relatively small number of respondents it turned out to be more efficient to analyze the data using a data-charting approach<sup>10</sup>. We developed an Excel analysis grid with each question and response in rows and six sets of thematic codes in columns (four to seven text strings each related to demand, enrollment, barriers, outcomes, sustainability and other). Each of the responses was reviewed by the data analyst and the content manually linked to the appropriate thematic code. The responses were then grouped by filtering this database on each of the columns, extracting the relevant responses onto a synthesized table that grouped responses to each question by DFS program. This synthesized table formed the bases for the narratives in the findings section.

<sup>10</sup> <https://bmcmedresmethodol.biomedcentral.com/articles/10.1186/1471-2288-13-117>

## SECONDARY DATA ANALYSES

Qualitative interviews were supplemented by secondary analysis of data from the different digital financial services platforms to provide evidence of participant demographics; as well as to describe membership, utilization, and financial trends.

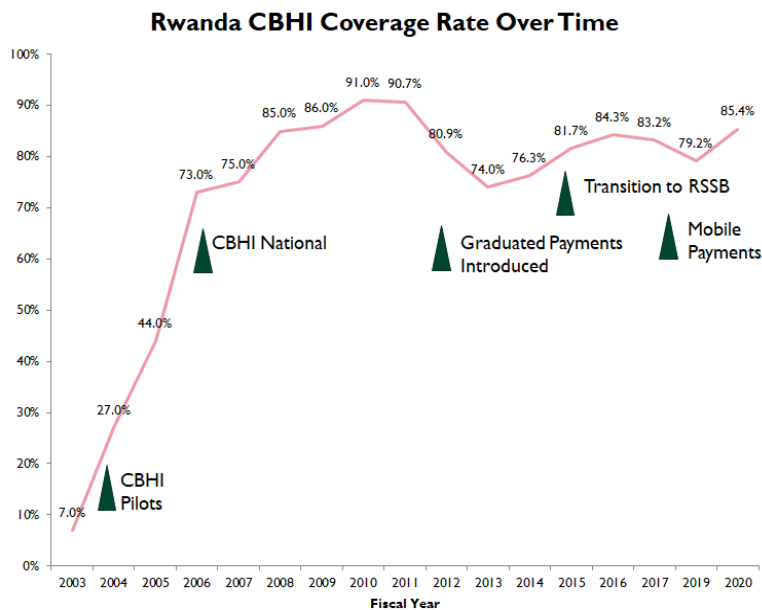
A data analysis plan was prepared for both Kenya and Rwanda and dummy tables shared with PharmAccess and the Rwanda Social Security Board (RSSB) (DFS partners in Kenya and Rwanda, respectively) so that they could extract the data from their systems. Some of the original variables were not available in electronic format, so we used what was available to highlight key program metrics such as enrollment in different programs, participant demographics (e.g., gender, age groups, income category), and service utilization rates throughout the DFS system implementation periods. This program data was analyzed using Excel. The PharmAccess team also shared data from special analyses that they had done in 2019 as part of their own internal evaluation of the i-PUSH program that focused on analyzing retention and savings rates among the program beneficiaries. These data findings are integrated below.

## DFS CASE STUDY CONTEXT

To better understand the consolidated findings from this study, this section of the study report provides background information about each of the programs that have been selected for this programmatic case study.

### COMMUNITY BASED HEALTH INSURANCE (RWANDA)

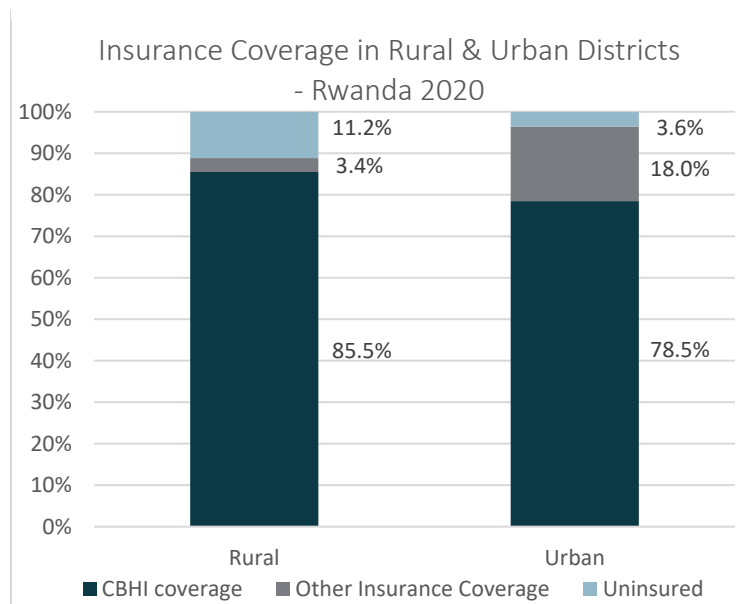
**Figure 2:** Rwanda CBHI Coverage, Other Insurance Coverage and Uninsured %



The Community-Based Health Insurance (CBHI) program (Mutuelle de Santé) was initiated in 2004 as a key intervention in moving towards universal health coverage in Rwanda. Originally established and managed by the Ministry of Health, CBHI grew very rapidly from the pilot schemes in the early 2000s to covering almost 86% of the uninsured population (nearly 9 million citizens). Management of CBHI transferred from the Ministry of Health to the Rwanda Social Security Board (RSSB) in 2015, to consolidate management and improve efficiency of the country's pension and insurance

schemes. Figure 2 highlights the evolution of the CBHI scheme's coverage along with key programmatic milestones.

**Figure 3:** Insurance coverage (CBHI, Other, Uninsured) in Rwanda (Source: RSSB)



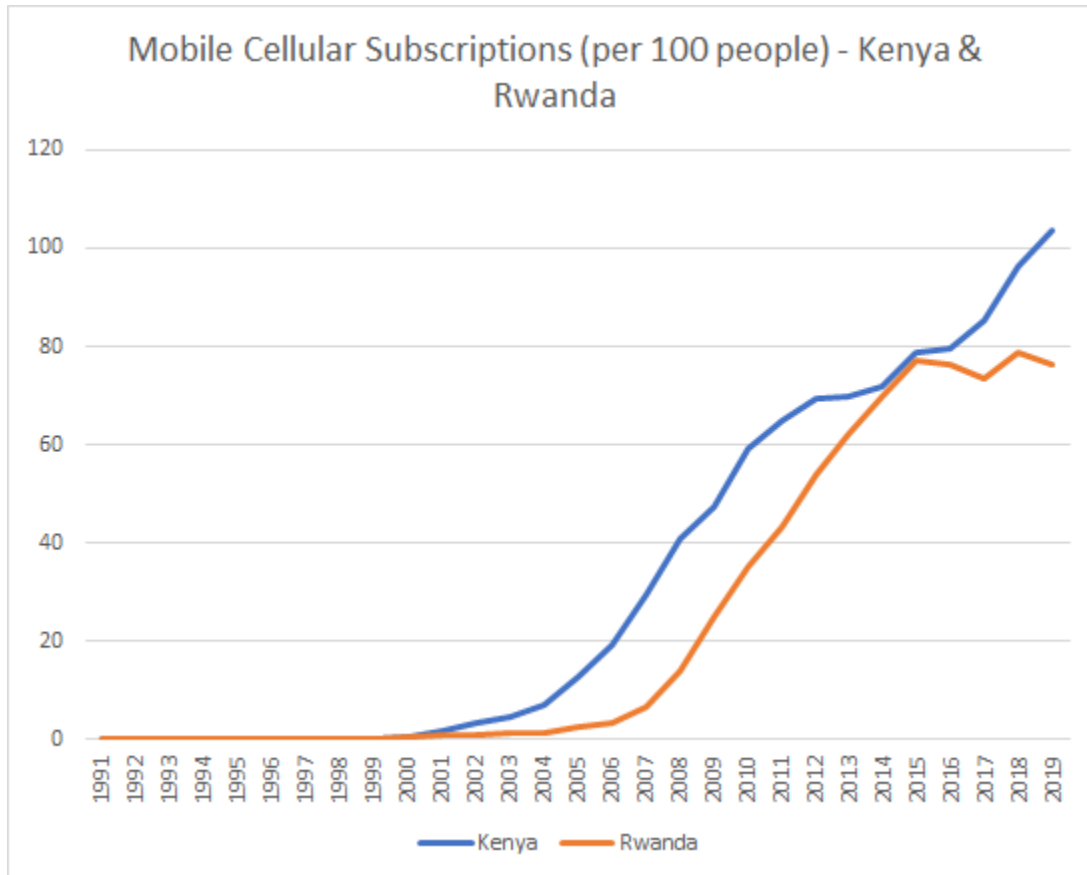
The graph on the left (Figure 3) highlights the fact that in urban districts, CBHI coverage is lower than in rural areas—largely due to the much bigger formal employment sector in urban areas that provides other health insurance for its staff (almost 18% in urban areas as opposed to just over 3% in rural areas), yet those rural areas are also where conventional financial services required to pay CBHI premiums, such as banks are least accessible.

With the increasing penetration of mobile phones in Rwanda



(see Figure 4, below<sup>11</sup>), more citizens were relying on digital payments through a variety of carriers until the Rwandan government established a public private partnership called Irembo<sup>12</sup> in 2014—to consolidate many e-government services with a vision to simplify access to these services with “zero trips, zero paper”. Mobile payments for CBHI membership were enabled in 2018 to make it easier for the population to pay their annual premiums.

**Figure 4:** Mobile Cellular Subscriptions (per 100 people) - Kenya & Rwanda (Source: World Bank)



## Summary of Health System and Programmatic Challenges

With the transition of CBHI from a highly decentralized organization with nearly 500 independently managed insurance pools to a single centralized scheme, managed by the Rwanda Social Security Board, it became very difficult to handle the high numbers of transactions for premium payments, confirmation of membership registration and health care provider reimbursements processed using paper-based systems. Membership renewal was particularly cumbersome during the peak period (June-September), because every household had to renew their subscription annually and the

<sup>11</sup> Source: <https://data.worldbank.org/indicator/IT.CEL.SETS.P2?end=2019&locations=KE-RW&start=2007&view=chart>

<sup>12</sup> The name Irembo comes from the word for gateway or door in Kinyarwanda.

end of year was the same (30 June) regardless of when the last subscription was paid in the previous year.

The following table highlights some of the key challenges faced by different stakeholders in the CBHI scheme.

Stakeholder	Health System/Programmatic Challenges Addressed
CBHI management	Very difficult to handle the high numbers of transactions for premium payments, confirmation of membership registration, and health care provider reimbursements processed using paper-based systems. In addition, the program had to contend with fraud cases by some ill-intentioned staff at the CBHI section level, because reconciliation between CBHI revenues and active members was difficult to do using paper systems.
Healthcare providers	Long delays in manually processing claims at the central level often leave providers with debts or unable to pay for staff or medical supplies. Similarly, enrollment delays limit access to health services by households during the first months of the year and were leading to inefficiencies in the facilities due to low volumes.
CBHI staff in facilities	The annual process of renewing premiums for household members became much more complex due to requirements for household means testing and graduated premiums.
CBHI members	<p>Premium payments had to be made in-person through the formal banking structure—geographic access was limited in rural areas.</p> <p>Citizens then had to return to their home health center to show their deposit slip, have their household records manually updated and validate their membership cards.</p> <p>When patients went to a health facility for care, they had to first queue up at the CBHI desk for their coverage to be manually validated in paper registers, then queue up a second time to be triaged for care.</p> <p>Local health post and telemedicine services for basic ailments were not covered.</p>

### DFS solutions implemented

As part of the technical assistance provided by USAID through the Rwanda Health Systems Strengthening Project (RHSSP) for CBHI’s transition from the MOH to RSSB, MSH and Jembi staff led an enterprise architecture roadmap workshop with RSSB and MOH staff to help identify and prioritize key business processes that would benefit from digitization. This was developed around the Joint Learning Network’s (JLN) health

insurance business process framework<sup>13</sup> with interventions prioritized around three business processes: Beneficiary Management, Premium Management, and Accounting.

This case study focuses on the system developed to support beneficiary and premium management that was called “Mutuelle Membership Management System”, namely, 3MS that started to take shape in 2012.

**Figure 5:** Screen shot of 3MS web application for registering indigents for CBHI (Source: RSSB)

Registered	Names	Household ID	ID Number	Action
	[redacted]	145234	[redacted]	Details
	[redacted]	1026307	[redacted]	Details
	[redacted]	3111367	[redacted]	Details
	[redacted]	3111358	[redacted]	Details
	[redacted]	3111365	[redacted]	Details
	[redacted]	1026306	[redacted]	Details

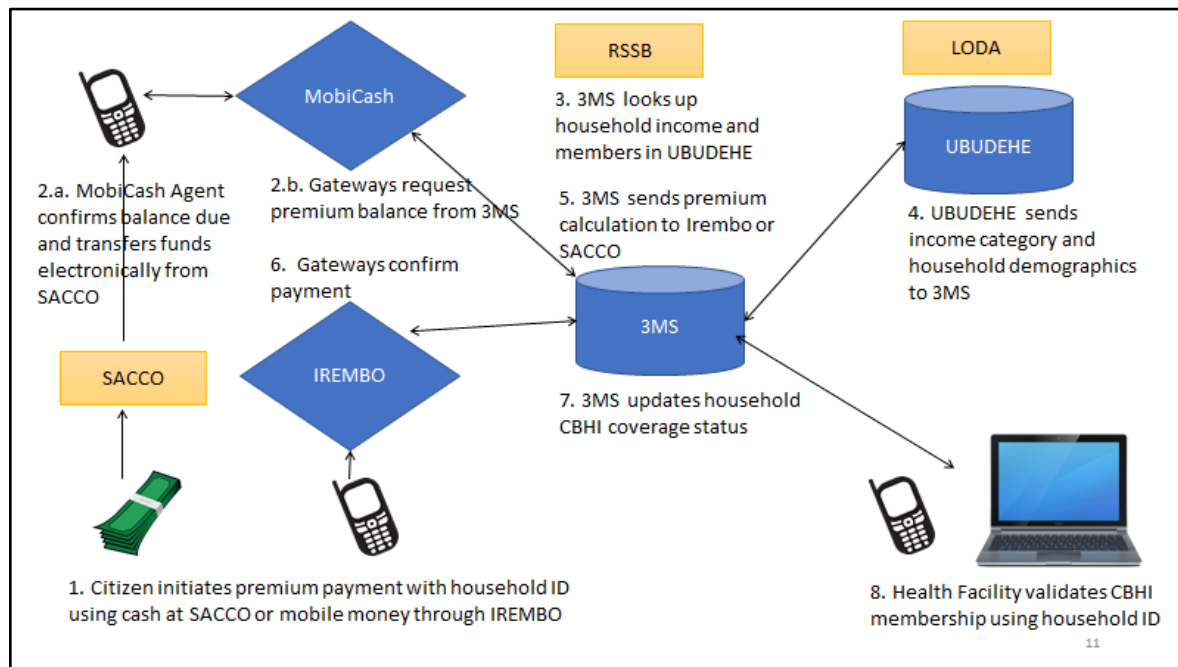
Digital health systems and DFS were integrated to improve management and access to CBHI. As illustrated by Figure 6, the systems integrated included: a centralized household income categorization database called “Ubudehe”<sup>14</sup> that was designed to support a local government-implemented household registration system managed by Local Administrative Entities Development Authority (LODA), the Mutuelle Membership Management system (3MS) that supported on-line registration and membership validation (using web or mobile phones), and the government’s official electronic services payment gateway (Irembo<sup>15</sup>) or the MobiCash payment gateway. These systems were supported by a network of local mobile carrier agents (from MobiCash, AirTel, and MTN) working with village-level Savings and Credit Cooperatives (SACCO). Figure 6 highlights the relationships between these databases and gateways—and the organizations that manage them.

<sup>13</sup> A Guide to Common Requirements for National Health Insurance Information Systems, Copyright © 2019, Joint Learning Network for Universal Health Coverage, PATH

<sup>14</sup> The name **Ubudehe** comes from the traditional Rwandan practice and cultural value of working together to solve problems.

<sup>15</sup> The name **Irembo** comes from the Kinyarwanda term for ‘gateway’ and is the government portal for digital financial services

**Figure 6:** Interoperability Schema and Key Functions Supported by 3MS (Source: MSH)

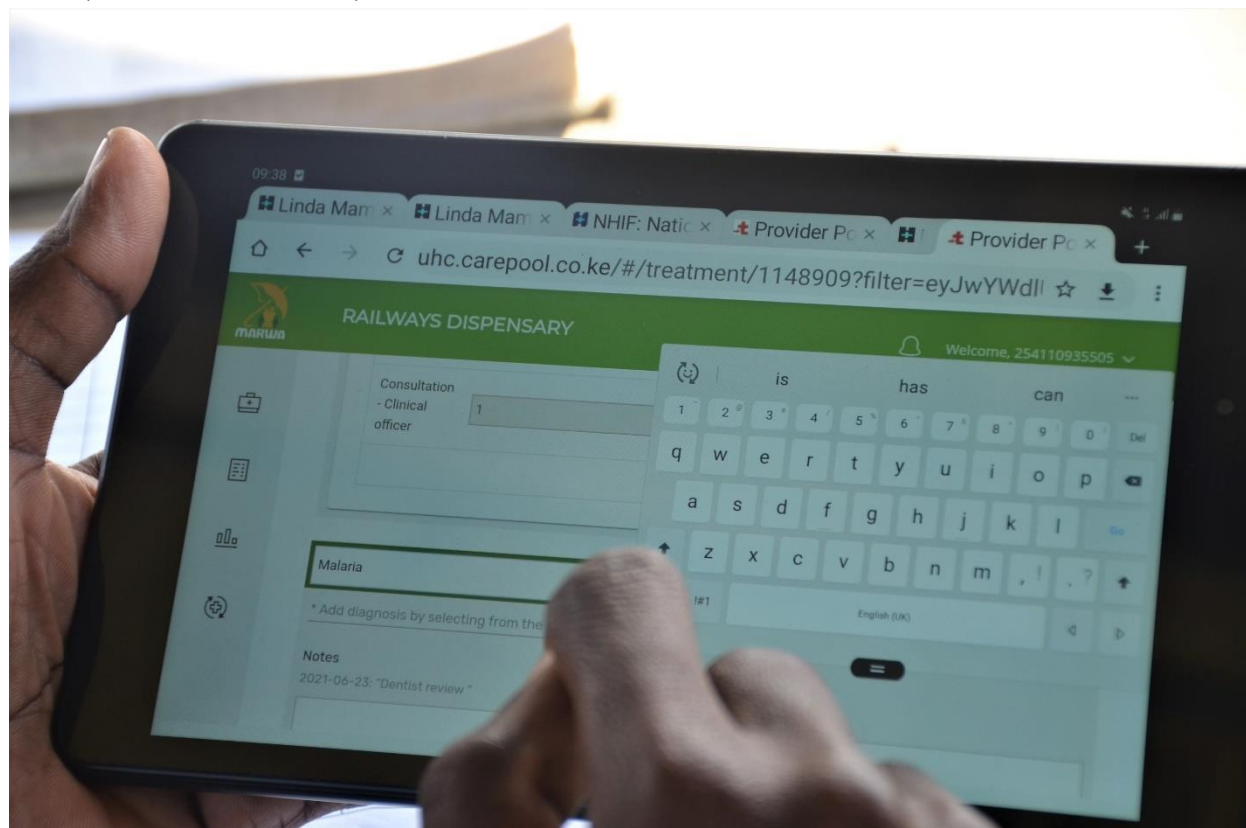


## PHARMACCESS PROGRAM IN KENYA

The PharmAccess Foundation focuses on the root causes that hamper health care financing and investments towards equitable and quality health care in sub-Saharan Africa. PharmAccess, in partnership with Safaricom and IT company CarePay, developed a “health wallet” on a mobile phone. Launched in Kenya in 2016 as M-TIBA (for mobile treatment), this digital platform connects payers, providers, and users in real-time. It allows for identification of users, claims submission by providers, claims handling, and provider payment by payers, in addition to providing a “health wallet” that enables people to pay for healthcare services using an innovative blend of insurance and saving options. In support of Kenya’s movement to UHC, PharmAccess with CarePay are leveraging the M-TIBA mobile wallet to enable multiple payers to pay for UHC, including contributions from the individual.

The Innovative Partnership for Universal Sustainable Healthcare (i-PUSH) initiative uses mobile technology to connect low-income women of reproductive age (WRA) and their families to health insurance and better-quality care in Kenya. Figure 7 is a screenshot of the M-TIBA Android application used by health facilities to report patients treated. Community health workers (CHWs) also use this application to enroll low-income women and their families on a National Hospital Insurance Fund (NHIF) cover, educate women on healthcare related issues, and collect healthcare data. Behavioral science approaches are integrated to encourage ongoing uptake and co-payments. I-PUSH, running in two counties in Kenya, acts as a testing opportunity to understand how these innovations can contribute to expanding health insurance coverage.

**Figure 7:** Staff from a clinic participating in the i-PUSH program entering service utilization data using a tablet (Source: PharmAccess)

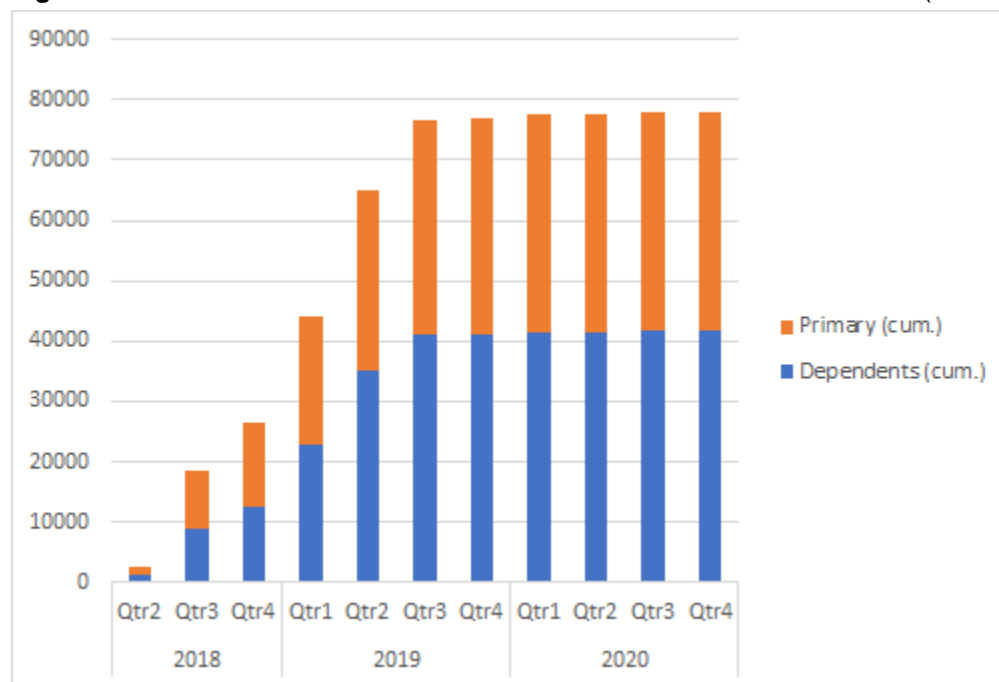


Founded in 2009 by PharmAccess, Medical Credit Fund (MCF) helps health-related small and medium-sized enterprises (SME) in Sub-Saharan Africa to access much needed finance, support growth and improve the quality of care they deliver. In 2017, MCF together with CarePay, launched Cash Advance, a digital solution specifically designed for health SMEs in Kenya. Cash Advance is a loan product with terms up to six months that provides SMEs access to cash through their phones. It is fully mobile, with a short processing time, and does not require traditional collateral. Repayment is automatic on a daily basis and based on a percentage of the SME's digital revenues. In 2018, MCF expanded Cash Advance to a product called Mobile Asset Finance (MAF), based on the same principles and technology, but designed for medical equipment purchases.

On the provider side, PharmAccess also introduced the SafeCare program to help drive quality improvement in the facilities that participate in i-PUSH and the MCF CA/MAF programs. This is based on a set of internationally accredited clinical quality standards. SafeCare digital is a product that uses the standards to help providers plan, execute and benchmark their quality improvement plans.

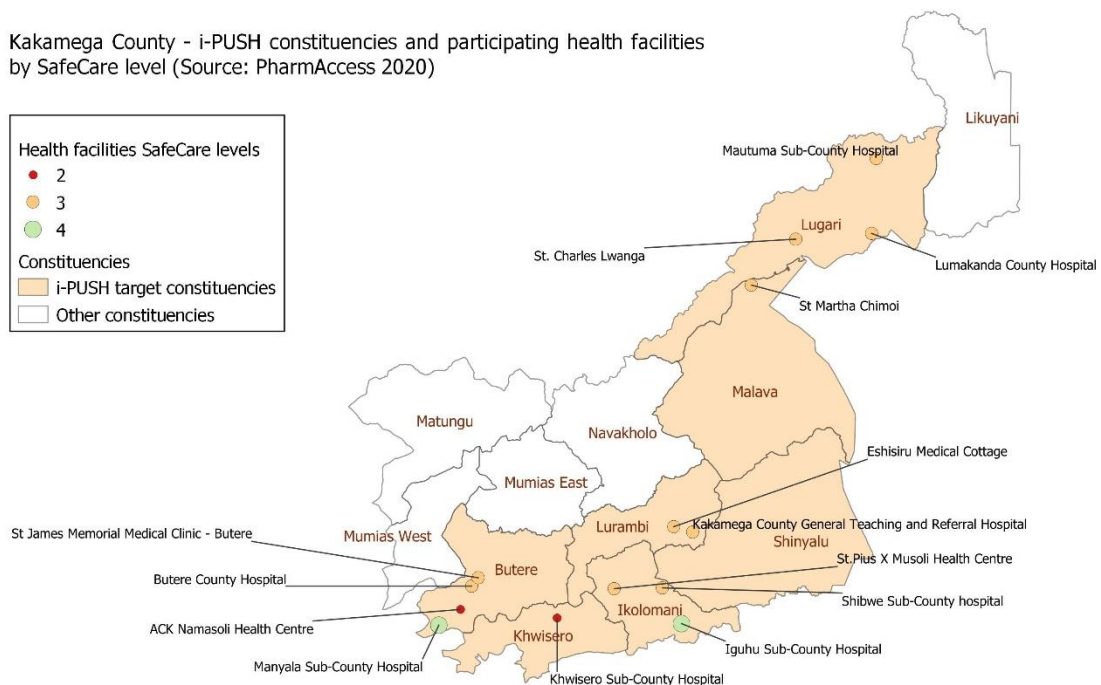
This pilot project worked in two areas in Kenya—informal settlement areas in Nairobi and selected sub-counties of rural Kakamega County, a county that had been selected because of high levels of poverty. The graph below (Figure 8) shows how quickly the program was able to recruit participants—most of them over the course of just over one year.

**Figure 8:** Cumulative Recruitment curve for i-PUSH beneficiaries 2018-2020 (Source: i-PUSH)



The map below shows the participating facilities in the sub-counties that were selected for the program in rural Kakamega County. The colored dots represent the level of quality that the facilities achieved based upon the digital SafeCare quality assessment tool.

**Figure 9:** Map of Health Facilities Participating in SafeCare Program in Kakamega County, Kenya (Source: SafeCare)



## Summary of Health System and Programmatic Challenges

The Kenyan DFS programs were implemented to resolve some of the following health system-related and programmatic challenges:

**Table 2:** Challenges to be addressed by Kenyan DFS programs

Program	Health System/Programmatic Challenges Addressed
M-TIBA	Coverage of health insurance low, families unprepared for high out of pocket expenses for unplanned healthcare expenditures. M-TIBA introduced a health wallet to save for healthcare expenses using their mobile phones, as well as a platform for moving money and data among clients, providers, and payers.
i-PUSH	Poor women of reproductive age are often uninsured—the program used the M-TIBA mobile platform to enroll them in the NHIF with subsidized premiums (100% for year 1 and 50% for year 2), connect them with CHWs to educate them on healthcare (with LEAP <sup>16</sup> ) and collect healthcare data (with m-Jali <sup>17</sup> ).
CA	Access to financing for operational costs from traditional banks is very difficult and interest rates are high. Cash Advance (CA) provides health related SMEs with access to unsecured loan financing, support growth and improve quality of care. CA uses CarePay’s technology platform to disperse loans and manage automatic repayment.
MAF	Access to financing from traditional banks for capital expenses such as medical equipment is very difficult. Provide health-related SMEs with access to finance through secured loans for medical equipment purchases (equipment is collateral). Uses the same CarePay technology as CA.

### DFS solutions implemented

CarePay was first established in Kenya with an initial investment from the M-PESA Foundation (funded by M-PESA, a widely used mobile payment system launched by Safaricom/Vodafone) and the Investment Funds for Health in Africa (IFHA). Capitalizing on the mobile (money) revolution in Africa, CarePay partnered with PharmAccess Foundation and Kenyan telco Safaricom to develop a smart payment distribution platform branded as M-TIBA.<sup>18</sup> Unlike in Rwanda where the government led the establishment of the Irembo platform, in Kenya the private sector M-TIBA has become

<sup>16</sup> LEAP is aimed at building capacity among Community Health Workers (CHWs) using mobile phones. Through mobile learning or m-learning, CHWs are trained on topics such as family planning, mother and child nutrition, and sexual and gender-based violence. LEAP is also used to train CHWs in m-Tiba and healthcare financing, thereby stimulating the community to save for healthcare and to utilize healthcare services

<sup>17</sup> m-Jali is an innovative mobile application used to capture data on household level on health indicators to improve efficiency of health reporting at the community level. Timely, accurate, and complete data enables decision-making and appropriate action, which leads to improved health indicators.

the preferred health payment platform for the government, retail and private health sector—connecting over 4 million users and 1,200 healthcare providers to the platform.

**Figure 10:** CarePay's M-TIBA platform helps to digitally link Payers, Providers and Patients



CarePay's M-TIBA platform (Figure 10) allows participants, payers, and healthcare providers to send, receive, and pay healthcare funds to each other quickly and at minimal cost. Participants can use it to pay their insurance premium or save money to help cover future healthcare needs. Healthcare providers (clinics and hospitals) and payers (donors, public, and private insurers) are also connected to the same platform. When someone needs treatment, this person dials into the M-TIBA platform with a mobile phone, selects the appropriate health scheme and location and thereby initiates the process. The healthcare provider then proceeds with diagnosis and treatment and finally submits the claim. If the patient is covered by insurance or via a donor, the clinic digitally sends the information to the payer, who reviews the information and authorizes payment—again, all through M-TIBA.

**i-PUSH:** The **i-PUSH** program was a pilot program growing out of a collaboration between PharmAccess and AMREF that focused on serving poor women of



reproductive age by helping them save for health insurance coverage through the NHIF, and connecting them to community health workers for health education and data collection. It does so by marrying “three existing mobile innovations that each of the organizations have developed and implemented: M-TIBA, LEAP, and m-Jali.”<sup>19</sup>

**MCF (Medical Credit Fund):** The first phase of MCF (MCF 1) was designed as a partner lending program for the past 10 years. It encouraged local African banks to lend money to private health small and medium size enterprises (SME) by co-funding loans. It does not lend to public health facilities since they are generally not allowed by government to take out loans, but private providers, on the other hand, are increasing in number. Since private insurance coverage in Kenya is very low (only about 5%), there is a large population still using private facilities on a fee for service basis—and typically paying with mobile money.

Since about 2016, PharmAccess designed the Cash Advance (CA) direct lending product leveraging the CarePay platform to enable health facilities to apply for loans through the Medical Credit Fund (MCF), receive funds that are reimbursed by performing a revenue split on all patient transactions: 33% comes out as loan installment payment 66% goes to the clinic. The average loan amount is \$5,000 and usually covers operational costs, such as salaries and suppliers. There is no fixed installment at the end of each week month and these unsecured loans are provided without collateral. Most of these loans are repaid within 2-3 months. An added side benefit of this program is that participating facilities agree to report service utilization and financial data MCF has access to a rich source of de-identified data that they can use to track service utilization rates and monitor financial performance of the facilities they support.

Because of the automatic revenue split through the facility’s health wallet, the rate of non-performing loans was at a low 3% before COVID. When the COVID pandemic took hold, the rate went up to 10% but has been trending down again and was around 6% in May 2021.

The Medical Credit Fund is now moving to a second phase (MCF 2) that is more focused on direct lending and digital lending. It bypasses the local banks, because local bank loan initiation procedures were duplicative—credit histories checked by two parties, loan instruments drawn up with two parties, payments split, etc.—and banks did not share MCF’s social investment agenda. Capital for MCF 2 comes from social investors including the UK’s Department for International Development (DFID) and the Bill and Melinda Gates Foundation (BMGF). The scheme borrows money from the investors to fund loans, then pays them a return when the loans are repaid. Grant funding from the Dutch government’s Ministry of Foreign Affairs covers part of the operating costs for the program.

**MAF (Mobile Asset Financing):** This is an extension of MCF’s loan products for health

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<sup>19</sup> m-Tiba is a digital platform for inclusive healthcare that directly connects patients, providers, and payers such as family members, health insurers or donor agencies. It enables people to save, send, receive, and pay money for medical treatment through a mobile health wallet on their phone in a closed loop with conditional funds that can only be spent on healthcare at selected providers. Since it was introduced in Nairobi last summer, more than 300,000 people have already signed up.

providers that provides secured loans for buying medical equipment up to \$30,000. In this case, the purchase equipment is used as collateral. Unlike many bank loans that typically require a wide range of collateral as security (e.g., other property, bank accounts), only the equipment is held as collateral. This makes loan processing simpler, and all transactions are managed using the same CarePay platform.

## KEY FINDINGS

The case study findings are described below under each of the key research questions. They are also grouped by those findings that come from either or both of the programmatic case studies.

### WHAT WAS THE EXPERIENCE IN IMPLEMENTING THE PROGRAM? (PROGRAM INTERVIEWS)

#### Facilitators of Successful Implementation

Respondents from both countries highlighted a variety of common factors that contributed to successful implementation. These included:

- Existing mobile/internet network infrastructure and mobile money network operators.
- High mobile phone coverage/connectivity and penetration across all target clients. *“Connectivity is crucial in the entire ecosystem—from the app that the agents use, data being transmitted to the NHIF, data moving from the providers, Telco for mobile money, or just a bank that is able to offer their services enable payments to be facilitated or done” – PharmAccess program respondent*
- Population open to and using mobile money for financial transactions—both at the individual and business level (healthcare providers).
- Initiatives to bring together multidisciplinary teams of stakeholders (technology, policy/government administration, health, finance) from public, private, and NGO sectors and building trust between stakeholders (a crucial but sometimes a slow process).
- Existence of strong technology teams and secure, reliable infrastructure.
- Openness to data sharing and interoperability between independently managed systems enabled automatic, real-time verification using national ID numbers to ensure the correctness of data and secure electronic financial transactions. This was especially the case in Rwanda, where CBHI relied on the Ubudehe household income classification database.
- Establishment of digital financing schemes built on top of a pre-established ecosystem of health programs that were already functioning (e.g., CBHI in Rwanda; NHIF and CHV/CHW program in Kenya).
- Existence of community systems that work. Having a direct link to households through CHVs and CHWs in Kenya leveraged what already existed—especially in Kakamega where mothers feared going to hospitals but trusted local health workers from their own community. In Rwanda, the network of district- and community-based Irembo and mobile money agents in remote areas helped less digitally literate citizens complete their transactions and overcome the digital divide.

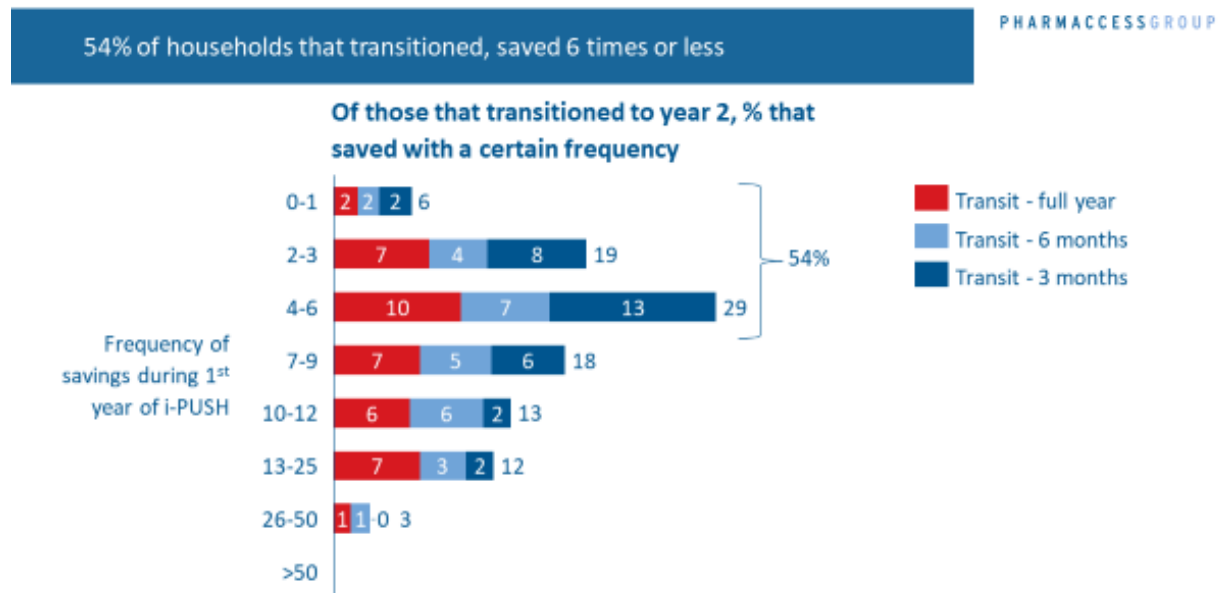
In Rwanda, respondents noted that the government’s policy/vision on digital transformation for government financial services, with the motto “zero paper, zero trips”, drove the change with strong political support. CBHI is a very high-profile program that touches over 80% of population and it needs strong controls that are not possible with paper systems alone. In addition to covering annual CBHI financial deficits, the fact that the government “paid the premiums for more than 15% of the population classified as the most vulnerable helped boost CBHI revenues and improved access to health care

for this hard-to-reach segment of the population,” a senior CBHI program manager noted.

In Kenya, the DFS innovations were driven more by NGO’s (PharmAccess and AMREF) with social enterprise missions who effectively engaged public and private sector stakeholders. This was coupled with the fact that Nairobi has robust human resources for ICT; respondents cited this as providing an advantage in that the system was “*built for Kenyans by Kenyans*” who understand the context, the market, and their customer needs. Others cited the availability of an in-country 24-hour call center to support beneficiaries should they encounter issues with the system.

A 2019 evaluation conducted by PharmAccess looked at factors that led i-PUSH participants who enrolled in the first year to continue payments to transition into year 2. They found that over half of those who transitioned (54%) had saved six times or fewer and those who contributed at least monthly represented only 28% of the program beneficiaries (see Figure 11). This suggests that “saving every month is not necessary but saving across multiple (at least 3 different) months increases chances for successful transition.”<sup>20</sup> The same study also found that 50% of those who started saving from the first day they enrolled in the program transitioned into the next year, so saving early and frequently is a key to success.

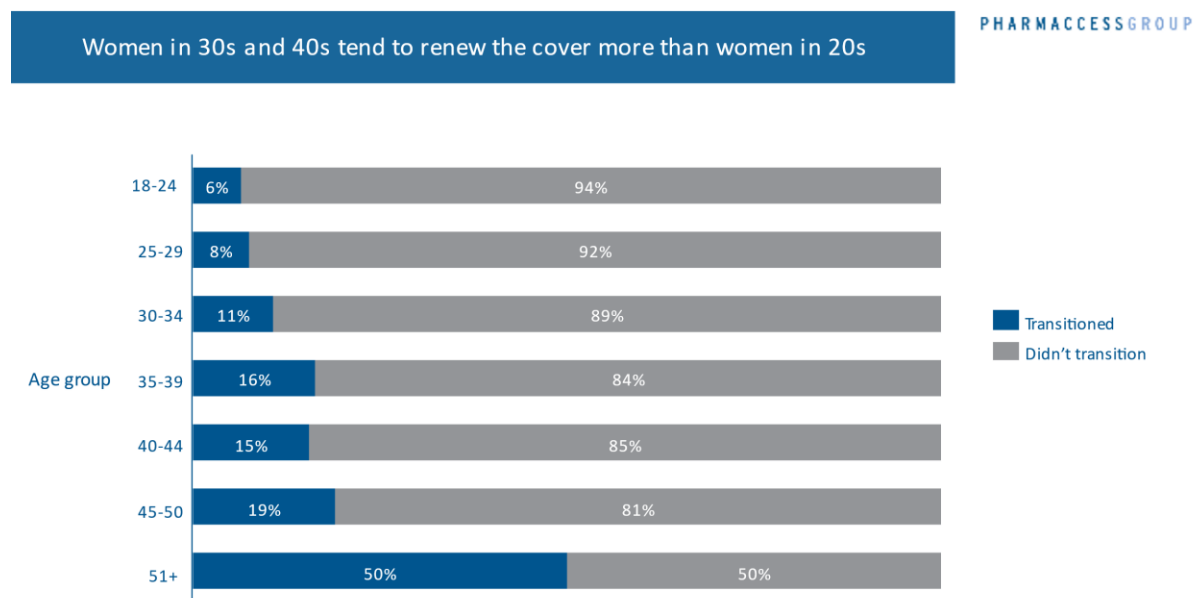
**Figure 11:** % of i-PUSH participants who transitioned to year 2 by frequency of savings (Source: PharmAccess)



Other factors that appeared to favor continued savings and transition into the second year of the program were households with a spouse registered to be covered (19% transitioned vs 8% with a spouse) and age of the woman who was the primary beneficiary—that showed a strong association between age and retention in the program (see Figure 12). However, this latter association may be because beneficiaries in the older age group consider themselves at higher risk of becoming ill and therefore understand better the benefits of insurance.

<sup>20</sup> PharmAccess presentation: “i-PUSH transitions from Y1 to Y2”, 9/9/2019

**Figure 12:** % of women who saved enough to transition into year 2 of the i-PUSH program by age group (Source: PharmAccess)



## Barriers to Successful Implementation

On the flip side, both programs encountered challenges that required mitigation. Key among these were:

- Internet availability is unreliable in some peripheral areas, especially in government hospitals in Kenya.
- Technical issues for software development/hosting
  - Need for interoperability between systems managed by different stakeholders (government: national IDs & household/birth registration, insurers: NHIF and CBHI enrollment systems, mobile operators: gateways for financial transactions). Some systems did not have APIs, data sharing agreements took a long time to arrange, interfaces needed to be updated as systems changed, and not all insurance schemes were digitized—so program managers could not see overlaps in coverage.
  - Some of the connected systems were hosted on old infrastructure. Infrastructure needs to be very good across all platforms, because breakdowns and system downtimes caused by the weakest link can have a significant effect on the whole system. Sometimes these resulted in clients seeing inaccurate balances in their loans or gaps in coverage for family members.
- Clients and community level agents with low levels of digital literacy made it a challenge to access some of the DFS services and learn how to perform required tasks using smartphones.
- Resistance to change from some users more familiar with paper-based systems posed challenges in shifting to a digital model.
- Data quality issues had to be addressed at source—quality of images (client photos, images of certificates) and incomplete data were just two of the issues highlighted.

Both countries also faced a precarious financial situation in many households targeted by these DFS initiatives—a situation that was amplified because of COVID-19—and competing priorities for their limited budgets. *“Do I buy food? Do I pay premium? Do I pay school fees?” –I-PUSH program respondent*

When the Rwanda 3MS development was started, there was no interoperable payment gateway available for government programs until late in the process. Spotty internet connectivity at some of the health facilities led RSSB staff down an unsuccessful path of trying to develop an offline version that failed (due in part to the need to look-up key data from linked online databases in real-time). The solution was to invest more in connectivity instead.

Health facility staff in Rwanda also reported little onboarding and no training on the system when 3MS was introduced—many of the cascaded orientation sessions focused on policy changes to the CBHI scheme rather than applied practice with the software. Some respondents indicated that the explanation was adequate, and the system was easy enough to use, while others struggled and would have preferred more onboarding.

In Kenya, issues arose with the quality of smartphones and computers used by agents that sometimes resulted in poor quality images. Engaging some stakeholders also proved challenging. Initially some of the private facilities were reluctant to participate in NHIF as it was a government scheme, which can move slowly, and when working with government institutions, it took time to get them to actually trust the system and the program.

Other respondents pointed to programmatic inconsistencies or inefficiencies between i-PUSH and NHIF. For example, payments for outpatient services are based on capitation while inpatient care is covered directly by NHIF through fee-for-service and there were frequent delays in payment: *“Despite giving all the [outpatient related] information to the NHIF through the system instantly, they would pay the facility even 3 or 4 months after the date of the invoice, At times, even 6 months”.* – *i-PUSH facility respondent*. In the same vein, some questioned the sustainability of the i-PUSH enrollment model that covered 100% of the premium for year one, then expected poor households to contribute [50%] to the premium in year 2 and fully pay in later years. Based on analysis of secondary data from i-PUSH, only 12% of participants paid their premium for the second year in order to remain in the program, prompting some to ask how to retain participants in the NHIF for the long term.

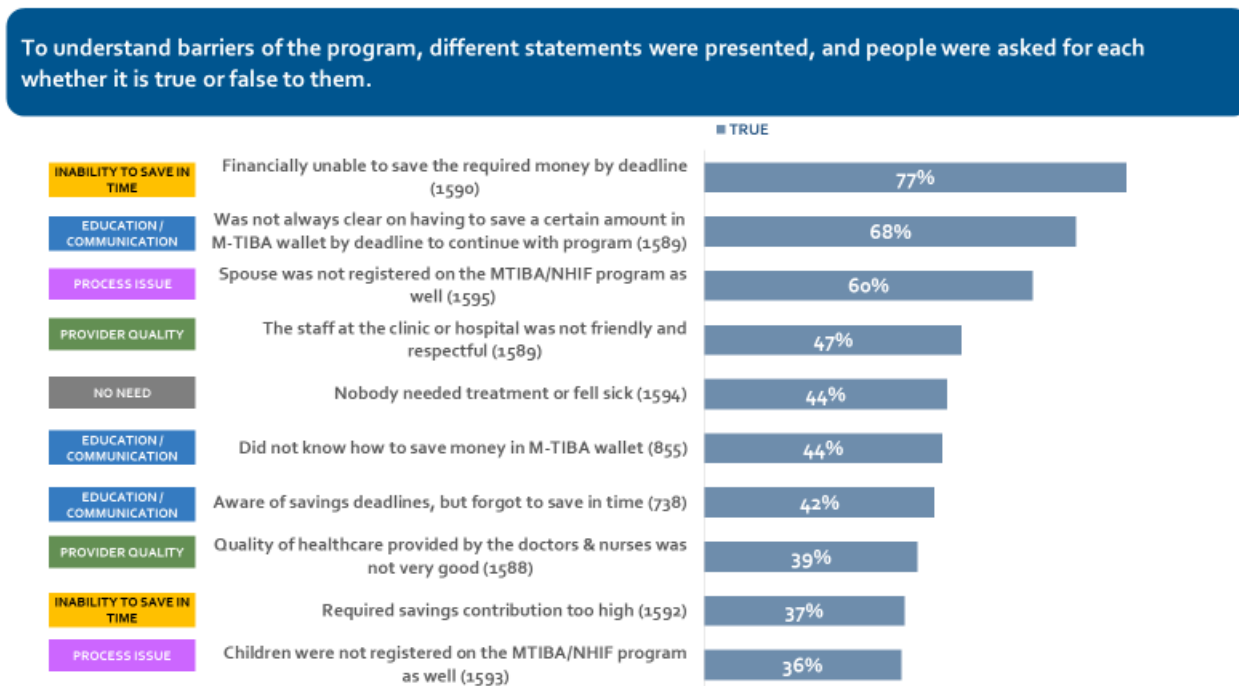
Unlike in Rwanda, where all public health facilities and a growing number of private providers provide services that are covered by insurance, in Kenya’s geographically targeted i-PUSH program, access to participating facilities was limited to those facilities specifically credentialed to receive capitation from NHIF—especially at the beginning of the program when healthcare providers were first being engaged in the program. This meant that some households had to go far for care.

i-PUSH clients also reported challenges with enrollment due to the documentation requirements. In particular, clients were unable to gain the full benefit of the program by including their families, either because they lacked marriage certificates or ID cards to register or identify their husbands, or because births for their children had not been

officially registered and they lacked birth certificates.

During a survey of i-PUSH program beneficiaries conducted in 2019, they were asked to identify issues that they felt were barriers for their participation in program. The top 10 barriers are listed in Figure 13. The most frequently cited issues were inability to save in time (77%); lack of clarity about savings requirements (68%), or process issues, such as difficulty registering spouse in program (60%). Provider quality-related issues, such as unfriendly/not respectful staff and doctors and nurses not providing good quality care also made it into the top 10.

**Figure 13:** Top 10 Barriers to participation in the i-PUSH DFS program 2019 (Source: PharmAccess)



For the MCF CA/MAF programs, just as traditional banks had been cautious about lending to private healthcare small and medium enterprises (SMEs), *“health facility leadership were careful, they were wary, they were even fearful that you want to tap into the M-PESA events, virtual accounts.”* – MCF program respondent

### Program Adaptations

Program managers from both countries noted that online platforms enabled the programs to be more agile and quickly implement policy changes (e.g., changing insurance coverage wait times, increasing loan limits), tweaking the system to make incremental changes and improvements to improve the user interface/fix bugs or introduce new features requested by clients. For example, i-PUSH *“had to flip the workflow for the registration process—the consent for the member was being done at the end of the registration and the member had to consent into that through the phone. So initially, we had a number of people who had been registered but then did not consent. So, you have these people hanging in the system, who did not transition to the program. But then the process was changed so that the consent comes before the registration is done.”* –i-PUSH PharmAccess program respondent.

Others highlighted the fact that the Telcos are also innovating constantly, so the DFS platforms must evolve and adapt to their innovations. *“At one point, it is so easy to integrate, but the Telcos started [also] looking at doing their own financing. Therefore, that poses a threat to us. And if they going to do their own financing, it means the old bank account we were keeping [our transactions] has been changed with a new [one, with] more features. Features that are not integrated with our system.”* – MCF program respondent

In Rwanda, after having built bespoke interfaces with individual connected systems - and as the number of mobile money gateways increased—RSSB has had to completely redesign the interoperability features of 3MS and is planning to simplify integration with banks and mobile operators with a standard API that will enable people to pay from any platform.

At the same time, a major RSSB enterprise-wide modernization/automation project is now underway. With the success of DFS for premium payments, 3MS functions will be incorporated into the overall enterprise architecture, making the system obsolete after less than 5 years. This will also enable CBHI to link DFS to claims processing/provider payment systems—currently done manually with bank transfers.

In Kenya’s MCF, the close collaboration and regular contact between the PharmAccess agents and the facilities made *“the process [of adapting the M-TIBA platform and loan offerings] easy. First of all, being out in the market, [hearing] what the client says, because you don’t want to implement changes in your boardrooms, [when] you’ve not had a feedback from customers so that you can see if there is a need there.”* – MCF program staff

## Pandemic-Related Changes

The COVID-19 pandemic resulted in challenges and opportunities for the DFS programs in both countries. In general, when it came to savings and paying insurance premiums, people had more difficulty paying because of loss of revenue, and job losses hit hardest in the poorer communities.

In more positive ways, both governments wanted more payments to be electronic to reduce the risk of transmitting the virus with cash transactions. This encouraged more citizens to adopt digital financial services. In spite of loss of income brought about by the pandemic, respondents indicated that people were motivated to enroll in CBHI because they perceived a greater likelihood they might get sick.

Rwandan CBHI program managers felt that the DFS system contributed to resilience during COVID-19, as payments could be made from home during lockdown, unlike through traditional channels that handled cash payments (and had shorter work hours and not as geographically accessible). Because of the virtual re-enrollment process, there was no longer a need to return to a member’s home or CBHI health facility to re-enroll, reducing the risk of exposure to COVID-19 patients.

In Kenya, the i-PUSH enrollment work is very focused at the community level—going door-to-door at the household level—but where there were surges in infections, work



tended to stop. The program also became more expensive. Due to social distancing, requirements and the need to provide PPEs to staff and community volunteers, trainings had to be done in smaller groups of 15 or less—so the program had to double the number of classes that they had planned for. One MCF program manager noted *“fear by patients who shy away from visiting hospitals because it was feared that they can contract the COVID virus at the hospitals. So, people with any ailments or patients with even chronic illnesses feared even going to the hospitals. And in fact, our records, our statistics, show that there was a big [drop] in terms of the hospital visits. This resulted in lower revenues and challenges reimbursing MAF/CA loans in a timely manner.”*

Similarly, MCF program staff noted that *“when movement is restricted, then it means our foot soldiers, [the PharmAccess staff supporting the digital loan programs], cannot continue conducting business of signing up new clients. So, there was a direct impact on that.”* It was noted that MCF loan agents adapted by doing more virtually with phone calls.

However, businesses like hospitals turned more to MCF’s MAF to cover losses in revenue and purchased specialized equipment required to treat COVID-19 patient (e.g., ventilators)—new demands that were easily satisfied by MAF.

## HOW WAS THE PROGRAM PERCEIVED TO INFLUENCE HEALTH SYSTEMS PERFORMANCE?

Respondents from both countries perceived that the DFS for health programs contributed to improved health system performance, including aspects of data quality and use, and improved quality of care, responsiveness, and efficiency. The DFS initiatives also supported national e-government initiatives to move from manual to automated management for greater efficiency, transparency, and control.

### Data Quality and Use

In different ways, all programs contributed to enabling different stakeholders to use data more effectively for evidence-based decision making. *“M-TIBA app allows the hospital to treat me, then you have a link between the data, the registration data, and what has been done in the hospital; of the process, you have the utilization reports being done through the dashboards and through the platform that the hospitals have. So, you have all these things linked together, it really is an efficient way of managing the insurance and even healthcare services.”* – NHIF program manager respondent. Similarly, 3MS provided more accurate, disaggregated, and timely data on premium revenues and membership campaign coverage than earlier aggregate reporting tools.

Both systems contributed to a heightened awareness of the importance of data quality and have taken initiatives, such as linking to national ID databases to validate National ID numbers and retrieve correct identification data and implementing artificial intelligence image recognition controls in mobile apps to ensure that appropriate documents are being uploaded during the registration process. Program managers noted that data quality assurance is a continuous concern. Effective multi-sectoral coordination is needed between different ministries who manage health services financial technology (FINTECH) and civil registration to set up data sharing agreements, and these initiatives helped to establish these relationships.

Both schemes promoted use of data by clients as well as providers. Respondents perceived that the availability of information through mobile phone interfaces enabled citizens and health facility managers to be more engaged in the process, including for checking status of coverage, making payments, knowing exactly how much to pay, and confirming household members covered in real-time. For example, the M-TIBA developers “developed [the] system with all accredited healthcare providers. Hospitals [are] able to see the data (it is secured; only authorized persons can access; only for viewing) and talk with healthcare providers; employers making payments for their employees [use the same] digital platform for making the payment. Members are able to see their data on their phones. So, if you use an NHIF app, you can see what contributions you've made, who are the beneficiaries, which hospitals are available, and services have been approved’. – NHIF program manager.

## Efficiency and Financial Considerations

The DFS for health programs supported national eGovernment initiatives to move from manual to automated management with the potential for greater efficiency and transparency. Some respondents observed that digital systems made it possible to quickly implement changes to the services based on new laws or client-proposed features, making systems more responsive and adaptable. They also noted that citizens have more trust in financial transactions placed through the private sector DFS ecosystem. There was no intermediary (e.g., insurance agent or bank) and there was a perception that there was less chance of fraud. Third party payments on behalf of households that are common in Rwanda’s CBHI—such as better off relatives in urban areas paying the CBHI premiums for unemployed family members in rural areas, or small businesses paying the premiums for families of their day laborers—were sure to be used for intended purpose.

The programs also contributed to potential cost efficiencies. In Rwanda, fewer staff were required in facilities after the introduction of 3MS since no more cash financial transactions were managed at the facility level and there was much less labor-intensive work managing paper household record systems. While new posts were created at district CBHI sections and the national level to manage a heavier upstream workload, and there were costs associated with orienting staff to the new technologies, the net result was reported to be cost savings. The system also enabled some new types of facilities with no CBHI staff (e.g., health posts, telemedicine providers) to check eligibility before providing services. Digital membership verification was much more efficient with a simple SMS message. Now cards are only issued to new members and under 16 years of age (who do not yet have National IDs). Even local government authorities responsible for annual mobilization and certifying household Ubudehe category had an easier job, and had access to more accurate data on coverage for tracking their own progress.

The CBHI scheme was also more efficient, as under the old system SACCOs were collecting money and supposed to transfer funds at the end of the month, and sometimes there were substantial delays (and SACCOs maintained these funds to give loans to their members and earn additional revenues). Now money is transferred immediately. One CBHI manager estimated that “at the end of the year the amount of

*interest generated by getting the funds into the CBHI pool quickly is bigger than the commissions that are paid to SACCOs and mobile money agents for the transactions.”*

In Kenya, the ease of accessing financial information was praised by i-PUSH facilities, which allows facilities to avoid stock-outs and fraud more easily. Increased enrollment in NHIF through the i-PUSH program also provided facilities with a more reliable source of funding and reduced the number of clients seeking to access services with waivers.

Facilities praised the ease of using the MCF systems, especially digital Cash Advance. The ease and speed of the process helped to ensure that SMEs could not only access financial resources, but could also do so when they needed it, making the service much more responsive and improving their ability to provide services to clients. *“I'd say it's a rescuer. I would say that this case is like they pop in when you really need them.” – MCF client facility.*

## Quality of Care

A CBHI program manager noted, we *“don't expect that we will be able to show measurable change in quality of care [through this qualitative study], but clients receive better service—less time waiting in queues, and immediate triage for life saving care”.*

The mobile phone applications that supported M-TIBA and 3MS enabled citizens to be more engaged with the program. Using a simple mobile feature phone, they could send an SMS to the 3MS system to check status of coverage, make payments, know how much to pay, and confirm household members covered in real-time. Clients of CBHI expressed that service had improved, as prior to the use of digital payments there was a one-month delay between paying for the CBHI cover and accessing services. When paying digitally, the client gains access immediately.

In Kenya, the digital financing services were accompanied by a lot of effort to make sure facilities were working toward quality improvement. The SafeCare program played a role in this, by conducting regular quality assessments in hospitals and linking them to resources through MCF CA/MAF to help make improvements. *“By offering people a choice of facilities [through NHIF], people had a chance to vote with their feet. [We] saw a significant change as they were implementing, found that as facilities started to put together some structures and conduct quality improvement, some people chose to move to another facility because they are hearing good things about the quality of service”.* – I-PUSH program manager

With more funding available for operational costs and equipment, the MCF program enabled facilities to serve their patients better by not having to turn them away due to drug stock-outs or unavailability of certain types of lab tests: *“For the working capital we found quite a bit of impact on the patient side, decide now if you're going to take working capital to the hospital to acquire or purchase drugs, it is efficiently working. They don't have to be turned away because the drugs are missing. Why? Because the hospital is able to access working capital and cash advance to restock their shelves and then there is better service to the patients.”* – MCF program manager.

Additionally, patient registration/eligibility checking goes more smoothly since verification is done in real time by phone or computer. In Rwanda, this responsibility was transferred from dedicated staff hired by CBHI in each facility to frontline health workers who checked this during triage without patients having to pass through a separate insurance queue as in the past. Many respondents indicated that the introduction of the digital systems has made paying for and accessing health services quicker. *“When you get to the hospital, you don’t need to queue; you just use your mobile phone to activate your account, bring out your name and you are quickly attended to”.* – I-PUSH participant

Similarly, health facility managers noticed that when people had a choice of providers and they preferred a particular facility, then that facility had more patients or more clients. In that case, because of having increased income, they were able to also increase the scope of services creating a virtuous cycle. *“We’ve seen facilities who had earlier no laboratory services, but they were able to generate more income and be able to increase the services by opening labs in their facility”.* – I-PUSH NHIF program manager

Both sets of programs accrue other side benefits for the participating healthcare providers. The record keeping and data reporting responsibilities oblige them to put in place better accounting/bookkeeping practices and generally improve their administrative management in the running and implementation of this program. Program staff also train the hospital staff in these areas to strengthen the hospital’s management capacity. *“We signed the memorandum of understanding with those hospitals and there were some quality checks and standards that were supposed to be maintained. And because of this program, it became so easy to inculcate that culture of quality management in terms of healthcare. Many hospitals were able to come up with quality improvement teams. And then of course there was a lot of training for the staff that were responsible at the hospital for both medical and medical staff through this program. So, a number of them were trained. And this of course improved their efficiency and productivity. And by that, I mean that the quality in terms of the service that was rendered to the patients or the beneficiaries.”* –I-PUSH NHIF program manager

## WHAT HAS BEEN THE CLIENT/BENEFICIARY EXPERIENCE OF THE PROGRAM AND WITH REGARD TO:

### Financial Protection

Both programs 3MS and i-PUSH contributed to increasing insurance coverage (though the DFS tools were only one of many changes in market dynamics that influenced this change). Many interviewees praised the ease of use of all functions of the system— enrollment, payment, and accessing services. Clients could easily make payments from home, helping them to make payment on time, retain coverage, and remain able to access services *“When we used to pay for example NHIF, we were to go to Kiambu so as to pay but for now that we are paying via the phone you can pay at any time even at night.”* – I-PUSH participant

As shown in the cumulative membership chart above (Figure 8) in the introductory section describing the program in Kenya, the i-PUSH program was successful at enrolling a large number of beneficiaries in a short period of time. *“[I-PUSH] managed to*

*enroll more than 35,000 women and their households who had never been on insurance. [I-PUSH gave] them a platform, where based on the frequency of their incomes they can put in money in small bits and save for their healthcare [that] cannot be diverted. [They] have a mechanism to plan for the future of their households and family.” – PharmAccess program manager respondent.*

One i-PUSH program staff noted that “*encouraging people to pay to save and save in a wallet where you can only use for healthcare is actually an innovative way that can change the way people look at payment of their premiums, even for the persons who do not necessarily have a big income. Because then you find in those kinds of areas, you have someone earning a little income every day. So, if they can adapt the culture of saving a little over that little that they get, then eventually you have people being able to pay for their NHIF contributions without feeling that pinch of having to give up 500 shillings as a whole.*” This supports the LHSS systematic review finding that “mobile money accounts help people smooth health and non-health expenditures when faced with a health shock.”

In Rwanda, linking 3MS to the Ubudehe income classification database played a fundamental role in improving equity by identifying those households that fell into the indigent category and ensuring that they were enrolled in CBHI with premiums fully paid by the government and charging—while those who could afford to pay were charged on a sliding scale based on their ability to pay. In fact, the introduction of the progressive premium structure—rather than a simple standard premium—proved to be virtually impossible without the digital platform to lookup a household’s income category in order to determine how much they should pay.

Similarly, i-PUSH’s socioeconomic mapping contributed to equity by “*giving government information about who they should subsidize, especially the poorest of the poor, and encouraging other partners/NGOs to contribute by subsidizing NHIF enrollments for households that couldn’t afford the whole enrollment fee.*” – *i-PUSH program staff.* Because many clients had never had any type of health coverage before, i-PUSH represented their first opportunity to feel secure that they could access health services without risking a bill they would not be able to pay. Beyond practical financial considerations, respondents described an improved state of mind and confidence. For some clients “*the shift from the one-time large payment of NHIF to gradual saving made paying for health coverage easier.*” – *i-PUSH client.*

Facilities participating in MCF CA/MAF indicated that access to credit improved the ability of facilities to weather dips in funding and consistently pay expenses, maintaining a more stable supply of medications and ensuring health workers are paid. Some respondents indicated that the loans were especially critical in helping them remain solvent through the worst points of the COVID-19 pandemic.

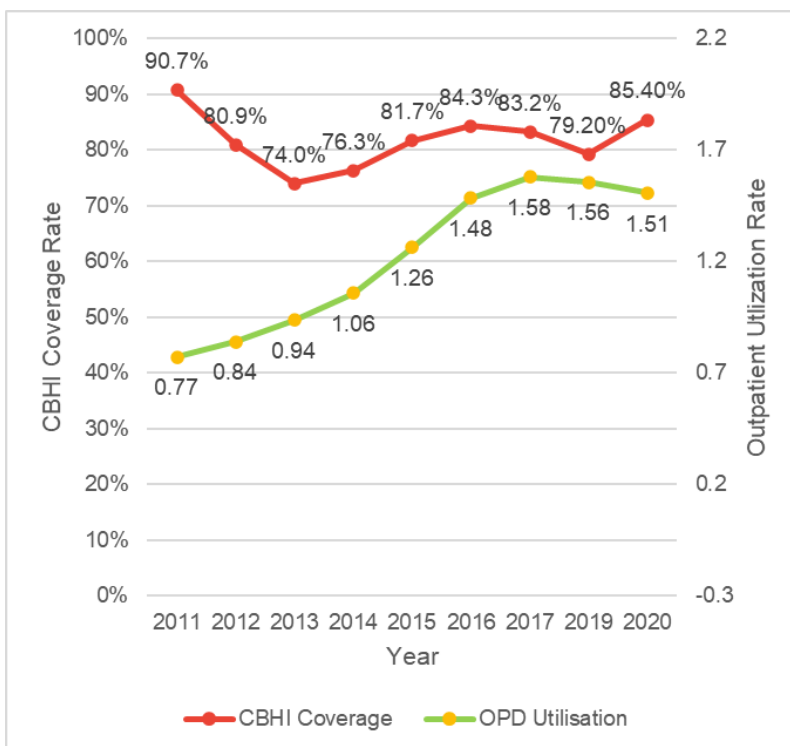
A major advantage to loans through digital Cash Advance and Medical Asset Financing was predictability. Clients reported a greater predictability about whether they would receive a loan and how much they qualified for, which allowed them to plan more effectively. Facilities praised the repayment directly from the till, with many reporting that the gradual repayment eased the financial management burden and avoided difficult situations at the end of the month. “*I can say the fact that the money is being deducted*

*from the till is what is making us feel like we don't have that weight of repayment" – MCF client facility*

## Service Demand/Utilization

Rwanda has seen significant increases in service utilization rates at health facilities over the past decade, but they do not appear to correlate well with CBHI coverage trends, and it would be challenging to attribute them in any way to DFS because of many other confounding interventions in the health sector during the same period. For example, there have been reductions in opportunity costs of going to a health facility for care now that patient flow has reduced waiting times. Other interventions such as the establishment of new public and private health facilities, the national hospital accreditation program, improved supply chain, and wide-ranging capacity building initiatives for health workers have also contributed to increases in access to and quality of care that may have also driven up utilization rates.

**Figure 14:** Comparison of CBHI Coverage and Per Capita OPD Utilization Rates in Rwanda - 2011-2020 (Source: RHMIS and CBHI reports)



In Kenya, several respondents from i-PUSH facilities reported substantial increases in the number of clients accessing their services. Respondents reported the perception that clients were seeking more comprehensive health care services in situations where they might otherwise visit a pharmacist. *“The numbers in terms of daily outpatient numbers, they quadrupled when we started the program. So, for common ailments that people would have generally walked into a chemist and gotten over counter drugs and they opted to come to be seen.” – I-PUSH facility respondent*

The majority of respondents had not had access to any form of coverage prior to the program and made it clear that their service utilization had improved.

## WHAT LESSONS WERE LEARNED ABOUT FACTORS CONTRIBUTING TO SUCCESS OR FAILURE OF DFS?

Both platforms relied on interoperability with national individual or household identification databases that were maintained by other Ministries—to validate ID

numbers with these systems of record and avoid duplication in data entry. The process of setting up these interoperability profiles was challenging technically and politically, and required considerable stakeholder engagement.

The introduction of the two systems was greatly facilitated by foundational investments in the general ICT ecosystem in both countries, such as the following:

- Availability and widespread adoption of digital payment systems led by private mobile operators. Tagging into existing infrastructure for mobile payments brought a lot of transparency and independent accountability.
- Investments in mobile and internet connectivity with widespread coverage across the country.
- A strong pool of software developers.

Both programs leveraged existing community systems that provide a direct link with households in supporting enrollment of beneficiaries. In Rwanda, this relied on mobile money agents and Irembo agents working at the district and village level to overcome the digital literacy issues. In Kenya, this relied on CHVs and CHWs to engage households to join the program and complete the digital registration process together.

Both programs were effective at building trust between all of the organizations that are stakeholders. In Kenya, this included NHIF, CarePay, MOH for CHWs, PharmAccess, AMREF, health facilities, and county government. In Rwanda, this included MOH, RSSB, LODA, NIDA, health facilities, private IT contractors, and key development partners.

Both systems had to deal with massive data that is routed to the servers at the same time—especially in Rwanda where they faced over 9 million membership renewals within a 3-month premium renewal season. Given the importance of data quality, it became clear that cleaning data afterwards is more expensive than controlling it from the field and validating it before it entered the central databases. Both systems introduced innovations to make sure data were checked even before they were submitted to the server.

Both systems relied on socioeconomic data to assist with selecting beneficiaries. In Kenya, this was collected by the program by CHWs and CHVs using the m-Jali digital application. In Rwanda, this was tied to a national household income category database called Ubudehe. In both cases, the governments are realizing the usefulness of that data in decision making, or informing them on some other decisions outside of the health sector and to help target multi-sectoral programs to benefit the poor.

Experience points to the need to have a long-term commitment to the platform. Although the M-TIBA platform was well established by late 2015 when i-PUSH was introduced, the approach was an agile one: *“Starting with a [prototype] and hitting the ground running then the other things come as we go, because as you work you will always find areas that need improvement, the platform will get other features that are useful for the program. You get a working product launch quickly, learn in the process, and improve on the go. Having local developers who understand the local context was seen as a key success factor.” – I-PUSH program staff*

In contrast to Kenya, implementation in Rwanda was slower (nearly four years), even though the system requirements were less complex, because the national CBHI program was undergoing a major transition from the MOH to RSSB at the time and many policies and stakeholders changed.

It was easier and quicker to set up the i-PUSH program in Kenya (just a couple of months for the initial software platform) where there was already an established insurance program NHIF and digital platform (M-TIBA).

I-PUSH and MCF CA/MAF programs worked in both an urban environment (Nairobi) and rural environment (Kakamega) and the provider footprint is very different. This required more engagement with private sector providers in urban settings and public sector providers in rural areas. It was crucial to embrace both partners.

In both cases, digital interventions were coupled with a variety of health interventions—engagement of CHVs/CHWs to support enrollment, household level information, education, and communication (IEC) and data collection; and funding for cash advances and quality improvement on the provider side (CA, MAF) that had a synergistic effect on both the demand and supply sides. Expanding demand should be accompanied by more support for the facilities. *“If you’re targeting community, where they’re low-income, it means the likelihood that the healthcare facilities in those areas are also [in a poor state] is very high—they’ve also not invested so much in terms of technology and equipment, and all that,”* one NHIF respondent noted. SafeCare ratings served as a motivation to facilities. In facilities that performed well or improved, interviewees expressed a feeling of empowerment, while facilities with more resource constraints indicated a demand for more support to help them reach a higher level.

Several respondents noted the need for the right combination of resources to make these DFS initiatives work: *“A good marketing team that understands loans and financing to do a market and feasibility study, an IT solution provider that understands the concept and can come up with a system that is able to book loans and manage repayment. Need to do internal testing between the IT guy, the banker/marketer. Be prepared to tweak and work on the system a little bit more as you scale. Then a Telco such as Safaricom that has money transfer service called M-PESA needs to be open create probably API’s or integrations with IT solution providers, who are now able to tap into that money event system ecosystem.”* – MCF program manager

I-PUSH demonstrated to the NHIF the efficiency of the digital registration process using M-TIBA to register more than 80% of the people who participated in that pilot for one year (35,000 households) and it paved the way for the government’s UHC pilot in 4 counties during 2019 that led to national implementation. *“It was good for us to use experience with the registration from the UHC pilot. That was a major achievement. It led to a national project led by the Ministry of Health.”* – NHIF program manager

Engaging the community before the program starts was believed to be crucial when you are bringing in a new program and a digital wallet they have never seen before. One facility respondent suggested that the program could have been stronger with more effort to sensitize the community and drive demand. Multiple participants lamented a perceived drop-off of community sensitization and outreach, especially after COVID-19 hit, requesting more efforts to bring new people into the program. *“There is some*



*information we were not given, for example, can the card be used for inpatient? All I know is it's used for outpatient. This information should be given to the users.” – i-PUSH participant*

Sustainability of the i-PUSH program faced challenges from its initial design: *“The program should be changed to have the co-sponsorship payment from the member right from the beginning. You have someone who just joins because it's free, but they're really not interested in saving for health care and the low percentage of re-enrollment in the second year attests to that.” – NHIF program respondent.* While many clients dropped out of the program due to these issues, others expressed how getting access to NHIF coverage and exposure to its value ensured that they would find a way to continue paying. In particular, clients who had accessed major services with the coverage that they could not have otherwise hoped to afford came to see the coverage as essential.

These initiatives demonstrated the value of data analytics. Dashboards are critical for clients and loan managers because *“they want to see a summary of how they performed. Say the last one month, they want to see whether they're making an income. It's a highly competitive business, they like dashboards because they're able to pull statements in real time. These initiatives also contributed to building the culture of data use by facility managers and beneficiaries.” – MCF program respondent*

## GENERAL CONCLUSIONS

### DFS PROGRAM IMPLEMENTATION CONSIDERATIONS

These programmatic case studies provided a wealth of information about the facilitators and barriers to implementation of DFS for health programs. This included the need for a change management approach that pays equal attention to and effectively manages issues related to people, processes, and technology. The findings also underscored the need for DFS for health initiatives to be integrated programs that engage a broad range of stakeholders and address issues that cut across multiple health system building blocks holistically.

### INFLUENCE OF DFS PROGRAMS ON HEALTH SYSTEMS PERFORMANCE

Key informants highlighted a number of areas where DFS-enabled programs were perceived to influence health systems performance. These included improving quality of care by reducing patient wait times, offering a wider array of diagnostic services using new equipment funded by MAF to reduce referrals (which in turn also increased revenue), increasing efficiencies by simplifying patient flows in clinics, generating cost savings by reducing paper records and some staff previously needed for insurance enrollment verification, and improving transparency and control by enhancing financial data management and use.

These programs also succeeded because they were designed with a health system strengthening approach that focused intentionally on enhancing key building blocks, in particular governance, health financing, service delivery, human resources, information and health technology, with an integrated approach.

Both initiatives included strong **leadership and governance** components. For example, Rwanda's country-led CBHI initiative highlighted the value of strong governmental support from the highest levels – especially for mobilizing the foundational investments in mobile networks and internet connectivity, driving the vision for digitization of government services (“zero paper, zero trips”) and enacting special ministerial orders, and promoting mobile money transactions in lieu of cash payments when it appeared there was a risk of spreading COVID 19-with cash transactions. The Kenyan i-PUSH experience demonstrated how an NGO- and donor-led UHC pilot project that fully engaged government institutions from the start led the NHIF to later adopt the M-TIBA platform nationally and scale it up as an option for all of its beneficiaries.

Both of these case studies highlighted the need to build trust between diverse stakeholders—organizations and leaders in both public and private sectors as well as the targeted beneficiaries. The DFS initiatives also supported national e-government initiatives to move from manual to automated management for greater efficiency, transparency, equity, and control.

Both experiences noted the need for the right combination of **human resources** to design the DFS solutions and make them work. This included multidisciplinary teams including a good marketing/social mobilization team, IT solution provider, telco representatives, and, in the case of these UHC interventions, stakeholders representing

insurers, healthcare providers, and clients. The programs also built trust among providers and clients by leveraging formal agreements for data sharing, consent, and data privacy. Engaging the community before introducing a new technology or starting a new program was considered crucial. Both initiatives implemented grass roots social mobilization and outreach campaigns that appear to have paid dividends in terms of increasing coverage.

As expected for digital health-related case studies, a significant number of conclusions were related to **information and health technology**. These included:

- Successful implementation relied on local teams of software developers who understand the context within which their systems will be operating and can provide continuous support to tweak the system based on new features suggested by users or required to keep up with changes in the digital ecosystem (interoperability, new DFS gateways, etc.), and to have a long-term commitment to the DFS platform to ensure sustainability.
- The Kenya experience demonstrated the value of data analytics – enabling clients and service providers to see their own data, developing dashboards for health facility managers to track their loans, and enabling NHIF staff to follow utilization rates by their beneficiaries. Being able to triangulate financing (premium payment and provider payment), socioeconomic and service utilization, and quality of care data unleashed new insights.
- Data quality was highlighted as an issue for unique identification and validation of program beneficiaries. This was dealt with in part by creating robust real-time interoperability profiles with databases managed by other national authorities and developing special mobile user interfaces to validate data and uploaded images of certificates at the point of collection before the transactions are completed in the centralized system.
- In order to cope with high volumes of data coming into the server at the same time—especially in Rwanda during the 3-month premium renewal season when over 9 million members’ renewals were processed—developers noted the need to monitor and address performance issues and host applications in reliable data centers.
- Both cases studies demonstrated the value of taking an enterprise architecture approach to developing these systems by establishing data sharing agreements and building robust gateways to move data between government and private sector systems, linking membership data with utilization data and enabling secure financial transactions. Because of the interoperability requirements of DFS, it was essential to address connectivity issues at each level of the system (central, health facility and community). While certain functions could be accomplished offline in Kenya (e.g., i-PUSH registration) and synchronized with the system later, attempts to develop an offline version of 3MS in Rwanda proved to be too complicated (this was due to the need to lookup parameters in real-time from external online databases before calculating premiums). Investing in better connectivity by upgrading modems and switching internet providers turned out to be more effective than changing the software.

The introduction of these DFS for health programs was facilitated by foundational investments by FINTECH in both countries. These included:

- Investments in mobile and internet connectivity with widespread coverage across the country
- Availability and widespread adoption of digital payment systems led by private mobile operators. Tagging into existing infrastructure for mobile payments brought a lot of transparency and independent accountability.

Conclusions around **health financing** were related to the fact that both of these DFS programs were built on top of existing national health financing programs—NHIF in Kenya and CBHI in Rwanda—that already had an established track record before DFS options were implemented. The digital financial services were driven by the needs of the health insurance programs, not the other way around. It was also apparent that the public-private partnerships established to support these initiatives (between the investing donors, government, health providers, and private FINTECH operators) can be a financial win-win relationship. Government expanded access to health care, health providers had easier access to credit to smooth out cash flow issues and a growing pool of beneficiaries to serve, investors had a sustainable social enterprise to support, and the FINTECH operators added new clients and more funds circulating in their mobile money pool.

Both countries relied on socioeconomic data to assist with identifying key gaps in coverage and promoting equity across its targeted beneficiaries. In Rwanda, this was achieved by linking with an existing national household income categorization database maintained by the Ministry of Local Government, whereas in Kenya, the program generated their own household data to select households for i-PUSH—and that data was later used by government programs in other sectors to help target agricultural subsidies to poor households.

Both experiences benefited from existing community systems for **service delivery** that worked to provide a direct link with households to scale up and overcome household level digital literacy challenges. The digital interventions were coupled with a variety of health interventions—engagement of CHVs/CHWs to support enrollment, household level IEC and data collection, and funding for cash advances and quality improvement on the provider side (CA, MAF) that had a synergistic effect on both the demand and supply sides of service delivery.

The COVID-19 pandemic exerted a major shock to the health systems in both countries at the time these case studies were being conducted and these DFS programs were not exempt. It became a challenge to conduct community and health facility level social mobilization and loan marketing efforts due to social distancing requirements and sporadic lockdowns. However, citizens and health facilities were increasingly oriented towards using mobile payments for services to avoid potential transmission of COVID-19 virus when handling cash. The existence of digital financing options contributed to resiliency by preparing both the clients and the health facilities to adapt to using mobile money transactions and develop their confidence in using such platforms for health-related and other payments. The Cash Advance and Medical Asset Financing loans programs also enabled some health facilities to continue paying staff even when local populations were fleeing hospitals and clinics for fear of contracting COVID-19, while

others were able to purchase much needed medical equipment such as respirators for severely ill patients.

## CLIENT/BENEFICIARY EXPERIENCE

Respondents from both of these case studies perceived that DFS programs contributed to increasing financial protection by increasing enrollment in health insurance schemes that covered a wide array of preventive, diagnostic, and curative services, thereby reducing out-of-pocket expenditures. However, the study methodology did not enable us to establish the extent to which the DFS components of the programs contributed to beneficiaries' enrollment decisions. The low retention rate from year 1 to year 2 (12%) for households targeted for the i-PUSH program was discouraging but is likely explained by their precarious financial situation (aggravated by the COVID-19 pandemic).

Health facility managers that benefited from the Kenya DFS programs that supported health facilities with the MCF CA/MAF digital loans and SafeCare quality improvement initiatives recognized a wide range of benefits. The mobile loan programs helped provide working capital for operating costs to bridge periods when there were downturns in facility utilization or when reimbursement or capitation payments from third party payers were delayed. These loans also enabled them to purchase specialized medical equipment to extend their diagnostic service offerings and respond to the critical care needs of patients affected by COVID-19.

## RECOMMENDATIONS

Based on the conclusions and lessons learned from these programmatic case studies about introducing digital financial services for health in Kenya and Rwanda, the following recommendations should be considered in the design and implementation of health programs incorporating DFS:

- **DFS for health programs should begin with an assessment of the current state of the digital health ecosystem in order to establish a multi-sectoral ICT investment roadmap, filling key gaps to build upon and be sustained by a solid foundation in the countries where the programs are implemented.** National coverage of mobile and internet connectivity, existing mobile money payment systems and a local pool of software developers are required at a minimum—and these investments are typically not dependent upon the health sector. Assessing the level of maturity of these foundational investments is a critical first step that will help build a stage-based investment strategy.
- **DFS for health programs should leverage the existing service delivery ecosystem, for example, community level agents (CHWs, CHVs, mobile phone agents), to make the services accessible at the household level and help bridge the digital divide.** In Rwanda, many community members relied on the broad network of mobile phone agents to assist them with making their premium payments. In Kenya, CHWs and CHVs with smartphones sensitized household members about the value of health insurance and walked them through the more complex digital enrollment process.
- **DFS for health programs and those supporting them should work to develop trust with and engage multi-sectoral stakeholders from government (health and other ministries) and private sectors (especially**

**FINTECH, banking, and mobile industries)** in order to promote collaboration and improve sustainability of DFS for health initiatives. This is particularly important to enable interoperability to link and exchange data between otherwise stove-piped data systems and can be facilitated by using an inclusive, multi-stakeholder enterprise architecture and systems thinking approach. This was particularly challenging in NGO-initiated programs such as i-PUSH, where some of the stakeholders had not worked together previously, but was also problematic in a government-initiated program in Rwanda, where intra-ministerial data sharing agreements took a long time to work out.

- **DFS programs should promote opportunities to use the wealth of transactional data generated by DFS for other purposes.** The social categorization data generated to identify households for i-PUSH and the Ubudehe database managed by LODA in Rwanda were also used to target households eligible for other social support programs. There are also opportunities to use artificial intelligence and other data analytics approaches to triangulate financial, service utilization and mobile phone utilization data to study utilization patterns and to identify under-served market segments for more intensive outreach.
- **Initiatives that seek to expand financial protection must be built around the financial realities of the target populations they serve.** Kenya's i-PUSH program sought to enroll poor women from urban shantytowns and impoverished counties in NHIF—starting with heavy subsidies and expecting them to progressively save towards paying their own premiums. In fact, even the partial contributions expected proved to be unrealistic for many who had to choose between putting food on the table, paying school fees, or paying their insurance premiums. Over 80% of those enrolled in the program the first year dropped out when they were unable to save enough to cover 50% of their premium during the first year. In spite of this challenge, beneficiaries of the programs in both countries appreciated the option to spread the premium costs into multiple payments over time, thereby smoothing out the costs of having insurance coverage. The data generated on the savings patterns and financial situations of households can be used to identify target groups for government or donor subsidies to support indigents.
- **DFS programs should incorporate mechanisms and payment strategies that enable beneficiaries and third parties (relatives, small businesses, government, or donors) to contribute to insurance premium costs or health savings accounts so that more families can benefit from preventive and curative health services without financial hardship and countries can advance on the path towards UHC.** The i-PUSH program established that those beneficiaries who were enticed to begin saving early (e.g., the first day of enrollment) and saved small amounts frequently (at least three times a year) were most likely to reach their savings goals and continue with the program. In Rwanda, this proved to be an effective approach to enable small businesses that rely on an informal workforce of day laborers to provide them with basic health insurance coverage, or for wealthier relatives to subsidize coverage of other family members with the confidence that the money was being used for the intended purpose.
- **Investing in DFS programs that support health insurance premium payments may reduce some barriers to UHC and is likely to expand health**

**service coverage.** While our secondary data analysis could not confirm any causal relationship between enrollment in DFS-enabled insurance programs and increased utilization of health services, the Rwanda experience demonstrated that overall service utilization increased significantly as CBHI coverage rates increased. Anecdotal reports from Kenya also indicated that once enrolled in NHIF, beneficiaries felt empowered to access services from across the network of participating facilities that offered a wider range of services or with a reputation for better quality of services, rather than relying only on the closest clinic in their neighborhood.

- **Programs to build resilience should consider incorporating DFS into health care financing initiatives.** The programs in both countries suggest that DFS helped beneficiaries and health service providers overcome the dramatic shock of lockdowns and surges of patients with acute care needs brought about by the COVID pandemic. They enabled patients to make electronic payments for premiums and co-payments (when it was initially believed that COVID transmission might be facilitated by handling paper money). They also enabled providers to obtain quick bridging loans to pay personnel when cash flow dropped in clinics (when patients stayed away due to fear of being exposed to COVID cases) or to purchase new types of equipment, such as ventilators needed to save the lives of COVID patients.

These programmatic case studies have highlighted the wide range of opportunities and benefits that can accrue to the general population, health service providers, and public and private sector organizations that support the DFS ecosystem when health programs collaborate to incorporate digital financial services into their health interventions.

# Digital Financial Services for Health: Programmatic Case Studies

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# Acronyms

3MS	Mutuelle Membership Management System
CBHI	Community-based health insurance
DFS	Digital financial services
IHSSP	USAID Integrated Health System Strengthening Project
i-PUSH	Innovative Partnership for Universal Sustainable Healthcare
LMICs	Low and middle income countries
MAF	Mobile Asset Finance
MCF	Medical Credit Fund
MSH	Management Sciences for Health
NHIF	Kenya National Hospital Insurance Fund
RHSS	USAID Rwanda Health System Strengthening Project
RSSB	Rwanda Social Security Board
UHC	Universal health coverage
USAID	United States Agency for International Development
WRA	Women of reproductive age

# 1. INTRODUCTION

## 1.1 Background

Universal health coverage (UHC) has been widely adopted by countries, donors, and the international community as a key goal. Despite growing political will and momentum, low and middle income countries (LMICs) face numerous challenges to adequately finance UHC and ensure the entire population can access quality health services without facing financial hardship. Digital financial services (DFS), and DFS specific to the health sector, have been identified as a category of innovations that can contribute to both increased financial protection as well as support health system performance.

Building on the 2019 publication “The Role of DFS in Accelerating USAID’s Health Goals”, USAID’s Global Health Bureau, via its Office of Health Systems and Center for Innovation and Impact, commissioned studies on the role of DFS in the context of efforts to advance financial protection and support improved health system performance, to better understand the factors that make solutions successful and the role digitization can play in enhancing and leveraging these factors.

This study is intended to examine the role of DFS in two programmatic case studies in the context of efforts to advance financial protection in accessing health services and to support improved health system performance. The case studies will use a process evaluation approach focused on documenting the key implementation success factors for practical use by governments, donors, and others interested in advancing this space. One programmatic case study will examine an innovative M-TIBA-enabled program in Kenya called i-PUSH. The i-PUSH program running in two counties leverages the M-TIBA mobile wallet to enable multiple payers to pay for UHC, and in parallel, it also invests in improving the quality of healthcare providers by introducing the SafeCare approach. Providers have access to small loans through the Medical Credit Fund mobile-based programs digital Cash Advance (CA) and Mobile Asset Finance (MAF). The second proposed programmatic case study will examine a DFS-payment-enabled community-based health insurance (CBHI) program in Rwanda. Information will be primarily gathered qualitatively through key stakeholder discussions, utilizing existing quantitative program data where available.

### **Digital Payment-enabled Community-based Health Insurance (CBHI), Rwanda**

The Community-Based Health Insurance (CBHI) program (also known as *Mutuelle de Santé*) was initiated in 2004 as a key intervention in moving towards universal health coverage in Rwanda. Its integration of DFS payment options is an example of a government-led program reaching national scale. CBHI provides members access to a package of primary (preventive, promotional and curative) and referral care through a network of public and some private health facilities. The scheme covers over 80% of the population using a tiered scale for premium payment based on household economic status, with coverage provided at no cost through the government of Rwanda for those in the first tier. Primary health care services are covered by CBHI, with a 10% co-pay applied at district, provincial, and referral hospitals. Management of CBHI transferred from the Ministry of Health (MoH) to the Rwanda Social Security Board (RSSB) in 2015, to consolidate management and improve efficiency of the country’s pension and insurance schemes.

The annual process of renewing premiums for household members posed significant challenges. CBHI staff had to determine a household’s income category and number of household members before

issuing an invoice. Premium payments had to be made through the formal banking structure—a long walk for many—and then families had to often return to their original CBHI section office to renew memberships (even if they had moved far from their home districts). Digital health and DFS was integrated to attempt to address a number of these issues. To resolve the income categorization issue, Management Sciences for Health (MSH) supported the Ministry of Local Government to design and implement a national online household income categorization database - called UBUDEHE. RSSB, together with local partners and MSH through the USAID-supported Integrated Health System Strengthening and Rwanda Health System Strengthening (RHSS) projects, developed the Mutuelle Membership Management System (3MS) web and mHealth application.

3MS automatically calculates household premiums through its real-time link with the UBUDEHE database. Households are placed in one of three tiers for annual premium contribution payments: Category I premiums are 3,000FRw per person (however, households in this category are considered indigent and premiums in Category I are funded directly by the government of Rwanda and other donors), Category II premiums are 3,000FRw per person, and Category III premiums are 7,000FRw per person. The system enables citizens to pay using a number of options including DFS mechanisms such as: Irembo with options including online banking, Mobicash and multiple mobile money systems. 3MS also enables health facility staff anywhere in the country to verify whether or not individuals were covered using either the web portal or mobile SMS, facilitating patient access to health facilities even when outside their catchment area as well as removing the expense and burden of purchasing and carrying membership cards for CBHI members.

### **M-TIBA-Based i-PUSH and Medical Credit Fund Digital Loans, Kenya**

PharmAccess, in partnership with Safaricom and IT company CarePay, developed a health wallet on a mobile phone. Launched in Kenya in 2016 as M-TIBA (for mobile treatment), the health wallet enables people to pay for healthcare services using an innovative blend of insurance and saving options. Different payers can pay into the wallets: individuals can set aside money for their own care; affluent family members can send healthcare remittances to their relatives, and donors can directly channel payments into the wallets of people who need it most.

In support of Kenya's movement to UHC, PharmAccess with CarePay are leveraging the M-TIBA mobile wallet to enable multiple payers to pay for UHC, including contributions from the individual.

#### *i-PUSH*

After successfully applying for the Dutch Postcode Lottery's Dream Fund in 2016, PharmAccess and AMREF collaborated on the Innovative Partnership for Universal Sustainable Healthcare (i-PUSH) initiative, which uses mobile technology to connect low-income women of reproductive age (WRA) and their families to health insurance and better quality care in Kenya. I-PUSH is contributing to the UHC agenda of the Kenyan government. Community health workers enroll low-income women and their families on a National Hospital Insurance Fund (NHIF) cover through the M-TIBA platform, educate women on healthcare related issues and collect healthcare data. Furthermore, women are stimulated to co-pay for their insurance through behavioral science techniques.

I-PUSH, running in two counties in Kenya, acts as a testing opportunity to understand how these innovations can contribute to expanding health insurance coverage. In 2018, the first full year of implementation, 13,950 women and their families in Nairobi and Kakamega counties enrolled with the NHIF health insurance and connected to 27 health facilities undergoing SafeCare quality improvement

plans. These women were digitally enrolled on a rolling basis by trained community health workers. Another aspect of the program is to understand the behavioral barriers to saving for health insurance. In 2019, an additional 21,796 women and their families in Nairobi and Kakamega were enrolled. In 2020, 312 women and their families have been added, with further enrollment awaiting the introduction of a new proposition to be introduced.

### *Medical Credit Fund Digital Cash Advance and Medical Asset Finance*

Founded in 2009 by PharmAccess, Medical Credit Fund (MCF) helps health small and medium-sized enterprises (SMEs) in Sub-Saharan Africa to access much needed finance, support growth and improve the quality of care they deliver. Despite demand and an obvious need, health SMEs face difficulties accessing working capital through traditional financial institutions and lending products.

In 2017, MCF together with CarePay, launched Cash Advance; a digital solution specifically designed for health SMEs in Kenya. Cash Advance is a loan product with terms up to six months that provides SMEs access to cash through their phones. It's fully mobile, with a short processing time, and does not require traditional collateral. Repayment is automatic on a daily basis, on a percentage of the SMEs' digital revenues.

In 2018, MCF expanded Cash Advance to a product called Mobile Asset Finance (MAF), based on the same principles and technology, but designed for medical equipment purchases. MAF allows for a longer loan term (maximum 36 months) and only considers the equipment purchased as additional collateral.

The Cash Advance and MAF products are designed for private health SMEs, including clinics, health centers, hospitals, pharmacies, dentists, laboratories and diagnostic imaging centers. Cash Advance is typically used for working capital purposes such as paying staff, suppliers, water bills, rent, etc. However, the specific use of the funds is not tracked. Mobile Asset Finance is typically used for medium end medical equipment purchases, such as ultrasounds, lab equipment, dental chairs, etc. This information is captured retrospectively by MCF. Potential CA and MAF clients must be appropriately licensed to receive a loan. They have the option to participate in the SafeCare quality improvement program but it is not compulsory.

The technology and system enabling the Cash Advance and MAF products is the LipaNa Mpesa Till (account), residing under CarePay, held by the health SMEs. CarePay is MCF's agent/partner for the product. After the health SME grants viewing rights to MCF on its Till, MCF can establish monthly MPESA and M-TIBA transactions (patient payments) on the Till and advance maximum one month of revenues to the health SME (Cash Advance). After entering into a Cash Advance agreement, the health SME allows MCF/CarePay to split each patient payment into a loan instalment and a remainder. The loan instalment is directly transferred to MCF and the remainder hits the balance of the Till. In practice, the vast majority of patient payments are from MPESA transactions and a minority from M-TIBA transactions.

## 1.2 Project Description

Digital financial services (DFS) have the potential to significantly support the advancement of individual financial protection and improved health system performance. Under the PATH-led Digital Square initiative, MSH, in collaboration with PharmAccess, government stakeholders, and USAID, will develop a report examining the role of DFS in two programmatic case studies in the context of efforts to advance financial protection in accessing health services and to support improved health system performance.

The case studies use a process evaluation approach and will analyze implementation considerations and critical program components that can enable or hinder success.

A mixed-methods approach will be implemented with the DFS programs described above: - the innovative M-TIBA-enabled programs i-PUSH and digital Cash Advance/Mobile Asset Finance in Kenya and the DFS-enabled community-based health insurance program in Rwanda. The study will gather insight and triangulate results across different stakeholder perspectives including DFS implementers, government, beneficiaries, and providers.

The programmatic case studies will utilize a process evaluation approach to examine the key **Implementation Considerations** of the programs. It will document critical facilitators and barriers to success in implementation—including beyond digitization, ways in which the programs managed adaptation and addressed challenges, as well as lessons in health process digitalization.

The programmatic case studies will contribute to the areas of research inquiry below utilizing qualitative data and existing program data/information to the extent available. It is expected that the case studies will provide insight and stakeholder perceptions on the following without assigning attribution or evaluating impact:

**Financial protection** – such as whether/how the program contributes to financial protection among clients and if that differs from a non-digital approach (or prior to digitalization);

**Demand and Utilization** – such as whether the DFS-enabled program is perceived to contribute to demand for and use of health services among clients, particularly poor and vulnerable populations, and if/how the program was designed to address client demand and utilization; and

**Health Systems Performance** – such as whether the DFS-enabled program was designed to and/or perceived to improve quality and responsiveness of health service providers, and if any perceived changes could be understood to be DFS or other digitization-related.

## 2. PURPOSE AND OBJECTIVE

### Purpose

The study will use a mixed methods and process evaluation approach to address the key research questions shared in Table 1 below with the research area categories to which they align.

### Research questions

The research questions below are overarching for both programmatic case studies. When referring to “the program” below, it applies to the programs as described in the background information above. Namely, the digital payment-enabled system for CBHI in Rwanda, and the i-PUSH M-TIBA and digital Cash Advance/Mobile Asset Finance programs in Kenya. Each of which are DFS-enabled within programs with broader digitization.

Table 1

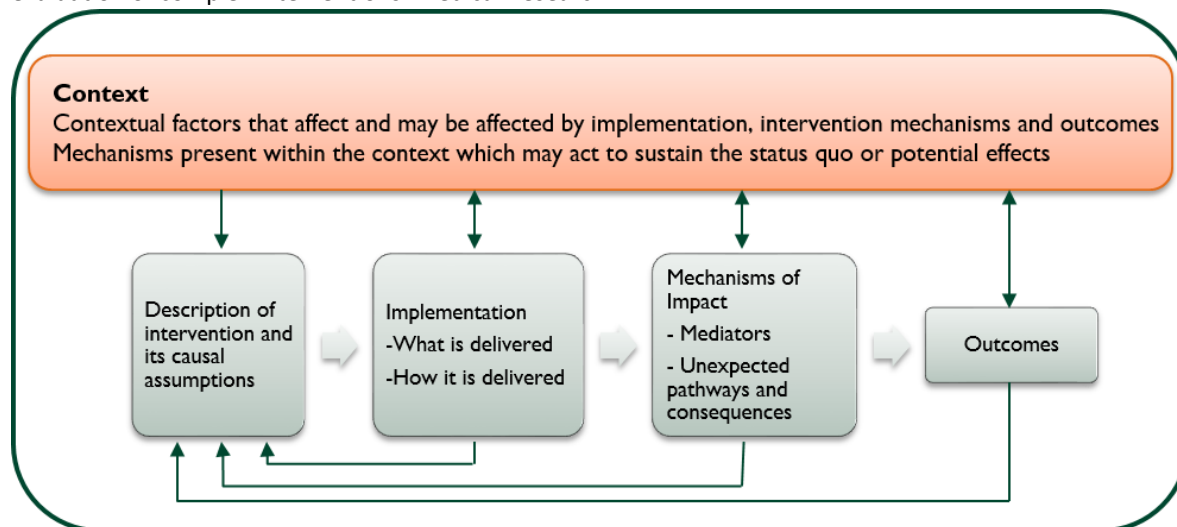
No	Question	Categories
1	What is the experience in implementing the program, specifically: <ol style="list-style-type: none"> <li>a. facilitators and barriers to successful implementation</li> <li>b. program adaptations</li> <li>c. pandemic-related changes</li> </ol>	Implementation Considerations, Health Systems Performance
2	How is the program perceived to influence health systems performance? (such as, with regard to service provider and health system quality and efficiency)	Health Systems Performance
3	What has been the client/beneficiary experience of the program and with regard to: <ol style="list-style-type: none"> <li>a. financial protection</li> <li>b. service demand/utilization</li> </ol> (disaggregate by user characteristics if possible)	Implementation Considerations, Financial Protection, Demand and Utilization

### 3. STUDY DESIGN AND METHODOLOGY

#### 3.1 Study Design

This is a mixed methods study incorporating a process evaluation approach. It will use qualitative methods and secondary analysis of quantitative data to answer the research questions.

Figure 1 - Key functions of process evaluation and relations among them. Adopted from Moore et. al. Process evaluation of complex interventions: Medical Research



### 3.2 Methodology

#### 3.2.1 Study Population and Setting

##### *Kenya*

The study will focus on implementers and recipients/users of the i-PUSH M-TIBA program in Nairobi and Kakamega County and of the MCF digital Cash Advance/Mobile Asset Finance in Kenya. This will include CarePay, NHIF, health facilities, PharmAccess, women of reproductive age participants in the i-PUSH program, and MCF digital Cash Advance/Mobile Asset Finance loan recipients.

##### *Rwanda*

The study will interview implementers, developers and recipients/users of the CBHI. This will include IREMBO, 3MS developers, national and district CBHI managers, CBHI clients (DFS users and non-users), and health facilities.

#### 3.2.2 Sampling Methodology and Selection

This study will consist of several key components:

- Qualitative interviews conducted with clients/users, implementers and managers
- Kenya case study - secondary analysis of i-PUSH program and Medical Credit Fund data
- Rwanda case study - secondary analysis of 3MS CBHI data

Table 2 shows the proposed data collection methods and alignment to the research questions.

**Table 2: Data collection methods and research questions**



Data Collection Method	1. What is the experience in implementing the program, specifically: a. facilitators and barriers to successful implementation b. program adaptations c. pandemic-related changes	2. How is the program perceived to influence health systems performance?	3. What has been the client/beneficiary experience of the program and with regard to: a. financial protection? b. service demand/utilization
<b>Kenya</b>			
<b>iPUSH MTIBA</b>			
KIIs CarePay	X	X	
KIIs NHIF	X	X	
KIIs PharmAccess	X	X	
KIIs iPUSH MTIBA participating facilities (1 staff per)	X	X	
KIIs iPUSH participants (WRA)		X	X
Secondary analysis of iPUSH MTIBA program data		X	X
<b>MCF Digital Cash Advance and Mobile Asset Finance</b>			
KIIs CarePay	X	X	
KIIs PharmAccess	X	X	
KIIs CA and MAF loan recipients facilities (1 staff per)		X	X
Secondary analysis of CA and MAF program data		X	X
<b>Rwanda</b>			
KIIs IREMBO (implementers)	X	X	
KIIs 3MS developers (software company and RSSB IT)	X		
KIIs National CBHI managers	X	X	
KIIs District CBHI managers	X	X	

KIIs CBHI clients (DFS users and non-users)		X	X (DFS users and non-users)
KIIs participating facilities (public and private facilities)	X	X	
Secondary analysis of CBHI 3MS program aggregate data			X

### Qualitative interviews

A stratified purposeful sampling methodology will be used to select participants to conduct semi-structured key informant interviews (KIIs). Participant recruitment processes described for each group below. Due to the health and safety considerations of the ongoing COVID-19 pandemic and limitations in travel between and within countries, most interviews will be conducted remotely using a web conferencing platform or via telephone call. Some interviews will be conducted in person. Participants will be selected based on several criteria (Tables A to I). Where multiple participants exist for each stratified group after meeting the minimum criteria, participants will be selected randomly. A maximum of 36 interviews will be conducted in Kenya, and 26 interviews in Rwanda as per Table 3 below.

**Table 3: Qualitative Key Informant Interviews**

Position	Number
<b>Kenya</b>	
<i>i-PUSH M-TIBA</i>	
KIIs Implementers (CarePay, NHIF, PharmAccess)	6
KIIs i-PUSH M-TIBA participating facilities (1 staff per facility)	4
KIIs i-PUSH M-TIBA participants (WRA who continued to year 2, did not continue to year 2)	16
<b>Total - i-PUSH M-TIBA</b>	<b>26</b>
<i>MCF Digital Cash Advance/Medical Asset Finance Loan</i>	
KIIs Implementers (CarePay, PharmAccess)	4
KIIs MCF Digital Cash Advance/Medical Asset Finance loan recipient facilities (1 staff per facility)	6
<b>Total - MCF Digital Cash Advance/Medical Asset Finance</b>	<b>10</b>
<b>TOTAL - KENYA</b>	<b>36 maximum</b>
<b>Rwanda</b>	
KIIs Implementers (National CBHI, IREMBO, 3MS developers -	6

software company and RSSB IT)	
KIIs District CBHI managers	2
KIIs CBHI clients - DFS users + non-users	12
KIIs participating facilities (public and private facilities)	6
<b>TOTAL - RWANDA</b>	<b>26 maximum</b>
<b>GRAND TOTAL</b>	<b>66 maximum</b>

## KENYA

### i-PUSH M-TIBA

#### *Implementers*

A total of six implementers of the i-PUSH M-TIBA program will be interviewed (Table A). PharmAccess will recommend individuals from implementing groups by prioritizing those who have been there since the inception of the project. Where this is not possible, participants will be prioritized based on time spent on the project. MSH will contact individuals twice, and if unavailable will move on to the next participant.

**Table A: i-PUSH M-TIBA Implementers Sample**

CarePay	NHIF	PharmAccess
2	2	2
<b>KIIs Implementers Total: 6</b>		

#### *Participating facilities*

A total of four facilities will be selected for interviews (1 staff per facility) with stratification on whether they entered data into the program or not (Table B). Facilities who were engaged in the i-PUSH project from the beginning will be prioritized. PharmAccess will provide a list of facilities who meet the below criteria and participate in the i-PUSH project. MSH will contact facilities twice, before moving to the next facility on the list.

**Table B: i-PUSH M-TIBA Facilities Sample**

Health facilities	
Entered data	Did not enter data
2	2
<b>KIIs Participant Facilities Total: 4</b>	

### *Participants (WRA)*

A maximum total of 16 women of reproductive age will be selected for interview, stratified by whether or not they used health services in the first year and whether they renewed for the second year (Table C). PharmAccess will provide a list of 30 people randomly selected that meet each category. MSH will go down the list and attempt to contact each participant twice for a response, before moving onto the next participant to meet the maximum participants per category below.

**Table C: i-PUSH M-TIBA Participants Women Sample**

Used health services in year 1		Did not use health services in year 1	
Renewed for year 2	Did not renew for year 2	Renewed for year 2	Did not renew for year 2
10	2	2	2
<b>KIIs Participant WRA Total: 16</b>			

### **MCF Digital Cash Advance and Mobile Asset Finance**

#### *Implementers*

A maximum total of four implementers of the Digital Cash Advance and Mobile Asset Finance programs will be interviewed (Table D). PharmAccess will provide individuals with priority to implementers who have been there since the inception of the program. Where this is not possible, participants will be prioritized based on time spent on the program.

**Table D: MCF Digital Cash Advance and Mobile Asset Finance Implementers Sample**

CarePay	PharmAccess
2	2
<b>KIIs Implementers Total: 4</b>	

#### *Recipient facilities*

A total of six MCF CA and/or MAF recipient facilities will be interviewed (1 representative per facility) stratified by repeat/non-repeat loan recipients and gender (Table E). Only participants who have received a loan at least 4 months prior to data collection will be interviewed, to ensure they have had some time within the repayment period. PharmAccess will provide a list of loan recipients which meet the below criteria. MSH will contact facilities twice, before moving to the next facility on the list.

**Table E: MCF Recipients Sample**

Repeat loan recipients		Non-repeat loan recipients	
Male	Female	Male	Female
2	2	1	1
<b>KIIs Recipients Total: 6</b>			

**RWANDA**

*Implementers*

A total of six implementers of the CBHI program will be interviewed in Rwanda at IREMBO, 3MS and the National CBHI (expected breakdown, Table F). RSSB will recommend individuals from implementing groups by prioritizing those who have been engaged since the inception of 3MS and knowledge of the DFS payments integration. Where this is not possible, participants will be prioritized based on time spent with the program.

**Table F: CBHI Implementers Sample**

IREMBO	3MS developers	National CBHI
1	2	3
<b>KIIs Implementers Total: 6</b>		

A total of 2 District-level CBHI managers will be interviewed. RSSB will provide an introduction to district CBHI managers for potential interviewees.

**Table G: District CBHI Managers Sample**

Urban (a Kigali district)	Rural
1	1
<b>KIIs District CBHI Managers Total: 2</b>	

*CBHI Clients*

A total of 12 clients will be interviewed stratified by whether they are a DFS user for the CBHI premium payment and urban or rural location (Table G). Recruitment lists for potential interviewees of 30 people per category will be provided by RSSB CBHI management for individuals meeting the requirements below. Individuals will be contacted until each sample category is filled. If there is difficulty connecting with potential interviewees, District CBHI Managers will be asked to provide connection to appropriate clients. Participants will be contacted twice before moving on to the next name on the list. Clients from Categories II or III will be selected, as the premiums for those in Category I are covered by the government. Every effort will be made to recruit female-headed households.

**Table H: CBHI Clients Sample**

DFS Users (for CBHI premium payment)				DFS non-users (for CBHI premium payment)			
Urban		Rural		Urban		Rural	
Male	Female	Male	Female	Male	Female	Male	Female
2	2	2	2	1	1	1	1
<b>KIIs Clients Total: 12</b>							

*CBHI Facilities*

A total of six facilities will be interviewed stratified by public/private and by type of health facility (health center or hospital). RSSB will provide a list of facilities who meet the below criteria and participate in CBHI. MSH will contact facilities twice, before moving to the next facility on the list.

**Table I: CBHI Facilities Sample**

Public		Private	
Health Center	District hospital	Private Health Post	Babyl (telehealth)
2	2	1	1
<b>KIIs Facilities Total: 6</b>			

*Secondary analysis of data*

*i-PUSH M-TIBA*

We will analyze i-PUSH M-TIBA data from the last 28 months. Specifically, we expect to look at participant trends by age, gender, relationship (primary member, spouse, etc.), number of members registered.

In beneficiary relationship to the program, we will look at program data including:

- Participation and duration in program by age, gender, relationship
- Amount transferred to M-TIBA wallet and trends over time
- Number of payments made through M-TIBA

- Percent of participants extending insurance cover to Year 2, and for what duration

Aggregate trends in clinic visit use will be examined from one participating facility which has tracked i-PUSH participant service utilization in detail, providing a positive outlier example.

#### *MCF Digital Cash Advance and Mobile Asset Finance*

We will analyze CA and MAF data from the beginning of the MAF program in 2018 through present. We will look at trends in CA and/or MAF utilization by number of loans per client, frequency, average loan size and change in loan size by loan number, length of loan, and loan size relative to client MPESA transaction volume. We will look at before and after COVID-19 loan utilization and payments.

For Mobile Asset Finance, we will also look at the reported equipment/assets for which the loan was taken.

#### *Rwanda CBHI*

We will analyze CBHI program data, to the extent available, as related to the use of the DFS payment options. This is to include trends in premium payment by various DFS and other payment options over time, by premium category, location (rural/urban, district, etc), gender, before and during COVID-19 pandemic, etc.

- Number and percent of members who used DFS payment for their last payment - disaggregated by location and premium category as well as gender of household head, as possible
- Historical trend of DFS payment use since introduction - same disaggregations

### 3.3 Data Collection Methods

Qualitative data will be collected by local data collectors and members of the study team listed on the title page of the protocol, who have prior experience conducting qualitative interviews. Nevertheless, data collectors will receive training on the tools and protocol, research ethics, informed consent, confidentiality, data storage, and other standard operating procedures prior to commencing data collection. All data collectors will be required to produce a certificate in data ethics prior to beginning training. All data collection will be conducted in English, except for client-level data which will be conducted, as needed, in Kiswahili and Kinyarwanda in Kenya and Rwanda, respectively. Interviewers will obtain and record written or verbal informed consent prior to starting any data collection. Client/participant/recipient interview guides will be pilot tested; questions will be adapted for clarity as needed prior to conducting interviews.

Interviews will be conducted in person or via telephone or using web conferencing software, considering availability and local COVID-19 guidance at the time of the interviews. KIIs will be 45-60 minutes in length. In order to verify accuracy of notes, all interviews will be recorded. At the end of each interview,

recordings will be transcribed, and translated where applicable. Data will be conducted over a period of four weeks in each country. Appointments will be made in advance to ensure availability.

#### Inclusion criteria for qualitative interviews

- Age 18+
- Provides informed consent
- Meets the relevant criteria described Tables A-I above

#### Exclusion criteria for qualitative interviews

- Does not provide informed consent

### 3.4 Limitations

#### *Qualitative*

In qualitative methods, ‘validity and reliability’ are assessed through credibility, transferability, confirmability and dependability of the data, all of which determine trustworthiness of the findings. As most of the processes outlined above require qualitative interviewing, one issue that may arise is interviewer bias. Interviewers may ask questions in various ways, questions may be leading even if previously scripted in the interview guide (through tone and body language). In addition, in particular, the implementer group may not want to share negative findings, with fear that they may be identified by peers, therefore interviewees may bias their responses to please the interviewer (social desirability bias). To address potential areas of bias, all qualitative interviewers will go through training on how to interview, how to not ask leading questions, the correct ways to probe for an answer, the importance of maintaining neutrality, being non-judgmental, maintaining confidentiality, etc.

#### *Quantitative*

All quantitative data has been collected prior to the project commencing, therefore there is little control on what variables are available for analysis, and no control on how the data was collected.

### 3.5 Data Entry and Analysis

#### *Qualitative data*

All qualitative data will be analyzed inductively and deductively. First, the data analysis team will read through all interviews once to get a general sense of the ideas presented. Some codes will be pre-defined based on the research questions and guides. Data analysts will read through transcripts of interviews, create codes, code the data, and identify emerging themes. 10% of interviews will be double coded to harmonize codes and improve inter-coder reliability. A coded system will be used to highlight themes and concepts during the preliminary analysis. Pre-defined areas centered around the key objectives of this study and key areas of interest will be considered. Each set of notes will receive a unique identifier to provide confidentiality and anonymity.



### *Quantitative data*

As noted in Table 2 Data collection methods and research questions, available secondary program data will complement the qualitative data collected. Analysis of existing program data will be conducted by PharmAccess and RSSB CBHI, for the respective programs. This information is expected to address Research Question 2: How has the program perceived to influence health systems performance? as well as Question 3: What has been the client/beneficiary experience of the program and with regard to: a. financial protection, and b. service demand/utilization.

## **4. PROTECTION OF HUMAN SUBJECTS**

### 4.1 IRB Review

The protocol will be reviewed internally at MSH. It will be separated into two protocols for individual submission to ethics research committees in Kenya and Rwanda for the respective programs of interest.

### 4.2 Risks and Benefits

There are no known risks or direct benefits to participants. Potential risk in participating in an interview due to COVID-19 pandemic will be addressed through strict adherence to local guidance and public health recommendations. Remote (phone/web conferencing platform) interviews will be conducted where feasible. For KIIs conducted in-person, data collectors will follow local public health guidance and best practices including: wearing a mask/facial covering, maintaining physical distance, washing hands/use of sanitizer, as well as conducting the interview outdoors or in a well-ventilated location, as possible. At any point prior to, during or after the interview, interviewers will not make any physical contact with interviewees. The outcome of the research will provide information which may be used by governments, donors, program implementers and/or others in their design, implementation, modification, and/or evaluation of digital financial services for health programs—potentially including by the programs which are the subject of this case study. This study is expected to eventually be of benefit to the entire DFS for health landscape.

### 4.3 Informed Consent Process

Participants will be interviewed only after obtaining documented consent. Participants will be encouraged to ask questions. If there is any indication of pressure put on the participants by others (e.g. medical professional, relative, etc.), the participant will not be enrolled in the study. Due to the nature of the COVID-19 pandemic—including a frequently changing situation as well as government policies—multiple options for data collection are being prepared and considered. In the case of interviews/data collection conducted by phone or web platform call, the consent form will be read aloud to the potential participant. The individual will be encouraged to ask for clarification or repetition if needed, and verbal consent will be requested. The data collector/interviewer will document the response received. For in-person data

collection, consent forms will be signed and dated by the person providing consent and the person obtaining consent. All scanned informed consent forms will be stored on an online drive with restricted access.

Participants will be given as much time as they require to consider the informed consent information, the study and their participation. In the event that the participant requires more time than is allowed by the study, the team will not enroll the participant. In all cases, no time pressure will be put on the participant. If at any time a participant would like to discontinue the interview or decline to respond to a question, there will be no pressure put on the participant to continue. If a participant appears to not understand, or not listen to the information, they will not be enrolled, even if they provide consent.

#### 4.4 Participant Confidentiality

To ensure confidentiality, the full study team including all data collectors will provide certification of research and ethics training. No names or identifying information will be published to ensure confidentiality. Access to data will be strictly maintained by the PI(s). If conducted in-person, the physical space where the interview will be conducted will be far enough away from any other person, so others cannot hear the conversation. For interviews conducted by phone/web platform, participants will be asked to confirm their ability to speak in private. All data collection tools will be stripped of identifiers. Documents will be saved to an internal server, only accessible to key staff. For the qualitative component, all files will have a password. All data submitted to USAID will be deidentified.

#### 4.5 Participant Reimbursement/Incentives

Participants will not be compensated for their time.

## 5. DATA MANAGEMENT

### 5.1 Data Entry

Data from the qualitative interviews will be directly uploaded to an online drive. All files transferred will be password protected to keep the data confidential. Key informant interviews will be appropriately labelled for easy identification.

### 5.2 Data Security

Commitments to ensure confidentiality will be maintained by ensuring that notes from qualitative interviews are anonymized and not shared. Both computers and individual files will use passwords to ensure security.

### 5.3 Data Storage

All recorded information (notebooks, paper tools, audio recordings, etc.) will be stored by data collectors and handed over to the PIs after completing all data collection activities. All hard copies will be safely locked up in a filing cabinet with limited access after data collection activities. Electronic data will be saved on an internal server with a password for safekeeping. At the end of the study, where applicable, data primarily collected by the project (qualitative data) will be stripped of identifying information and shared with USAID to be part of the Data Development Library. Audio data recording files will be destroyed. Only data summaries will be shared with other partners as appropriate. Information in the report will not have person-identifiers to protect confidentiality.

### 5.4 Data Quality

All data collectors will receive training on the data collection tools to be used prior to data collection commencing. Moreover, the data collection tools will be reviewed by individuals with knowledge of the local implementation context in advance to ensure that small adaptations can be made. Quality will be assured through routine monitoring by the PIs through activities such as regular debriefing meetings using a data management checklist and reviewing recordings and transcripts to ensure completeness of the data. There will also be at least weekly feedback meetings with the team to review progress, identify and deal with challenges, and plan for subsequent interviews. MSH has no control on the quality of the data analyzed by PharmAccess. However, indicators with data quality issues will be notated.

### 5.5 Data Ownership

Qualitative data will be owned by MSH. Quantitative data from the i-PUSH M-TIBA and Medical Credit Fund Digital Cash Advance and Medical Asset Finance programs as well as the Rwanda CBHI program will retain their respective ownership. Access to the quantitative data and analysis is restricted to the purpose of this study.

## 6. DISSEMINATION PLAN

The results will be compiled in the final report. The detailed report will describe the context, methodology, findings, and conclusions of the two programmatic case studies. The report will be made publicly available, and will be specifically shared with the stakeholders who participate in the process in Kenya and Rwanda. It is expected to be disseminated through MSH and Digital Square/PATH social media channels, as well as distributed to relevant digital health and digital financial services listservs. MSH and/or PATH staff members may participate in appropriate conferences or other meetings to present the findings. USAID may also choose to disseminate the report and results through USAID internal and external communication channels. The report may be referenced by the global DFS for health landscaping report under development concurrently by a separate program.

## 7. MANAGEMENT PLAN

Key roles and responsibilities are described in (Table 4).

**Table 4: Roles and Responsibilities**

Role	Responsibility
Management Sciences for Health	Project management (Project Director) and responsible for technical design, implementation, analysis, report development and dissemination. Manages subaward and data collection agreements.
Principal Investigators	Lead and contribute to technical design, implementation, analysis, report development and dissemination.
PharmAccess	Contribute to the design, protocol, tool development and IRB requirements of the i-PUSH and MCF Digital Cash Advance programmatic case study in Kenya. Facilitating collaboration with key stakeholders in Kenya, including PharmAccess Kenya, CarePay, providers and public health stakeholders. Access and analyze existing program data. Analysis and report results sections creation for inclusion in the draft and final full document and review of full programmatic case study.
Data collectors	Provides translation of KII guides to Kiswahili/Kinyarwanda where needed. Supports location of KII participants according to protocol design. Conducts KIIs with beneficiaries either virtually/by phone and/or in-person. Documents and shares KII detailed notes
PATH	Receives deliverables and provides technical feedback within the agreed timelines. Coordinates with PATH human subjects research committee.
USAID	Provides technical feedback on draft deliverables within the agreed timelines. Facilitates technical coordination with related global study implemented by Abt Associates team. Provides timely approval when needed.

## 8. TIMELINE

The expected timeline for the full study is provided below.

#	Activity	Responsible Party	Month Week	Implementation Timeline																																		
				June				July				Aug				Sept				Oct				Nov				Dec				Jan						
				1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4			
<b>Contracting</b>																																						
1	MSH initiate with PATH-Digital Square	PATH - MSH			X																																	
2	MSH subcontract to PharmAccess	MSH			X	X	X																															
<b>Workplan development</b>																																						
3	Development of draft project workplan Virtual meeting on workplan and project	MSH w/ PATH			X	X	X	X																														
4	planning	PATH w/ MSH and USAID						X																														
5	Review of the project workplan	PATH and USAID						X																														
6	Finalization of workplan	MSH						X																														
<b>Protocol development and planning</b>																																						
7	Gathering and review of literature on DFS case studies and development of process evaluation framework	MSH with PharmAccess						X	X	X	X	X																										
8	Engagement with stakeholders in Kenya and Rwanda on buy-in, data sharing, and data collection planning.	MSH with PharmAccess						X	X	X	X	X																										
9	Initial review of available data and resources of country case study programs	MSH with PharmAccess								X	X	X	X																									
10	Development of draft protocol PATH confirmation of human subjects	MSH with PharmAccess					X	X	X	X	X																											
11	research/IRB process	PATH w/ MSH						X	X																													
12	Review of protocol	PATH and USAID								X																												
13	Protocol discussion	PATH w/ MSH and USAID								X																												
14	Development of data collection tools	MSH with PharmAccess								X	X																											
15	Finalization of full protocol including final data collection instruments	MSH, PATH and USAID review									X	X																										
<b>IRB Submission and Approval</b>																																						
16	IRB submission (expected to submit separately in Kenya and Rwanda) **	MSH											X																									
17	IRB approval processing and receipt	IRB(s)											X	TBD	X																							
<b>Primary Data Collection, Secondary Data Analysis</b>																																						
18	Data collection planning, local consultant contracting and onboarding, as needed Compilation and analysis of existing M-TIBA i-PUSH and Medical Credit Fund	MSH											X	X	X	X																						
19	program data	PharmAccess												X	X																							
20	Review of PharmAccess analysis Revision of M-TIBA program data results as needed	MSH													X	X																						
21	M-TIBA program case data collection (following IRB approval)	MSH, PharmAccess remote support													X	X	X	X																				
22	CBHI program case data collection (following IRB approval)	MSH													X	X	X	X																				
23	Analysis of quantitative and qualitative data, report drafted	MSH with PharmAccess																																				
24	Draft results discussion Global Digital Health Forum panel (TBC)	PATH w/ MSH and USAID																																				
25	with initial preresults	MSH																																				
26	Review and feedback provided	PATH and USAID																																				
27	Webinar dissemination, HSR2020 (TBC)	MSH and USAID																																				
28	Report finalized and delivered	MSH																																				
29	Project close	MSH and PATH																																				
30																																						

\*\*Note, timeline is dependent on assumptions including: stakeholder engagement; timely receipt of IRB approval(s); timely receipt of draft document review; and in consideration of COVID-19 response in data collection scheduling. Adjustments to the timeline will be required if these assumptions or other factors outside the control of the Subrecipient change.



21<sup>st</sup> January 2021

Ms Haas, Sherri  
shaas@msh.org

Dear Ms Haas,

**RE: Digital Financial Services for Health - Programmatic Case Study**


This is to inform you that SU-IERC has reviewed and **approved** your above research proposal. Your application reference number is **SU-IERC0934/20**. The approval period is **21<sup>st</sup> January 2021 to 20<sup>th</sup> January 2022**.

This approval is subject to compliance with the following requirements:

- i. Only approved documents including (informed consents, study instruments, MTA) will be used
- ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-IERC.
- iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-IERC within 48 hours of notification
- iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-IERC within 48 hours
- v. Clearance for export of biological specimens must be obtained from relevant institutions.
- vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
- vii. Submission of an executive summary report within 90 days upon completion of the study to SU-IERC.

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) <https://oris.nacosti.go.ke> and also obtain other clearances needed.

Yours sincerely,

  
for: Dr Virginia Gichuru,  
**Secretary; SU-IERC**

**Cc: Prof Fred Were,**  
**Chairperson; SU-IERC**



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# REPUBLIC OF RWANDA/REPUBLIQUE DU RWANDA



## NATIONAL ETHICS COMMITTEE / COMITE NATIONAL D'ETHIQUE

Telephone: (250) 2 55 10 78 84

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Web site: [www.rncrwanda.org](http://www.rncrwanda.org)

Ministry of Health

P.O. Box. 84

Kigali, Rwanda.

FWA Assurance No. 00001973  
IRB 00001497 of IORG0001100

December 11, 2020  
No.1012/RNEC/2020

Principal Investigators (Rwanda):

- Sherri Haas, MPP, Senior Technical Advisor, Management Sciences for Health
- Regis Hitimana, PhD, Deputy Director General in Charge of Benefits, Rwanda Social Security Board

Your research project:

**Digital Financial Services for Health: Programmatic Case Study - Rwanda** has been evaluated by the Rwanda National Ethics committee.

Name	Institute	Involved in the decision		
		Yes	No (Reason)	
			Absent	Withdrawn from the proceeding
Dr. Jean-Baptiste MAZARATI	Biomedical Services (BIOS)	X		
Prof. Jean Paul RWABIHAMA	University of Rwanda	X		
Prof. Laetitia NYIRAZINYOYE	University of Rwanda	X		
Ass. Prof. Egide KAYITARE	University of Rwanda	X		
Mr. Spencer BUGINGO	Lawyer	X		
Ass. Prof. David K. TUMUSIIME	University of Rwanda	X		
Ass. Prof. Lisine TUYISENGE	Kigali Teaching Hospital	X		
Dr. Darius GISHOMA	University of Rwanda	X		
Sr. Epiphane MUKABARANGA	Rwamagana Nursing and Midwife school		X	
Dr. Vedaste NDAHINDWA	University of Rwanda	X		
Prof. Claude MUVUNYI	Biomedical Services (BIOS)	X		

After review of the protocol and consent forms, during the RNEC meeting of 16 October 2020 where quorum was met, and revisions made on the advice of the RNEC submitted on 25<sup>th</sup> November 2020, we hereby provide approval for the above-mentioned protocol.

Please note that approval of the protocol and consent form both English and Kinyarwanda version is valid for 12 months.

You are responsible for fulfilling the following requirements:

1. Changes, amendments, and addenda to the protocol or consent form must be submitted to the committee for review and approval, prior to activation of the changes.
2. Only approved consent forms are to be used in the enrollment of participants
3. All consent forms signed by subjects should be retained on file. The RNEC may conduct audits of all study records, and consent documentation may be part of such audits.
4. A continuing review application must be submitted to the RNEC in a timely fashion and before expiry of this approval.
5. Failure to submit a continuing review application will result in termination of the study.
6. Notify the Rwanda National Ethics committee once the study is completed.

Sincerely,

*PO SR Velesito Ndehindwa*  
*Chair*  
  


Date of Approval: December 11, 2020

Expiration date: December 10, 2021

Dr. Jean- Baptiste MAZARATI  
Chairperson, Rwanda National Ethics Committee.

C.C.

- Hon. Minister of Health.

- The Permanent Secretary, Ministry of Health.



## Rwanda Community-Based Health Insurance (CBHI) Digital Payments and 3MS KII Guides

### Introduction

#### **Interviewer's welcome, introduction and instructions to participants**

Welcome and thank you for volunteering to take part in this in-depth interview. My name is \_\_\_\_\_, and I am conducting this interview on behalf of MSH to learn more about the role of digital financial service programs in patients' access to health services and in improving health systems. You have been asked to participate, as your point of view is important. Participating is voluntary. I know you are busy and I appreciate your time.

**Introduction:** This is an in-depth interview to learn more about the digital payment-enabled aspects of the community-based health insurance (CBHI) program in Rwanda, also known as *Mutuelle de Santé*. We would like to get your thoughts so that we can analyze implementation considerations and program components that will inform future programming. The interview will last for about 45 – 60 minutes.

[For interviews conducted in-person] I will share with you an informed consent form for you to sign.

[For interviews conducted by phone/virtually] I will read a consent form and record in notes your response regarding consent to participate.

#### **[Provide or read consent form]**

### 3.) KIs National and District CBHI Managers

#### SCREENING QUESTIONS:

- Do you work at the District or National level? (District/National)
- If District: Is your district urban or rural? (Urban/Rural)

#### [Introduction per above]

#### *SECURE INFORMED CONSENT*

Before we start, do you have any questions for me?

Date: \_\_\_\_\_

Time interview started: \_\_\_\_\_

Time ended: \_\_\_\_\_

Interviewer/data collector: \_\_\_\_\_

Respondent gender:  Male  Female

Do you work at the District or National level?  District  National

If District: Is your district urban or rural?  Urban  Rural

Number of years serving as a CBHI manager: \_\_\_\_\_

We would like to learn more about your experience implementing the digital aspects of Rwanda's community-based health insurance (CBHI) program, including integrating the digital financial payments and 3MS. We hope to gather important considerations in creating and implementing the work, as well as program lessons to date, for others who may be interested in doing something similar. We are interviewing CBHI implementers, including District and National CBHI managers, 3MS developers, and Irembo, as well as CBHI clients.

1. What was the process for implementing the Mutuelle Membership Management System (3MS) and integrated digital financial payments for CBHI?
  - a. (Probe) What is your role in the process?
  - b. (Probe) What staff were/are involved with implementation?
  - c. (Probe) What were/are the major activities for implementation?

We would like to ask you about how incorporating 3MS and digital financial payment options into the CBHI program may influence the way the health system works, including aspects such as health service quality and efficiency. We are also interested in learning how it may influence users access to health services and their health-related financial expenses.

2. What were the primary effects expected in incorporating 3MS and digital financial payment for CBHI?
  - a. (Probe) How did you expect the digital system and payment options to influence the management of the health system?
  - b. (Probe) How did you expect the digital system and payment options to influence provision of health care?

- c. (Probe) How did you expect it to influence the user or patient experience?
- 3. What impacts have you perceived on clients as a result of 3MS and incorporating digital payment options into CBHI?
  - a. (Probe) What changes have you seen on client satisfaction with CBHI?
  - b. (Probe) What changes have you seen on clients' ability to pay for health care?
  - c. (Probe) What changes have you seen on clients' utilization of health services?
- 4. What impacts have you perceived on health facilities as a result of 3MSH and incorporating digital payment options into CBHI?
  - a. (Probe) What changes have you seen in the quality of the health services?
  - b. (Probe) What changes have you seen in responsiveness of the providers?
  - c. (Probe) What changes have you seen in the management of facilities?

Next, we would like to ask about the implementation and program adaptation of 3MS and digital payment options into CBHI.

- 5. What were/are the positive factors that contributed to the implementation of digital payments for CBHI?
  - a. (Probe) What were the human resources that positively contributed to the implementation of CBHI?
  - b. (Probe) What processes positively contributed to the implementation?
  - c. (Probe) What technologies positively contributed to the implementation?
- 6. What were/are the challenges to implementing 3MS and digital payments for CBHI?
  - a. (Probe) In what aspects of implementation did it struggle?
  - b. (Probe) Why did the implementation struggle in those areas?
  - c. (Probe) What processes hindered the implementation?
- 7. How were/are the challenges to implementing digital payments for CBHI addressed?
  - a. (Probe) What actions were taken to remove the challenges to implementation?
- 8. Aside from what you have just mentioned, were there any other changes incorporated into payment options for Rwanda's CBHI program?
  - a. (Probe) How is it assessed for changes?
  - b. (Probe) What information was/is used to inform changes?
  - c. (Probe) Are there any further changes planned?
- 9. How do you think the implementation process can improve?
  - a. (Probe) What resources are needed to improve the process?

Lastly, we would like to ask you about implementation of 3MS and digital payments for CBHI during the COVID-19 pandemic.

- 10. What effects have been experienced in implementing 3MS and digital payments for CBHI, as a result of the COVID-19 pandemic?
  - a. (Probe) What processes have been affected by the pandemic?
  - b. (Probe) How has the pandemic affected staff involved with implementation?

11. What changes have been made to the program, given the COVID-19 pandemic?
  - a. (Probe) How were/are the changes implemented?
  
12. We are at the end of the interview. Do you have any additional information you would like to share?

#### 4.) Kills CBHI clients (Digital payments users)

##### SCREENING QUESTIONS:

- Are you a member of Rwanda's community-based health insurance (CBHI)? (Yes/No)
- Do you use a digital payment service like Irembo, Mobicash, or mobile money to pay for your premium under CBHI? (Yes/No)  
*If answer is YES, proceed with this interview guide.*  
*If answer is NO, proceed to the interview guide for non-DFS users*

#### [Introduction per above]

#### SECURE INFORMED CONSENT

Before we start, do you have any questions for me?

Date: \_\_\_\_\_

Time interview started: \_\_\_\_\_

Time ended: \_\_\_\_\_

Interviewer/data collector: \_\_\_\_\_

Respondent gender:  Male  Female

Do you live in an urban area or a rural area?  Urban  Rural

Number of years serving as a CBHI client: \_\_\_\_\_

We would like to learn more about your experience with using digital financial payment systems like Irembo, Mobicash, and the mobile money systems as a community-based health insurance client. We hope to learn about implementing this type of system, for others who may be interested in doing something similar. We are also interested in learning how it may influence how users access healthcare services and their health-related financial expenses.

1. What is your experience with Rwanda's community-based health insurance (CBHI) program?
  - a. (Probe) How have you participated in the CBHI program?
2. How do you make payments under CBHI?
  - a. (Probe) What mobile money systems have you used?
  - b. (Probe) Have you used Irembo?
  - c. (Probe) Have you used Mobicash?
3. Why did you choose that payment method?
  - a. (Probe) Where did you hear about it?
  - b. (Probe) Who or what helped you get started using it?
4. Can you walk me through the last time you made a payment under CBHI?
  - a. (Probe) For the payment method that you use, what is the process for you to make a payment under CBHI?
  - b. (Probe) Did you have any challenges making the payment?
5. How do the mobile payment options for CBHI impact your ability to afford health care services?
  - a. (Probe) How have mobile options affected the time it takes to access services through CBHI?

6. What influence does the mobile payments system for CBHI have on your use of healthcare services?
  - a. (Probe) What has been your experience with the mobile system when accessing health services?
  - b. (Probe) How has it changed the quality or responsiveness of healthcare services?
  - c. (Probe) How has it influenced your satisfaction as a client?
  - d. (Probe) How has it influenced your seeking healthcare services?
7. What do you like about participating in CBHI?
  - a. (Probe) What do you like about using digital payment systems?
  - b. (Probe) What are some of the strengths of the CBHI program?
  - c. (Probe) Why would you recommend the CBHI program to others?
8. When you make digital payments for CBHI, what is difficult?
  - a. (Probe) How do you address the difficulties?
  - b. (Probe) Are there other challenges in using the CBHI program?
9. This year, many countries have been affected by the COVID-19 pandemic. How has the COVID-19 pandemic affected your participation in the CBHI program and use of digital payments for health?
  - a. (Probe) How have you adjusted your use of digital payments since the pandemic started?
  - b. (Probe) How has the pandemic affected your access to healthcare through CBHI?
  - c. (Probe) How has the pandemic affected your ability to afford healthcare while in the CBHI?
10. We are at the end of the interview. Do you have any additional information you would like to share?

## 5.) Kills CBHI clients (non-digital payment users)

### SCREENING QUESTIONS:

- Are you a member of Rwanda's community-based health insurance (CBHI)? (Yes/No)
- Do you use a digital payment service like Irembo, Mobicash, or mobile money to pay for your premium under CBHI? (Yes/No)  
*If answer is NO, proceed with this interview guide.*  
*If answer is YES, proceed to the interview guide for DFS users*

### [Introduction per above]

### SECURE INFORMED CONSENT

Before we start, do you have any questions for me?

Date: \_\_\_\_\_

Time interview started: \_\_\_\_\_

Time ended: \_\_\_\_\_

Interviewer/data collector: \_\_\_\_\_

Respondent gender:  Male  Female

Do you live in an urban area or a rural area?  Urban  Rural

Number of years serving as a CBHI client: \_\_\_\_\_

We would like to learn more about your experience participating in Rwanda's community-based health insurance, and in particular the process for paying premiums. We hope to learn about implementing this type of system, for others who may be interested in doing something similar

1. What is your experience with the community-based health insurance (CBHI) program?
  - a. (Probe) How long have you participated?
2. How do you make payments for CBHI?
  - a. (Probe) Which steps do you take to make CBHI premium payments?
  - b. (Probe) How has this changed over time?
3. Can you walk me through the last time you made a payment under CBHI?
  - a. (Probe) For the payment method that you use, what is the process for you to make a payment under CBHI?
  - b. (Probe) Did you have any challenges making the payment?
4. Why did you choose that payment method?
  - a. (Probe) Were/Are you aware of other ways of making CBHI payments?
5. What do you know about using digital or mobile payments for CBHI premiums?
  - a. (Probe) What are the challenges to using digital payments for CBHI?
  - b. (Probe) What are the benefits of using digital payments?
  - c. (Probe) Why do you not use a mobile payment option?
6. What do you like about participating in CBHI?
  - a. (Probe) What are some of the strengths of the CBHI program?
  - b. (Probe) Why would you recommend the CBHI program to others?
7. When you make payments under the CBHI program, what is difficult?
  - a. (Probe) How do you address the difficulties?

- b. (Probe) Are there other challenges in using the CBHI program?
- 8. This year, many countries have been affected by the COVID-19 pandemic. How has the COVID-19 pandemic affected your participation in the CBHI program and premium payments?
  - a. (Probe) How has the pandemic affected your clinic visits in the CBHI program?
  - b. (Probe) How has the pandemic affected your ability to afford health care while in the CBHI program?
  
- 9. We are at the end of the interview. Do you have any additional information you would like to share?



## 6.) KIs Participating facilities (public and private facilities)

Confirmation Questions:

- Is your facility a public or private health facility? (Public/Private)
- Is your facility a health center or a hospital? (Health Center/Hospital)

[Introduction per above]

### *SECURE INFORMED CONSENT*

Before we start, do you have any questions for me?

Date: \_\_\_\_\_

Time interview started: \_\_\_\_\_

Time ended: \_\_\_\_\_

Interviewer/data collector: \_\_\_\_\_

Respondent gender:  Male  Female

Is your facility a public or private health facility?  Public  Private

Is your facility a health center, hospital, health post, or telehealth ?  Health Center  Hospital  Health post  Telehealth

Number of years serving as a CBHI facility participant: \_\_\_\_\_

We would like to learn more about your experience participating in Rwanda's community-based health insurance (CBHI) program, in particular the 3MS system and digital financial payments. We hope to gather important considerations in creating and implementing the work, as well as program lessons to date, for others who may be interested in doing something similar.

1. What is your facility's experience with participating in utilizing the 3MS and digital financial payments system for CBHI?
  - a. (Probe) What is the process you use to accept CBHI?
  - b. (Probe) What is the process for someone using/paying under CBHI?

We would like to ask you about how incorporating digital financial payment options into the CBHI program may influence the way the health system works, including aspects such as health service quality and efficiency. We are also interested in learning how it may influence users access to health services and their health-related financial expenses.

2. What impacts have you perceived on your facility's clients as a result of incorporating 3MS and digital payment options into CBHI?
  - a. (Probe) What changes have you seen on client satisfaction?
  - b. (Probe) What changes have you seen on clients' ability to pay for health care?
  - c. (Probe) What changes have you seen on clients' demand for health services?
3. What impacts have you perceived on your health facility as a result of incorporating 3MS and mobile payments in CBHI?
  - a. (Probe) What changes have you seen in the quality of the health services?

- b. (Probe) What changes have you seen in your facility's ability to be responsive to clients?
- c. (Probe) What changes have you seen in facility or system management?

Next, we would like to ask about the implementation and program adaptation of 3MS and mobile payment options into CBHI.

4. What were/are the positive factors that contributed to the implementation of 3MS and mobile payment options in CBHI?
  - a. (Probe) What were the staff or roles that positively contributed to the implementation?
  - b. (Probe) What processes positively contributed to the implementation?
  - c. (Probe) What technologies positively contributed to the implementation?
5. What were/are the challenges to implementing 3MS and mobile payment options CBHI?
  - a. (Probe) In what aspects of implementation has it struggled and why?
  - b. (Probe) What processes hindered the implementation of mobile payment options?
  - c. (Probe) Were there technological challenges to implementing DFS payment options?
6. How were/are the challenges to implementing 3MS and mobile payment options for CBHI addressed?
  - a. (Probe) What actions were taken to remove the barriers to implementation?
  - b. (Probe) What human resources were responsible for finding solutions to the challenges in implementation?
7. How do you think the implementation process can improve?
  - a. (Probe) What resources are needed to improve the process?
  - b. (Probe) How is your facility involved in informing changes?

Lastly, we would like to ask you about implementing mobile payment options for CBHI during the COVID-19 pandemic.

8. What effects have been experienced by your facility in implementing mobile payment options for CBHI, as a result of the COVID-19 pandemic?
  - a. (Probe) How else does your facility utilize mobile payments in the pandemic?
  - b. (Probe) What processes have been affected by the pandemic?
9. What effects have you observed which your clients have experienced in paying for and utilizing CBHI, given the COVID-19 pandemic?
10. We are at the end of the interview. Do you have any additional information you would like to share?

## Kenya i-PUSH KII Guides

### Introduction

#### **Interviewer's welcome, introduction and instructions to participants**

Welcome and thank you for volunteering to take part in this in-depth interview. My name is \_\_\_\_\_, and I am conducting this interview on behalf of MSH to learn more about the role of digitization and digital financial service programs in patients' access to health services and in improving health systems. You have been asked to participate, as your point of view is important. Participating is voluntary. I know you are busy and I appreciate your time.

**Introduction:** This in-depth interview is designed to learn more about the M-TIBA-enabled i-PUSH program in Kenya which includes facilitating enrollment in the National Hospital Insurance Fund (NHIF). We would like to get your thoughts so that we can analyze implementation considerations and program components that may inform future programming. The interview will last for about 45 – 60 minutes.

[For interviews conducted in-person] I will share with you an informed consent form for you to sign.

[For interviews conducted by phone/virtually] I will record in my notes your response regarding consent to participate.

**[Provide or read consent form]**

## Kenya i-PUSH M-TIBA KII Guides

### 1.) KII CarePay/PharmAccess

#### [Introduction per above]

Before we start, do you have any questions for me?

Date: \_\_\_\_\_

Time interview started: \_\_\_\_\_

Time ended: \_\_\_\_\_

Interviewer/data collector: \_\_\_\_\_

Respondent gender:  Male  Female

Which do you work for?  CarePay  PharmAccess

Number of years working for CarePay/PharmAccess: \_\_\_\_\_

Number of years working on i-PUSH program: \_\_\_\_\_

We would like to learn more about your experience with the development and implementation of the i-PUSH program, and in particular the integration of digital and mobile money systems through the M-TIBA platform. We hope to gather important considerations in creating and implementing the work, as well as program lessons to date, for others who may be interested in doing something similar.

1. What was the process for developing the i-PUSH program?
  - a. (Probe) What human resources were involved with developing the i-PUSH program?
  - b. (Probe) What were the major activities for developing the i-PUSH program?
  - c. (Probe) What was the timeline for developing the i-PUSH program?
2. The i-PUSH program contains multiple digital and digital financial services aspects. What considerations did you take to integrate these aspects of the program?
  - a. (Probe) What goals did you have in mind when designing the digital aspects of the program?

We would like to ask you about how the integration of digital and digital financial services aspects of the i-PUSH program influence the way the health system works, considering aspects such as health service quality and system efficiency. We are also interested in learning how it may influence users' access to health services and their health-related financial expenses.

3. What were the primary effects expected in integrating digital and digital financial service systems in the i-PUSH program?
  - a. (Probe) How did you expect i-PUSH to influence the management of health care?
  - b. (Probe) How did you expect i-PUSH to influence the user or client experience?
4. What was the process for enrolling participants into the i-PUSH program?

- a. (Probe) What is the community health workers' role in enrolling participants?
  - b. (Probe) How are participants recruited?
  - c. (Prob) How does this differ from the standard way individuals enroll in NHIF?
5. What impacts have you perceived on clients/users as a result of the i-PUSH program and from which aspects of the program?
    - a. (Probe) What changes have you seen in user satisfaction?
    - b. (Probe) What changes have you seen in clients' ability to pay for health care?
    - c. (Probe) What changes have you seen in clients' access to health services?
  6. What impacts have you perceived on provision of health services as a result of the i-PUSH program and from which aspects of the program?
    - a. (Probe) What changes have you seen in the quality and responsiveness of the health services?
    - b. (Probe) Who uses the data generated by the i-PUSH program for health service management?
    - c. (Probe) What changes have you seen in the management of health services, as it relates to i-PUSH?
  7. What impacts have you perceived on health facilities as a result of the SafeCare quality improvement process through the M-TIBA platform?
    - a. (Probe) How has the quality of health services changed since implementing SafeCare standards?

Next, we would like to ask about the implementation and program adaptation of the i-PUSH program.

8. What were/are the positive factors that contributed to implementation of the i-PUSH program?
  - a. (Probe) What human resources positively contributed to the implementation of the i-PUSH program?
  - b. (Probe) What processes positively contributed to the implementation?
  - c. (Probe) What technology efforts positively contributed to implementation?
9. What were/are the challenges to implementing the digital and digital financial services aspects of the i-PUSH program?
  - a. (Probe) In what aspects of implementation did the i-PUSH program struggle?
  - b. (Probe) What processes hindered the implementation of the i-PUSH program?
10. How were/are the challenges to implementing the i-PUSH program addressed?
  - a. (Probe) What actions were taken to remove the challenges to implementation?
11. Aside from what you have just mentioned, were there any other changes incorporated into the i-PUSH program during its implementation?
  - a. (Probe) How is the i-PUSH program assessed for needed changes?
  - b. (Probe) Are there any further changes planned?

We would like to ask you about implementing the i-PUSH program during the COVID-19 pandemic.

12. What effects have been experienced in implementing i-PUSH, as a result of the COVID-19 pandemic?
  - a. (Probe) What processes have been affected by the pandemic?
  - b. (Probe) How has the pandemic affected staff involved with implementation?
  - c. (Probe) What changes have been made to i-PUSH, given the COVID-19 pandemic?

Lastly, we would like to ask you about the potential role of digital systems and digital financial services in achieving universal health coverage (UHC).

13. Looking forward, what is your perception of the role of systems like i-PUSH and the M-TIBA platform in universal health coverage (UHC)?
  - a. (Probe) How do you think digital systems and digital financial services will impact the achievement of UHC?
  - b. (Probe) How do you think the data and information generated from digital and digital financial service systems can affect the management of health systems?

14. We are at the end of the interview. Do you have any additional information you would like to share?

## 2.) Kils National Hospital Insurance Fund (NHIF)

### SCREENING QUESTIONS:

- How long have you been working for the NHIF? \_\_\_\_\_
- Are you familiar with the i-PUSH program? (Yes/No) [If unfamiliar, end interview]

### [Introduction per above]

Before we start, do you have any questions for me?

Date: \_\_\_\_\_

Time interview started: \_\_\_\_\_

Time ended: \_\_\_\_\_

Interviewer/data collector: \_\_\_\_\_

Respondent gender:  Male  Female

Number of years working for NHIF: \_\_\_\_\_

We would like to learn more about your experience with the development and implementation of the i-PUSH program, in particular the integration of digital and mobile money systems through the M-TIBA platform. We hope to gather important considerations in creating and implementing the work, as well as program lessons to date, for others who may be interested in doing something similar. We're also speaking with CarePay and PharmAccess regarding i-PUSH program implementation.

1. What was NHIF's engagement in the development of the i-PUSH program?
  - a. (Probe) What human resources were involved with developing the i-PUSH program?
  - b. (Probe) What were the major activities for developing the i-PUSH program?
  - c. (Probe) What was the timeline for developing the i-PUSH program?
2. What were the primary effects expected by NHIF in the implementation of the i-PUSH program?
  - a. (Probe) How did you expect the integration of digital systems and mobile money in the i-PUSH program to influence the management of the health system?
  - b. (Probe) How did you expect the digital and mobile money aspects of i-PUSH to influence the provision of health care?
  - c. (Probe) How did you expect it to influence the client experience?

We would like to ask you about how the integration of digital and digital financial services aspects of the i-PUSH program influence the provision of health care, considering aspects such as health service quality and system efficiency. We are also interested in learning how it may influence users' access to health services and their health-related financial expenses.

3. What impacts have you perceived as a result of the i-PUSH program?
  - a. (Probe) How has NHIF utilized the i-PUSH program or the information it generates?
  - b. (Probe) What changes do you see on how clients access and afford health services?

- c. (Probe) What changes do you see on the health facilities and the quality of care?

Next, we would like to ask about the implementation and program adaptation of the i-PUSH program.

4. What was the process for enrolling participants into NHIF through the i-PUSH program?
  - a. (Probe) How does this differ from the standard NHIF enrollment process?
  - b. (Probe) What benefits have you seen to enrollment through the i-PUSH program?
5. What were/are the positive factors that contributed to implementation of the i-PUSH program?
  - a. (Probe) What human resources, processes, and/or technology efforts positively contributed to the implementation of the i-PUSH program?
6. What were/are the challenges to implementing the i-PUSH program?
  - a. (Probe) In what aspects of implementation did the i-PUSH program struggle?
  - b. How were/are the challenges addressed?
7. How do you think the implementation process of i-PUSH can improve as it relates to NHIF?
  - a. (Probe) What resources are needed to improve the process?

We would like to ask you about implementing the i-PUSH program during the COVID-19 pandemic.

8. What effects have been experienced in implementing i-PUSH, as a result of the COVID-19 pandemic?
  - a. (Probe) How has the pandemic affected staff involved with implementation?

Lastly, we would like to ask you about the potential role of digital systems and digital financial services in achieving universal health coverage (UHC).

9. Looking forward, what is your perception of the role of systems like i-PUSH and the M-TIBA platform in universal health coverage (UHC)?
  - a. (Probe) How do you think digital systems and digital financial services will impact the achievement of UHC?
  - b. (Probe) How do you think the data and information generated from digital and digital financial service systems can affect the management of health systems?
10. We are at the end of the interview. Do you have any additional information you would like to share?



### 3.) Klls i-PUSH Participating Facilities

#### SCREENING QUESTIONS:

- Does your health facility enter data into the i-PUSH program? (Yes/No)

#### [Introduction per above]

Before we start, do you have any questions for me?

Date: \_\_\_\_\_

Time interview started: \_\_\_\_\_

Time ended: \_\_\_\_\_

Interviewer/data collector: \_\_\_\_\_

Respondent gender:  Male  Female

Number of years participating in i-PUSH: \_\_\_\_\_

Facility Level:  Primary  Secondary

We would like to learn about how your facility is participating in the i-PUSH program.

1. What was/is your facility's experience with participating in the i-PUSH program?
  - a. (Probe) What is the process you use to engage with i-PUSH?
  - b. (Probe) What is the process for someone using/paying with i-PUSH M-TIBA?

Next, we would like to ask you about how the integration of digital and mobile money systems in the i-PUSH program may influence the provision of health care, including aspects such as health service quality and efficiency. We are also interested in learning how it may influence users access to health services and their health-related financial expenses.

2. What were the primary effects ~~did~~ your facility expected from the integration of digital systems and mobile money systems in the i-PUSH program?
  - a. (Probe) How did you expect it to influence your facility management?
  - b. (Probe) How did you expect the digital and mobile money aspects to influence provision of health care?
  - c. (Probe) How did you expect it to influence the clients' experience?
3. What impacts have you perceived on your clients or patients as a result of the i-PUSH program?
  - a. (Probe) What changes have you seen on client satisfaction?
  - b. (Probe) What changes have you seen on clients' ability to pay for health care?
  - c. (Probe) What changes have you seen on clients' utilization for health services?
4. What impacts have you perceived in your health facility as a result of the integration of digital systems and mobile money systems in the i-PUSH program?
  - a. (Probe) What changes have you seen in the quality of the health services?
  - b. (Probe) What changes have you seen in your facility's ability to be responsive to clients?

- c. (Probe) What changes have you seen in facility or system management, as it relates to i-PUSH?
5. Did your facility enroll into the SafeCare program? (If no, skip to question 7)
  6. What impacts have you perceived on your health facility as a result of the SafeCare quality improvement process?
    - a. (Probe) What has been your facility's process with SafeCare?
    - b. (Probe) How has the quality of your health services changed since implementing SafeCare?

We would like to learn more about your facility's experience with the development and implementation of i-PUSH, in particular the digital aspects of the program. We hope to learn about implementing this type of system, for others who may be interested in doing something similar. We are also interested in learning how it may influence how users access healthcare services and their health-related financial expenses. We are also interviewing i-PUSH program implementers, the National Hospital Insurance Fund (NHIF), and some i-PUSH participants.

7. What were/are the positive factors that contributed to implementation of the i-PUSH program?
  - a. (Probe) What human resources positively contributed to the implementation of the i-PUSH program?
  - b. (Probe) What processes positively contributed to the implementation?
  - c. (Probe) What technological efforts positively contributed to implementation?
8. What were/are the challenges to implementation of i-PUSH?
  - a. (Probe) In what aspects of implementation did the i-PUSH program struggle?
  - b. (Probe) Why did the implementation struggle in those areas?
9. How were/are the challenges to implementing the i-PUSH program addressed?
  - a. (Probe) What actions were taken to remove the challenges to implementation?
10. How do you think i-PUSH and its implementation can improve?
  - a. (Probe) What would be needed to improve the i-PUSH?
11. Looking forward, what is your perception of the role of systems like i-PUSH and the M-TIBA platform in improving the provision of health care and increasing patients' affordable access to health services?
  - a. (Probe) How do you think digital systems and digital financial services can impact access to quality health care?
12. We are at the end of the interview. Do you have any additional information you would like to share?

#### 4.) Klls i-PUSH Participants

##### SCREENING QUESTIONS:

- Did you use health services through i-PUSH in the first year of membership?  
(Yes/No)
- Did you renew your membership in the i-PUSH program for a second year?  
(Yes/No)

##### [Introduction per above]

Before we start, do you have any questions for me?

Date: \_\_\_\_\_

Time interview started: \_\_\_\_\_

Time ended: \_\_\_\_\_

Interviewer/data collector: \_\_\_\_\_

Respondent gender:  Male  Female

i-PUSH participant:  Renewed after 1st year  Did not review after 1st year

We would like to learn more about your experience with the i-PUSH program, which is the program that enrolled you in the National Hospital Insurance Fund (NHIF). In particular, we're interested in learning about your experience with the digital and mobile aspects of the system including the M-TIBA platform. We hope to learn about implementing this type of system, for others who may be interested in doing similar programs. We are also interested in learning how it may influence how users access healthcare services and their health-related financial expenses.

1. How did you join i-PUSH?
  - a. (Probe) Where and when did you hear about i-PUSH?
  - b. (Probe) Who or what helped you get started using i-PUSH?
  - c. (Probe) What were the steps to enrolling into i-PUSH?
2. Can you walk me through the last time you or your enrolled family members used i-PUSH for health care services?
  - a. (Probe) How do you use i-PUSH?
  - b. (Probe) Did you have any challenges?
3. How did being part of i-PUSH (which enrolled you in NHIF) influence your use of health services?
  - a. (Probe) How has your knowledge of health services available changed since using i-PUSH?
  - b. (Probe) How has i-PUSH affected your access to health services?
4. How has i-PUSH impacted your ability to afford health care services?
  - a. (Probe) How has i-PUSH affected your financial situation?
  - b. (Probe) How has i-PUSH affected your ability to pay for health services?
5. What influence does the digital and mobile aspects of i-PUSH have on your use of healthcare services?
  - a. (Probe) What has been your experience with the mobile system when accessing health services?
  - b. (Probe) How has it changed the quality or responsiveness of healthcare services?
  - c. (Probe) How has it influenced your satisfaction as a client?

- d. (Probe) How has it influenced your seeking healthcare services?
- 6. What do you like about i-PUSH?
  - a. (Probe) What are some of the strengths of using the digital and mobile aspects of i-PUSH?
  - b. (Probe) Why would you recommend i-PUSH to others?
- 7. What would you recommend to improve i-PUSH?
  - a. (Probe) What are some of the challenges of using i-PUSH?

[For participants who renewed after Year 1, ask questions 8, 9, and then skip to 10]:

- 8. Why did you choose to renew your participation in i-PUSH after Year 1?
  - a. (Probe) Would you want to continue to participate in i-PUSH after Year 2?
- 9. How did you pay for your Year 2 participation?
  - a. (Probe) Did you split payment into multiple installments, and how?
  - b. (Probe) How did you save or receive the funds to pay for Year 2 participation?

[For participants who did not renew after Year 1, ask question Alternate 8 then go to 10]:

- Alternate 8. Why did you choose not to renew your participation in i-PUSH after Year 1?
- a. (Probe) How did the financial payment requirements influence your choice not to participate?
  - b. (Probe) What changes to the program would make you want to continue to participate in i-PUSH?

- 10. This year, many countries including Kenya have been affected by the COVID-19 pandemic. How has the COVID-19 pandemic affected your participation in i-PUSH?
  - a. (Probe) How have you adjusted your use of healthcare services since the pandemic started?
  - b. (Probe) How has it affected your ability to afford health care, as it related to i-PUSH?

- 11. We are at the end of the interview. Do you have any additional information you would like to share?

## **Medical Credit Fund Digital Cash Advance and Mobile Asset Finance Key Informant Interview Guides**

### **Introduction**

#### **Interviewer's welcome, introduction and instructions to participants**

Welcome and thank you for volunteering to take part in this in-depth interview. My name is \_\_\_\_\_, and I am conducting this interview on behalf of MSH to learn more about the role of digital systems and mobile money programs in patients' access to health services and in improving health systems. You have been asked to participate, as your point of view is important. Participating is voluntary. I know you are busy and I appreciate your time.

**Introduction:** This is an in-depth interview to learn more about the Medical Credit Fund's digital Cash Advance and Mobile Asset Finance, which are digital mobile solutions designed for health small and medium enterprises in Kenya. We would like to get your thoughts so that we can analyze implementation considerations and program components that will inform future programming. The interview will last for about 45 – 60 minutes.

[For interviews conducted in-person] I will share with you an informed consent form for you to sign.

[For interviews conducted by phone/virtually] I will record in my notes your response regarding consent to participate.

**[Provide or read consent form]**

## 1.) Kills CarePay/PharmAccess

### [Introduction per above]

#### *SECURE INFORMED CONSENT*

Before we start, do you have any questions for me?

Date: \_\_\_\_\_

Time interview started: \_\_\_\_\_

Time ended: \_\_\_\_\_

Interviewer/data collector: \_\_\_\_\_

Respondent gender:  Male  Female

Which do you work for?  CarePay  PharmAccess

Number of years working for CarePay/PharmAccess: \_\_\_\_\_

We would like to learn more about your experience developing and implementing the digital Cash Advance (CA) and Mobile Asset Finance (MAF) loans. We hope to gather important considerations in creating and implementing the work, as well as program lessons to date, for others who may be interested in doing something similar.

1. What was the process for developing digital Cash Advance and Mobile Asset Finance?
  - a. (Probe) What human resources were involved?
  - b. (Probe) What were the major activities in development?
  - c. (Probe) What was the timeline for developing CA?
  - d. (Probe) What was the timeline for developing Mobile Asset Finance?
  - e. (Probe) Why was it determined that Mobile Asset Finance would be offered as well as CA?

We would like to ask you about how mobile loans for facilities influence the way the health system works, including aspects such as health service quality and efficiency. We are also interested in learning how it may influence patient access to health services.

2. What were the primary effects expected in offering the digital Cash Advance and MAF loans?
  - a. (Probe) How did you expect dCA and MAF to affect recipient facilities?
  - b. (Probe) How did you expect CA and MAF to influence provision of health care?
  - c. (Probe) How did you expect it to influence the user or patient experience?
3. What impacts have you perceived on health facilities as a result of the CA and MAF loans?
  - a. (Probe) What changes have you seen in health facilities' financial situation?
  - b. (Probe) What changes have you seen in the quality of the health services?
  - c. (Probe) What changes have you seen in the management of different systems in the health facilities?

Next, we would like to learn about implementation and program adaptations of CA and MAF.

4. What were/are the positive factors that contributed to implementation of digital CA and MAF?
  - a. (Probe) What human resources positively contributed to the implementation of CA and MAF?
  - b. (Probe) What processes positively contributed to implementation?
  - c. (Probe) What technology considerations positively contributed to implementation?
5. What were/are the challenges to implementing Cash Advance and MAF?
  - a. (Probe) In what aspects of implementation did CA and MAF struggle?
  - b. (Probe) Why did the implementation struggle in those areas?
  - c. (Probe) What processes hindered the implementation of CA and MAF?
6. How were/are the challenges to implementing CA and MAF addressed?
  - a. (Probe) What actions were taken to remove the challenges to implementation?
7. Aside from what you have just mentioned, were there any other changes incorporated into CA and MAF?
  - a. (Probe) How are they assessed for changes?
  - b. (Probe) What information was/is used to inform changes?
  - c. (Probe) Are there any further changes planned?
8. How do you think the implementation process can improve?
  - a. (Probe) What resources are needed to improve the process?

Lastly, we would like to ask you about implementing Cash Advance and Mobile Asset Finance during the COVID-19 pandemic.

9. What effects have been experienced in implementing CA and MAF, as a result of the COVID-19 pandemic?
  - a. (Probe) What processes have been affected by the pandemic?
  - b. (Probe) How has the pandemic affected staff involved with implementation?
10. What changes have been made to CA and MAF, given the COVID-19 pandemic?
  - a. (Probe) How were/are the changes implemented?
11. We are at the end of the interview. Do you have any additional information you would like to share?

## 2.) KIIIs MCF CA/MAF Loan Recipient Facilities [Introduction per above]

Before we start, do you have any questions for me?

Date: \_\_\_\_\_

Time interview started: \_\_\_\_\_

Time ended: \_\_\_\_\_

Interviewer/data collector: \_\_\_\_\_

Respondent gender:  Male  Female

Number of years using Cash Advance or Mobile Asset Finance: \_\_\_\_\_

Which programs have you used? (Checkmark one or both)  Cash Advance  Mobile Asset Finance

We would like to learn more about your experience with digital Cash Advance (CA) and/or Mobile Asset Finance (MAF). We hope to gather important considerations in creating and implementing the work, as well as program lessons to date, for others who may be interested in doing something similar.

1. How did your facility start using Cash Advance and/or Mobile Asset Finance?  
Which year did you enroll onto the Cash Advance and/ or Mobile Asset finance?
2. What is your facility's experience with participating in MCF digital Cash Advance and/or Mobile Asset Finance?
  - a. (Probe) Walk me through a time when your facility used Cash Advance and/or Mobile Asset Finance.
  - b. (Probe) How many Cash Advances and/or Mobile Asset Finances have you accessed?
3. What do you use Cash Advance and/or Mobile Asset Finance for?
  - a. (Probe) What are some of the changes made to the health facility, as a result of Cash Advance/Mobile Asset Finance?
4. How has Cash Advance and/or Mobile Asset Finance impacted your financial situation?
  - a. (Probe) What is an example of how Cash Advance and/or Mobile Asset Finance impacted your finances?
  - b. (Probe) How does Cash Advance and/or Mobile Asset Finance influence your ability to pay for things?
5. What influence does Cash Advance and/or Mobile Asset Finance have on your facility's delivery of health services?
  - a. (Probe) What changes have you seen in the quality of the health services?
  - b. (Probe) What changes have you seen in health care worker satisfaction?
  - c. (Probe) What changes have you seen in your facility's ability to be responsive to clients?
  - d. (Probe) What changes have you seen in the management of different systems in the health facilities?
6. What does your facility like about using Cash Advance and/or Mobile Asset Finance?
  - a. (Probe) What are some of the strengths of using Cash Advance and/or Mobile Asset Finance?



- b. (Probe) Why would you recommend Cash Advance and/or Mobile Asset Finance to others?
- 7. What impacts have you perceived on your clients as a result of Cash Advance and/or Mobile Asset Finance?
  - a. (Probe) What changes have you seen in demand of health services?
  - b. (Probe) What feedback have you received from your clients regarding the health services offered at your facility?
- 8. When you use Cash Advance and/or Mobile Asset Finance, what is difficult?
  - a. (Probe) What are other challenges of using Cash Advance and/or Mobile Asset Finance?
  - b. (Probe) How do you address the difficulties?
- 9. How do you think Cash Advance and/or Mobile Asset Finance programs could improve?
  - a. (Probe) What would changes to the program mean for your facility and your work?
- 10. Since last year, many countries have been affected by the COVID-19 pandemic. How has the COVID-19 pandemic affected your facility's use of Cash Advance and/or Mobile Asset Finance?
  - a. (Probe) How has the pandemic affected your access to loans?
- 11. We are coming to the end of the interview. Do you have any additional information you would like to share?