

Understanding the Potential Role of Mobile Money in Civil Servant Payments in Liberia: A Contextual Analysis

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TABLE OF CONTENTS

Acronyms	2
Introduction	3
Mobile Phone and Electricity Use in Liberia	5
Healthcare Workers’ Ownership and Use of Mobile Phones	5
Healthcare Workers’ Use of Mobile Phones, by Cadre.....	6
Healthcare Workers’ Use of Mobile Phones, by Sex.....	7
Use of Mobile Phones for Work-related Purposes	7
Banking System in Liberia	9
Difficulty Maintaining Liquidity	9
Attitudes and Trust Towards Banks	10
Ministry of Health Payment System	11
Changes to Government of Liberia Payment System	12
Addition of New Healthcare Workers to Government Payroll	12
Healthcare Worker Perceptions of and Experiences with Payment System	13
Experiences in Being Added to Payroll.....	13
Time Spent Collecting Pay.....	14
Cost of Collecting Pay.....	15
Recurring Issues with Payment System	17
Issues with Payment System May – August 2016.....	17
Healthcare Worker Confidence in Ministry of Health	19
Mobile Money Use in Liberia	20
Mobile Money in Liberia	20
Mobile Money Agents.....	21
Healthcare Workers’ Use of Mobile Money	22
Healthcare Worker’s Attitudes Towards Mobile Money for Salary Payments.....	23
mSTAR Use of Mobile Money to Pay Teachers.....	24
Political Context	24
Conclusion	25
References	26

Acronyms

CBL	Central Bank of Liberia
CHA	Community Health Assistant
CSA	Civil Service Agency
GSMA	Groupe Spéciale Mobile Association
LRD	Liberian Dollar
LTA	Liberia Telecommunications Authority
MNO	Mobile Network Operator
MOH	Ministry of Health
mSTAR	Mobile Solutions, Technical Assistance, and Research Project
NAHWAL	National Health Workers Association of Liberia
P2P	Person-to-person
SIM	Subscriber Identity Module
SMS	Short Message Service
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
USD	US Dollar

Introduction

Mobile Solutions Technical Assistance and Research (mSTAR) project is a strategic investment by USAID to advance mobile solutions and close the gaps that hold back access and uptake of mobile technology. The project supports broad-based coordinated action by a range of market stakeholders — including governments, donors, mobile service providers, and their customers. mSTAR is designed to initiate and support game-changing interventions to support mobile money, mobile access, and mobile data collection and dissemination.

Specifically, mSTAR is working with the Liberian Ministry of Health (MOH) to use electronic payments as a means of disbursing salary and other remittances to government healthcare workers. This activity is of great importance given the challenges with the current payment system that often result in late payments to healthcare workers and recurring mistakes with payment amounts. The payment system is also inefficient, wasting both Government of Liberia and healthcare worker time and money. Although many of these issues with the payment system have existed for years, the recent Ebola epidemic brought new attention to these challenges as many healthcare workers were promised, and failed to receive, hazard payments for working during the outbreak. This prompted a large number of healthcare workers to go on strike in the midst of the Ebola outbreak.

Since these events, the MOH has worked with mSTAR to conduct formative research for implementing a mobile money system of paying its healthcare workers. Given the complexity of the Liberian setting, it is critical that any planned implementation of a new payment system be preceded by a sound understanding of the social, political, and infrastructural context of this country. As such, this document serves to describe the Liberian-specific factors which might serve as barriers or facilitators to implementation of a mobile money payment system for government healthcare workers.

The data from this report are drawn from a myriad of sources, including an *mSTAR Ethnographic Study* of healthcare workers' interactions with the current payment system, USAID and UNDP reports on the use of mobile money in Liberia, a payment systems mapping conducted by mSTAR, and interviews with various stakeholders in Liberia.

Mobile Phone and Electricity Use in Liberia

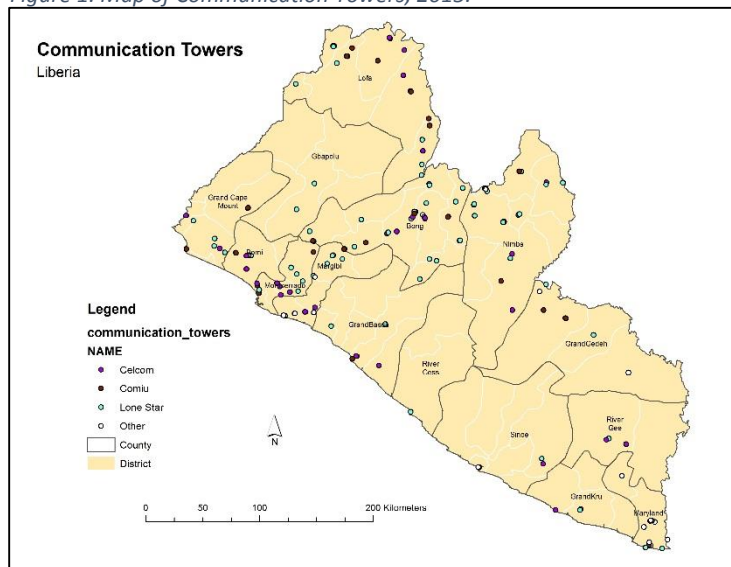
Liberia has a population of 4.2 million people, 43 percent of whom are aged 14 or younger (2). Given the destruction of infrastructure during the civil wars during the 1990s and early 2000s, use of fixed line telephones in Liberia is extremely limited, with less than 9,000 fixed lines across the country (2). This represents less than 1 fixed phone line per 450 inhabitants of Liberia.

In contrast, the absence of fixed telephone infrastructure has resulted in an ideal economic environment for the proliferation of mobile phone subscriptions. The number of mobile phones owned has grown rapidly over the last few years. The Demographic Health Survey reported that the percent of households owning a mobile phone increased from 29 percent to 65 percent between 2007 to 2013 (3).

This figure differed by location, however, with only 42 percent of households in rural areas owning a mobile phone, compared to 82 percent in urban areas (3).

The Groupe Spéciale Mobile Association (GSMA) estimates that Liberia has 2.9 million mobile subscribers (1.4 million with Lonestar; 1.3 million with Cellcom), while the Liberian Telecommunications Authority (LTA) puts the figure at 3.2 million (4). Important to note is the fact that many mobile phone subscribers own SIM cards for more than one Mobile Network Operator (MNO), opting to switch between SIM cards when traveling in areas where one MNO has better network coverage than the other. Given this, it is difficult to estimate the number of adults with SIM cards in a way that does not double-

Figure 1. Map of Communication Towers, 2015.



count individuals who own more than one SIM card. Still, these figures are impressive given that Liberia has only 2.4 million individuals 15 years or older. Although exact numbers are difficult to determine, experts suggest that over 90 percent of the country has mobile network coverage under one or more MNO (5). A map of telecommunications towers across Liberia can be found in Figure 1. In addition, an increasing number of Liberians are beginning to own smart phones that enable them to access the internet. The LTA estimates that 40 percent of unique mobile subscribers have internet access on their mobile phone, as of Q1 2016 (4).

Table 1. Percent of Households with Electricity (power grid, generator, or solar panel).

Region	Percent
Montserrado	32.3%
South Central	10.2%
North Western	8.2%
South Eastern A	5.5%
South Eastern B	3.9%
North Central	2.7%

The country’s saturation with mobile phones is particularly notable when you consider the fact that only a small minority of Liberian households have access to electricity. Indeed, since the destruction of the Mount Coffee Hydropower Plant during the civil war in 1990, Liberia has some of the lowest access to public electricity in the world (6). In Monrovia, an estimated 1,217 out of 210,619 households are supplied with public electricity from the power grid (6). A small power grid also exists in part of Bong County. Apart from these two areas, the country does not have access to public electricity.

According to the 2014 Household and Income Expenditure Survey, approximately 21.5 percent of urban and 3.7 percent of rural homes (14.4 percent total) have access to electricity through the power grid, generator, or solar panels (7). As is the case with much of the infrastructure throughout Liberia, the distribution of homes with electricity is widely varied by location, as can be seen in Table 1 (7).

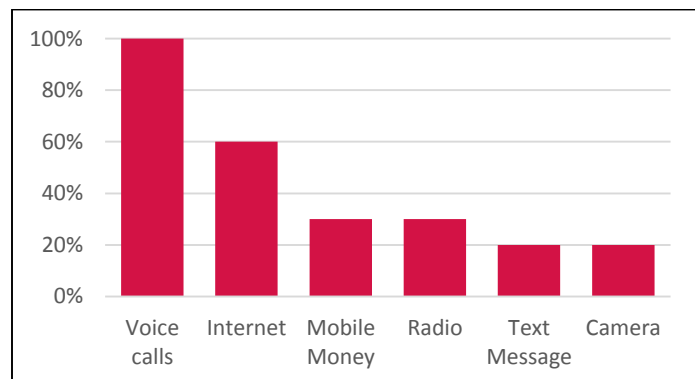
HEALTHCARE WORKERS' OWNERSHIP AND USE OF MOBILE PHONES

Despite challenges in enumerating mobile phone ownership and coverage, focus group discussions and direct observations with healthcare workers through the *mSTAR Ethnographic Study* demonstrated that mobile phones have adopted a near ubiquitous role in the daily life of much of this population. Focus group discussions were conducted in five selected counties: Montserrado, Nimba, Bong, Lofa, and Gbarpolu. Each county had three focus group discussions – one with female clinical workers, one with male clinical workers, and one with nonclinical healthcare workers that had both male and female participants. Each focus group contained between eight and 12 individuals.

Findings from focus group discussions, direct observations, and unstructured conversations with healthcare workers consistently found that nearly all healthcare workers in Liberia own mobile phones, although the frequency and type of use of mobile phone vary. When healthcare workers participating in a focus group discussion were asked about who owns a mobile phone, they responded with statements like, “Everybody, phone is cheap. Men and women, children, students, everybody,” and, “In Liberia, everybody. Marketer, old ladies, children, everybody.” This perspective that mobile phones are widely accessible and mobile phone ownership nearly universal was consistent across five counties, both sexes, and different cadres of healthcare workers (both clinical and non-clinical). In addition, many healthcare workers also described how important it is for healthcare workers to own mobile phones, both for work purposes and because many of them are living away from their families while stationed at their health facility.

When 10 of the 15 focus groups of healthcare workers were asked to list the top three ways that they use their mobile phones, every group listed making and receiving phone calls as the top type of use. Sixty percent of groups listed internet (either for entertainment, social media, or online research) as one of the top three uses of mobile phones and 30 percent listed mobile money. Other top uses of mobile phones included radio, text message, and camera, as seen in Figure 2.

Figure 2. Percent of Healthcare Worker Focus Groups Listing Specific Type of Mobile Phone Activity in Top Three Uses (n=10).



As mentioned earlier, an estimated 40 percent of mobile phones in Liberia can access the Internet. It is unknown what percent of healthcare worker-owned mobile phones can access the internet, however the fact that most focus groups listed internet as a top way that they use their phones would suggest that a large portion of their phones are Internet-accessible.

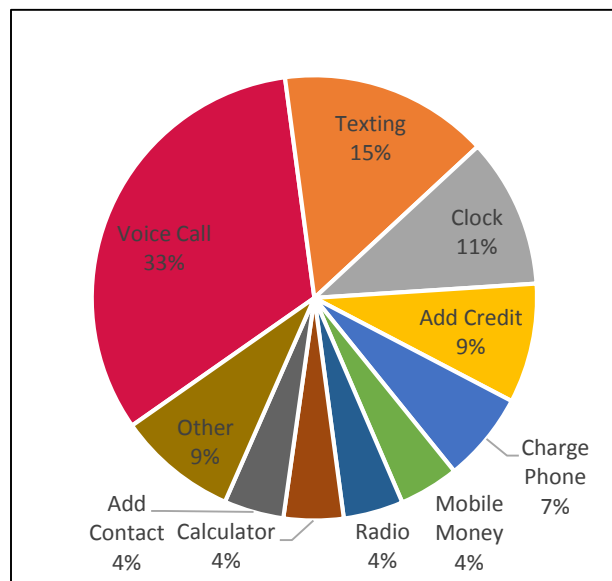
Throughout all focus group discussions and direct observations, text messaging was mostly discussed in the context of receiving text messages, rather than sending them. Most mentions of text messaging centered on receiving mass messages from mobile network operators, MOH, and—for some—their bank. All healthcare workers receive regular mass text messages from their mobile network providers advertising discounted plans and from the MOH. Some healthcare workers also receive text message notifications from their bank when their account balance changes.

Very few healthcare workers mentioned the use of text messages to send or receive messages with friends or family. Those who did mention sending text messages often described this in the context of

using text to communicate when it was not possible to make a phone call, either because of inconvenient timing or lack of credit on the phone. Use of mobile phones for sending or receiving personal text messages was also not observed in any of the direct observations conducted among healthcare workers. Text messaging for the purpose of having a personal conversation was not described by healthcare workers.

HEALTHCARE WORKERS' USE OF MOBILE PHONES, BY CADRE

Figure 3. Percent of Healthcare Workers Using Mobile Phone During Workday, by Type of Use (n=15).



Types of use of mobile phones differed greatly by cadre (clinical versus nonclinical) of healthcare worker. Nonclinical workers include health facility housekeepers, cooks, drivers, etc. and, as such, are generally expected to have lower education, literacy, and digital literacy levels than clinical healthcare workers. During focus groups, some nonclinical workers specifically mentioned that they were unable to read and would hand their mobile phone to someone else to read any messages aloud to them.

Among focus groups of clinical healthcare workers, 100 percent listed internet as one of the top three ways they use their mobile phone, compared to 0 percent among nonclinical healthcare workers. Also, 67 percent of nonclinical focus groups listed text messages as a top means of mobile phone use,

compared to 0 percent among clinical workers. These are believed to be the receipt of mass text messages. The differences in mobile internet use between these two cadres might reflect an overall difference in digital literacy and therefore the extent to which these different cadres use mobile phones. Individuals with lower digital literacy are expected to use more advanced mobile features, such as internet, less than those with greater digital and actual literacy.

In addition, given that all healthcare workers receive some mass text messages from the MOH, it is possible that receipt of these text messages represents a larger portion of overall mobile phone use for nonclinical workers than it does for clinical workers. As such, text messaging was not acknowledged as a top means of mobile phone use for clinical workers. For nonclinical workers who do not use their phones as much as clinical workers, receipt of these mass text messages is likely one of the more consistent ways that they interact with their mobile phone.

The nonclinical worker focus group discussion in Monrovia did not take part in the exercise where they listed the top three uses of mobile phones, however they did have a guided discussion regarding mobile phone use. During this conversation, workers mentioned using Facebook and mobile money. In this way, the group of nonclinical workers from Monrovia seems to be different than the other nonclinical focus groups that are from the rural counties. This difference is likely due to the fact that nonclinical workers in the capital city of Monrovia might have greater education and digital literacy, as both of

variables are higher in urban areas. As such, nonclinical workers in Monrovia might more closely resemble clinical healthcare workers in terms of their behavior regarding mobile phone use.

HEALTHCARE WORKERS' USE OF MOBILE PHONES, BY SEX

Reports on mobile internet use in Sub-Saharan settings have consistently found a gender gap regarding mobile phone ownership and use. Men in Sub-Saharan countries are 13 percent more likely to own mobile phones than women, though this gap is larger in rural settings. In addition, women are more likely than men to have never used their phone to send an SMS (short message service) message or access the internet and are more likely to need assistance in adding credit to their phones (8). It is believed that these differences are mostly due to disparities in education, wealth, and digital literacy between the two sexes (9). Despite this, differences in mobile phone use by sex among healthcare workers seemed rather minor. Among clinical workers, all male and female focus groups included both voice calls and internet in the top ways that they use their mobile phones. This consistency in use of phones for voice calls and internet might reflect the fact that, relative to the general population, male and female healthcare workers might have fewer differences regarding education, wealth, and digital literacy. Women who are working as clinical healthcare workers have presumably completed some formal schooling and have a means of earning income.

Interestingly, two out of three male clinical worker focus groups listed radio as a top use, compared to zero of female clinical worker focus groups. Conversely, two out of four female clinical focus groups included use of a phone's camera as one of the top ways they use their mobile phone, compared to zero among male clinical focus groups.

During periods of direct observation of healthcare workers in their work setting, researchers observed that the frequency with which healthcare workers use mobile phones throughout the work day is quite variable: observations among 15 healthcare workers revealed that these individuals interacted with their mobile phone between three and 21 times throughout the course of the work day. Male healthcare workers seemed to interact with their mobile phones more frequently throughout the work day than their female counterparts. An estimated 70 percent of interactions with mobile phones consisted of making or receiving voice calls. Other uses included text messaging (reading texts received from mobile network operators, MOH, bank, or mobile money), checking the time on the phone's clock, using the calculator, and using mobile money.

USE OF MOBILE PHONES FOR WORK-RELATED PURPOSES

Healthcare workers consistently reported the use of mobile phones for work purposes, including making/receiving phone calls, receiving text messages from MOH, and doing mobile internet research on work-related topics.

Healthcare workers reported using their mobile phones to call other healthcare workers, supervisors, patients, patient families, and ambulance drivers as part of their jobs. Individuals described placing calls to their colleagues at the health facility in order to relay information about a patient's condition and to learn the whereabouts and work schedule of their colleagues if they weren't at the health facility as expected. Workers also reported using phone calls to discuss patient cases and schedules with their supervisors, as well as using internet on their mobile phones to submit work-related reports. Some

clinicians specifically mentioned cases of calling colleagues for advice if they were uncertain about a particular patient’s diagnoses or treatment plan. Many healthcare workers described the use of mobile phones as being critical to their work, as their role necessitated them to make regular calls to patients for follow-up or tracing purposes. Both clinical and nonclinical workers also described the importance of mobile phones in enabling them to call an ambulance in order to pick-up critically ill patients.

“I need to make a communication, so that the ambulance can quickly go for my patient. I need to call through mobile phone.” – Nonclinical Worker, Lofa County

“I actually use my mobile phone to make research about laboratory department. Where there are some issues I didn’t know about, I read on it on the internet.” – Male, Clinical Worker, Nimba County

“We also use the mobile the phone to get information that if a doctor orders medicine to the patient that you are not familiar with some time you have to go on the net to know whether that medicine will really be good for the patient.” – Female, Clinical Worker, Bong County

During focus group discussions with healthcare workers, many clinical workers described using the internet on their mobile phones to conduct research or to learn more about a topic. Such activities were described consistently across both sexes and in all five counties that were sampled for clinical workers. Workers described either general research on a topic of interest and, at times, gave specific examples of needing to research a topic for work purposes, such as a midwife looking online to find guidance on frequency of vaginal exams or a laboratory technician researching a procedure. Other workers described doing online research on their phones for a specific assignment or to present on a particular topic.

The fact that use of internet for research or other purposes on mobile phones did not differ by sex is an interesting finding. Other studies have found that women’s use of mobile phones to access and browse

the Internet tends to lag behind that of men in many developing settings (9). It is possible that the focus of mSTAR’s study to healthcare workers reduced any discrepancies in mobile internet use that might otherwise exist between men and women in Liberia by practically controlling for differences in education or socioeconomic status.

Many healthcare workers also indicated or were observed using electricity at the health facility where they work to charge their mobile phones. This seems consistent with the fact that relatively few households have electricity, whereas you would expect that most health facilities would have electricity either through the grid or, more commonly, through a generator. As one healthcare worker described, *“for the charging aspect... the hospital gives current to health workers here... If you can’t get it at home, you carry [the phone] to the working area and charge it.”* Having consistent access to electricity in order to charge their phones might also enable healthcare workers to have greater access to mobile phone use than the general population in Liberia, although no concrete data exist to support this idea.

Banking System in Liberia

ACCESS TO BANKS

The banking system in Liberia has grown significantly over the last several years, yet is still rather underdeveloped compared to countries of similar size (10). A 2015 report by the Central Bank of Liberia (CBL) reported that 80 percent of Liberia’s adult population remains unbanked (11). The poor uptake of formal bank accounts by Liberians can be attributed to a few key factors: the lack of bank branches outside of Monrovia, the requirements for opening and maintaining a formal bank account, and difficulty of maintaining liquidity in banks. Although Liberia’s banking system boasts of a few different banks, Ecobank and the Liberian Bank for Development and Investment (LBDI) are the leaders in this

sector, representing over \$320 million worth of deposits (1).

Table 2. Number of Banks in Liberia, by County (1).

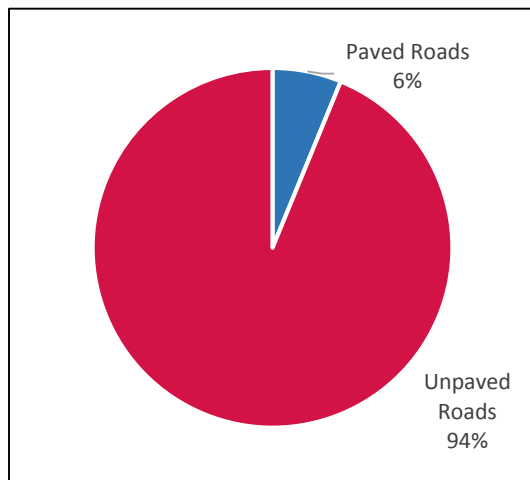
County	Population	Bank Branches
Montserrado	1,118,241	51
Margibi	209,923	10
Nimba	462,026	7
Grand Bassa	221,639	6
Maryland	135,938	4
Bong	333,481	3
Lofa	276,863	2
Bomi	84,119	1
Grand Cape Mount	127,076	1
Grand Gedeh	125,258	1
Sinoe	102,391	1
Gbarpolu	83,388	0
Grand Kru	57,913	0
River Cess	71,509	0
River Gee	66,789	0
Total	3,476,554	87

It is estimated that Liberia has less than four bank branches per 100,000 adults (1). In addition, these bank branches are inconsistently distributed throughout the country, as seen in Table 2. Of the 87 bank branches throughout Liberia, 51 of them are in Montserrado County and another 10 in neighboring Marigibi County (1). The counties of Gbarpolu, Grand Kru, River Gee, and River Cess have no bank branches at all and the counties of Bomi, Grand Cape Mount, Grand Gedeh, and Sinoe each have only a single bank branch. In an effort to bolster the banking system in Liberia, each county now has at least one Rural Community Financial Institution (RCFI). According to a survey conducted by CBL in 2015, distance to reach a bank branch was a major reason why Liberians did not open bank accounts (1, 12).

DIFFICULTY MAINTAINING LIQUIDITY

As described in the Financial Diagnostic Update produced by UNDP in April 2016, the banking system in Liberia is plagued with issues regarding maintaining liquidity. CBL is responsible for maintaining an adequate supply of both US dollars (USD) and Liberian Dollars (LRD) within the country, including the importation of USD. Commercial banks are responsible for maintaining adequate liquidity at each of their branches. This task is fraught with numerous challenges, resulting in rural bank locations often running out of cash. Many loans in Liberia are non-performing and high risk, reducing the amount of cash that flows into the bank (1). The recent Ebola epidemic also resulted in a general economic slowdown as many markets and businesses closed during this time (10, 13). This caused an overall suppression of money flow between individuals, businesses, and banks. It also decreased individuals’ abilities to repay loans, thus lowering the volume of money flowing into the banking sector.

Figure 4. Percent of Liberian Roads that are Paved.



One of the greatest challenges to maintaining liquidity in Liberia’s banks is the tremendous difficulty in physically transporting cash currency to rural banks. Of Liberia’s 10,600 kilometers of roads, only 657 kilometers are paved (1). Road conditions deteriorate rapidly during the rainy season of May through October, with vehicles needing to move slowly and with caution in order to avoid getting stuck on the muddy roads. Despite this, vehicles getting stuck on the road are a common and expected occurrence during this time of year. The cost of transportation also increases during the rainy season, in order to compensate drivers for the increased time and peril of their travel.

The responsibility of forecasting the cash needs of rural bank branches lies with the commercial banks, however these needs can be difficult to accurately predict. Many of the individuals who hold bank accounts are civil servants and receive their pay from the Government of Liberia each month. Their bank accounts are primarily used for receiving the deposited salary amount, which they then withdraw immediately. This pattern of cash flow can result in large fluctuations of cash supply for banks, who receive large amounts of deposits from the Government of Liberia and then promptly have these cash supplies depleted by civil servants who withdraw nearly all of their pay.

The monthly waves of teachers, healthcare workers, and other civil servants who come to the bank to withdraw their salary payments can also easily overwhelm the banking system. As such, civil servants who arrive at the bank to collect their monthly payment are often forced to wait in long lines. When the bank runs out of cash or the bank’s bandwidth is exceeded, bank agents tell those waiting that the bank “system is down.” These episodes of the bank system “being down” are, reportedly, more frequent during periods with more transactions, such as when civil servants and employees of private institutions are withdrawing their salaries from their bank accounts.

“They going to tell you the professional way their system down. So they not going to tell you we do not have money here.” – Male, Clinical Worker, Bong County

“They will tell you system is down, you will have to wait sometimes 3, 4 hours. Sometimes you don’t even get it and you will end up coming right back... and wait again.” – Female, Clinical Worker, Nimba County

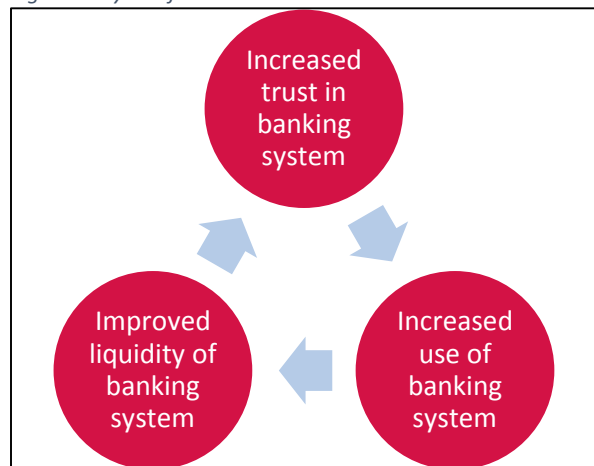
“When you go there they say system down. You will be there 3 days before you... receive your salary.” – Nonclinical Worker, Gbarpolu County

ATTITUDES AND TRUST TOWARDS BANKS

Individuals’ experiences with the bank running out of cash, the system being “down,” and long lines all have an impact in how they perceive and trust formal financial institutions. For example, when civil servants feel that the process of withdrawing their salaries from the bank is unpredictable or delayed, then this can result in them feeling that the bank is not a safe place to store their money. As mentioned earlier, only 20 percent of the Liberian adult population has an account with a formal financial institution (11), meaning that the vast majority of the population has had relatively limited exposure to

working with banks. As such, the concept of using a bank to receive and store money securely remains somewhat foreign to most Liberians. Lack of understanding of how the banking system works, lack of exposure to banks, recurring challenges in withdrawing payments, and poor experiences with banks during the civil war can all contribute to a certain level of wariness when it comes to interactions with the banking sector. These factors, when taken together, can also be used to explain a lack of trust that might exist between civil servants and banks.

Figure 5. Cycle of Trust and Bank Use.



These issues can be seen as somewhat cyclical. A lack of trust or interest in utilizing the banking system can prevent the Liberian banking sector from being more robust and can exacerbate liquidity issues, which in turn can make Liberians less comfortable with using banks. Infrastructural improvements to Liberia’s roads could alleviate some of these liquidity issues by facilitating easier transportation of physical cash to rural banks. This improved liquidity would help banks to provide cash to individuals in a timely manner, which would help build greater trust between individuals and banks. As individuals’ trust in the banking system increases, they might be more willing to save more money in

bank accounts and/or utilize some of the bank’s other financial services.

Ministry of Health Payment System

The Liberian MOH’s system of paying healthcare workers is complicated, with healthcare workers receiving multiple types of payments, in two different currencies, and from multiple different funding sources. A summary of the entire payment system and funding streams can be found in the *mSTAR Health Workers’ Payment Streams Mapping Report* that is currently being finalized. The first form of remittance is salary. The second form of remittance is referred to as “incentive” by healthcare workers, although the MOH refers to this remittance as “allowances.” For the purposes of this report, we will refer to this form of remittance as incentives. Prior to May 2016, salary was paid in LRD and incentives were paid in USD, however there have been changes to the currency of incentive payments in recent months.

In the past, payments to healthcare workers were brought to individual health facilities and were disbursed by a team of MOH staff and bank agents. Although this process minimized the amount of time needed for healthcare workers to travel to collect pay and time the healthcare worker had to spend away from work, it also relied on the manual distribution of cash. As such, this means of disbursement was vulnerable to fraud, whereby bank agents could require that a healthcare worker pay an unofficial “fee” or bribe in order to receive their cash. Based on conversations with healthcare workers, the exaction of this “fee” seemed to be standard practice by bank agents and something that healthcare workers had come to expect whenever they received their pay.

CHANGES TO GOVERNMENT OF LIBERIA PAYMENT SYSTEM

Starting in 2009, the Government of Liberia began to transition away from cash-based financial transactions and established new policies to affirm its commitment to moving away from cash. As stated in part R of the *Public Finance Management Regulations for Public Finance Management Act*, “Heads of Government Agency shall endeavor to arrange, as far as it is consistent with the convenience of the public and the control of transaction, that collections or payments are made by check, bank transfer or direct payment to bank accounts” (14).

In accordance with this new policy, the Government of Liberia now requires that employees on the government payroll set up a bank account in order for any remunerations to be deposited directly into the account. While this new system of delivering payments to civil servants helps reduce the occurrence of unofficial “fees,” it also forces both the government and its employees to be reliant on the banking system for civil servant payments. This presents significant disadvantages since, as described above, Liberia’s banking system is fraught with many challenges regarding managing liquidity in its rural bank locations. In addition, the paucity of bank locations outside of Monrovia means that healthcare workers often must travel great distances to reach the closest bank and access their salary payments.

Whereas the prior system of delivering checks and cash directly to health facilities included the receipt of a simple payslip that was stapled to each paycheck, with the remuneration amount and any deductions clearly delineated, the new direct deposit system does not include the use of any kind of payslip or formal record of payment and deduction amounts. In the absence of a payslip, healthcare workers and other civil servants have no way of verifying if their base pay and the amount of deductions made by the Government of Liberia for taxes and insurance are correct (15). As a result, healthcare workers often compare payment and deduction amounts with their work colleagues in order to understand if the amount they are receiving is consistent with what others have received for a particular month. In addition, healthcare workers do not have many opportunities for appeals or recourse in situations where they feel they are paid the incorrect amount or would like clarity regarding deductions they have observed. As will be described below, this lack of documentation has contributed to a large amount of confusion, as well as concerns regarding lack of transparency, among healthcare workers.

ADDITION OF NEW HEALTHCARE WORKERS TO GOVERNMENT PAYROLL

Over the last year, the Government of Liberia has made an intentional effort to increase the number of healthcare workers who are on the government payroll. In Liberia, many healthcare workers are hired by the MOH on a contract basis before they are officially put on the government payroll. During this contract period, the healthcare worker can receive remuneration in the form of incentive pay—this period can last anywhere from 2 months to 3 years. When a worker transitions to being on the government payroll, they are expected to open a bank account to begin receiving both salary and incentive pay via direct deposit.

The number of healthcare workers making this transition from contract worker to government payroll has increased greatly in the past year, going from 5,821 in April 2015 to 7,214 in June 2016 (16). The overall increase in healthcare workers (both contract and payroll) has experienced only a modest increase of 10,406 to 10,672 during this same period (16). With this shift in more healthcare workers

being paid via government payroll comes a commensurate increase in burden on the MOH and Civil Service Agency (CSA) to process the administrative paperwork to begin paying these healthcare workers via direct deposit. The burden also increases for banks, that are now expected to manage the increased volume of monthly transactions for these new payroll employees.

Moreover, the MOH is expected to absorb a few thousand new employees over the next few years, through the launching of the *National Community Health Assistant (CHA)* program that was announced in August 2016 and is being funded by USAID and UNICEF. The plan is expected to train and deploy 4,000 CHAs between now and 2020, an estimated 2,000 of which are expected to be deployed before the end of 2017 (17). Although community health volunteers have existed in Liberia for many years, use of monetary incentives for this cadre has been ad hoc, based on support from nongovernmental organizations or donors. This new army of CHAs will be integrated into the existing government healthcare worker system and will be paid approximately \$60 a month by the government (18). It can be anticipated that this increase in government-paid healthcare workers will result in a greater flow of civil servants needing to access payments through banks in rural areas, as this is where the CHAs will be working.

Healthcare Worker Perceptions of and Experiences with Payment System

EXPERIENCES IN BEING ADDED TO PAYROLL

As described earlier, healthcare workers' early exposure to the Government of Liberia's payment system is through that of being a contract employee and receiving remunerations at the health facility where they work, via check and cash, as incentive pay. The amount of time that an employee remains on contract before being added to the payroll can vary greatly. In conversations with healthcare workers, the contract period seemed to span from 2 months to 9 years, although the reasons why some healthcare workers remain in the contract period for longer than others is not apparent.

When asked about what it's like to be added to the government payroll, healthcare workers had a mix of responses. They explained that it is widely preferred to be on government payroll, rather than contract, as this status makes you eligible for more benefits. In addition, being a contract employee was associated with feelings of instability, with healthcare workers explaining that contract workers do not have the same assurance that they will receive their pay.

"If you are on... contract anytime they can kick you out. Or sometime they can come and hold your money and say we are not giving it to you, but when you on Government salary it will be fine." – Male, Clinical Worker, Gbarpolu County

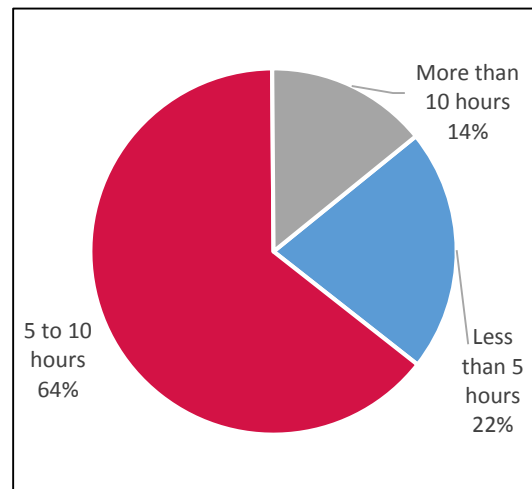
"When you are... a new employee on the government payroll they send your name from civil service to your county, through the HR [Human Resources Officer]. The HR will post the name up if you see your name on the bulletin board you have to go to him to explain the process to you, but before you can see that name it has already past two-three months. And you will not be receiving money from the institution [health facility] you working for." – Female, Clinical Worker, Bong County

The actual process of being added to the government payroll and collecting the first salary payment was described as confusing and highly stressful. This process begins when the healthcare worker learns, often via a notice on a bulletin board at their health facility, that their name has been added to the payroll. This notification seems to happen approximately two months after the switch to payroll is actually made by the MOH in Monrovia. The healthcare worker is then in touch with their Human Resources Officer to learn what they should do next. The Officer instructs the healthcare worker to travel to the MOH in Monrovia for more information. Travel from rural areas of Liberia to Monrovia can be both expensive and time-consuming, especially for those who have not spent much time in the nation’s capital before. Upon arriving in Monrovia, the healthcare worker will receive a payroll account number from the MOH, instructed to get a biometric identification card, and told to open a bank account in order to receive payments. From here, the process can vary but typically involves the healthcare worker traveling to the bank, CSA, and sometimes MOH and Ministry of Finance in order to confirm that they are set up to receive salary payments and to collect their initial payment. Healthcare workers report that they often miss receiving two or three months’ worth of salary that was sent before the healthcare worker was notified that they had been added to the payroll. It is not clear if the healthcare workers fail to receive these payments because the funds could not be transferred since there wasn’t a bank account or for a different reason.

TIME SPENT COLLECTING PAY

Healthcare workers spend a large amount of time attempting to collect their salary payments from the bank. As part of the *mSTAR Ethnographic Study*, 14 healthcare workers across five counties (Montserrado, Nimba, Lofa, Gbarpolu, and Bong) took part in a direct observation activity, whereby researchers accompanied them as they went to collect their pay from the bank. The researchers documented the amount of time this activity took, starting from when the healthcare worker left home until they returned back to their home with the pay. This measure included time spent traveling to the bank, time waiting at the bank, and travel time back to his or her home. As can be seen in Figure 6, 64 percent of the participating healthcare workers spent between five and 10 hours

Figure 6. Time Spent Collecting Pay (n=14).



collecting their pay. The median number of hours spent collecting pay was 6.25 hours. Of the 11 healthcare workers who lived outside of Montserrado County, four of them had to travel to Monrovia to reach the closest bank. The remaining seven were able to travel to a bank within their county to collect their pay. Important to note, is that these observations were conducted in August 2016, during the rainy season. Travel during the rainy season is typically much more time-consuming than during the dry season, as very few roads are paved and vehicles must move slowly to avoid getting stuck in the mud. It is reasonable to assume that the amount of time traveling to and from the bank would be shorter during the dry season.

In addition to time spent traveling to and from the bank, it is common for healthcare workers to spend two to four hours at the bank before they receive their payment. In focus group discussions with

healthcare workers, most described waiting in long lines at the bank before being seen by a bank agent to withdraw their money. Many healthcare workers also described how they would leave their homes early in the morning, in order to arrive at the bank a couple of hours before it opened so that they could be seen first when the bank opened.

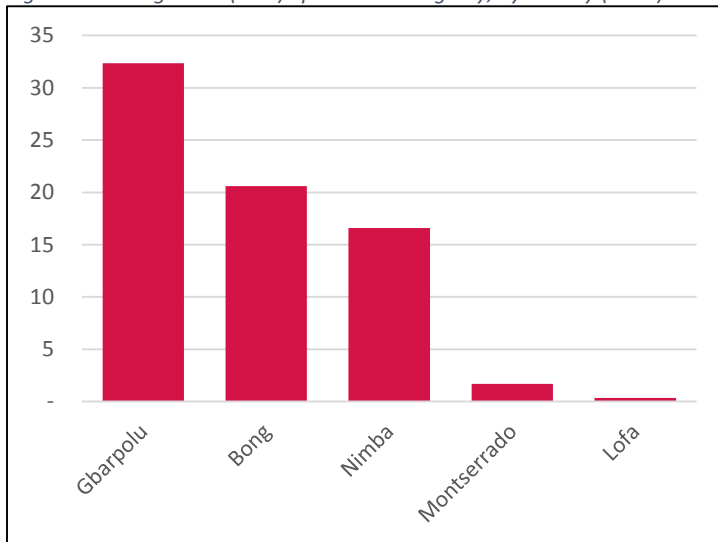
Healthcare workers noted that it was very common for the bank visit to require additional time if bank agents reported that the bank “system was down” – meaning they had to halt transactions due to either poor internet connection or low liquidity. In such a case, customers will either continue waiting at the bank to see if the system will become functional again or will have to return to the bank the following day to complete their transactions.

Some healthcare workers gave examples of when the process of collecting pay unexpectedly took multiple days. This was typically the case if it was the healthcare worker’s first time being added to the payroll and collecting salary or if the healthcare worker’s name was mistakenly removed from the payroll list and so the bank did not receive the salary. The latter case happened in one of the 14 direct observations that took part in the *mSTAR Ethnographic Study*. The healthcare worker, a male clinical worker who had traveled from Gbarpolu to Monrovia—a three hour ride by motorbike—to collect his pay, arrived at the bank to find that his name was not on the payroll. He was forced to stay in Monrovia four days while he traveled back and forth between the CSA and bank in order to remedy the issue and collect his pay.

COST OF COLLECTING PAY

As part of the *mSTAR Ethnographic Study* direct observation exercise, healthcare workers were monitored to see how much cost they incurred in collecting their monthly pay. Researchers included cost of travel, meals, lodging, and unofficial “fees” in this total. The study found that the amount of money spent to collect pay varied by county, which makes sense given that healthcare workers in different counties have to travel different distances to the nearest bank. Gbarpolu, Bong, and Nimba Counties’ average spending was between \$16 and \$32 per healthcare worker. Costs were markedly less for healthcare workers in Montserrado and Lofa Counties, where healthcare workers averaged less than \$5 in costs to collect pay. The healthcare workers from Lofa County who participated in this research activity happened to live in the capital of the county, where the closest bank is. Many clinical healthcare workers mentioned that they typically receive between \$190 and \$220 in salary in per month, meaning that healthcare workers in this study spent between 2 percent and 17 percent of their salary on travel and other costs. These proportions were greater for nonclinical workers as their salary payments are lower than clinical workers. Due to the high cost of going to collect pay from the bank, many healthcare workers report that they and their colleagues only go to the bank to collect their payments once every two to three months. Although this strategy can reduce the amount of money that they spend each year on traveling to collect their pay, it often means that the healthcare workers must take out loans in order to cover their living expenses during the long periods in between when they go to collect pay.

Figure 7. Average Cost (USD) Spent Collecting Pay, by County (n=14).



Transportation, via rented motorbike or car, tended to be the greatest cost for healthcare workers in most counties. A handful of healthcare workers reported owning or borrowing a motorbike or vehicle to travel to the bank, in which case they reported the cost of fuel needed for the trip. Again, the cost of transportation would be expected to be lower during the dry season of December through February.

Costs for healthcare workers needing to travel to Monrovia to reach the bank tended to include lodging and meals at a guest house. These costs could easily

multiply if the healthcare worker was forced to stay in Monrovia for multiple days in order to address any issues with his or her pay. In focus group discussions, healthcare workers described the stress of buying meals and lodging in Monrovia, where the cost of living is greater than other parts of the country, in order to collect pay.

During the focus group discussions, some healthcare workers mentioned times that they had paid unofficial “fees” in order to expedite the process of collecting their pay. The most consistent type of “fee payment” reported was to bank security guards or—less commonly—to bank tellers, in order for a healthcare worker to withdraw his money without having to wait in line. The amounts given to bank security guards or tellers ranged from \$1 to \$10 USD but most were around \$5 USD. Healthcare workers seemed to have different perspectives on this “fee” with some regarding it as more of a tip in order to create goodwill with the bank employee. Other healthcare workers seemed to view the “fee” as closer to extortion, explaining that bank security agents will not let them into the bank to see a teller until the “fee” is paid. Still, some healthcare workers said that they never paid any fees in order to collect their pay from the bank. It is unclear how common of a practice paying these “fees” is and if there are geographical differences behind this behavior.

“The security men... they say we should give them something before we can get in and sometimes you coming outside you don’t give them money, the next time when you come they will not allow you to get inside [the bank].” – Male, Clinical Worker, Bong County

“You have to go to the Ministry [of Health] where your document will be and bribe people; they take your document to Civil Service; you go to Civil Service you bribe people; when they tell you that your document is at the Finance Ministry, you will go to the Finance Ministry and bribe there before your name can enter the payroll.” – Female, Clinical Worker, Montserrado County

There were at least two instances where healthcare workers described paying MOH, Ministry of Finance, and CSA employees a “fee” in order for them to correct an issue with the payroll process. Both of these instances were from female healthcare workers in Montserrado County and, in both cases, the women explicitly referred to these payments as “bribes.”

RECURRING ISSUES WITH PAYMENT SYSTEM

When asked about what the current payment system is like, most healthcare workers commented that their salary payments are usually late and it is difficult to predict when the amount will be deposited into their bank accounts. As described in the *mSTAR Health Workers' Payment Streams Mapping Report* and in conversations with healthcare workers, salary payments are supposed to be deposited by the 15th of every month (16). For example, the salary payments for August should appear in healthcare workers' bank accounts by August 15th. In reality, this process is always delayed. The salary payments for *July 2016* were received in healthcare workers' bank accounts after *August 5th*, nearly one month later than scheduled. As mentioned earlier, it is also not uncommon for healthcare workers to stop receiving salary payments if their name is mistakenly deleted from the payroll, an issue that requires a trip to Monrovia to rectify. This unpredictability of payment timing can make it difficult for healthcare workers to budget their money and plan for future expenses.

Issues with the payment system were brought to a head during the Ebola outbreak in 2014 when the MOH promised to give healthcare workers hazard pay for the time that they spent working during the outbreak. The Ministry, however, encountered several issues in trying to implement these special payments with its current payroll system. In October 2014 and July 2015, healthcare workers protested outside the MOH office in Monrovia, arguing that they were risking their lives in fighting Ebola and deserved to be compensated for this risk (19-21). Although this incident was reported widely in the international news and is a visible example of the many issues with the current payment system, no healthcare workers mentioned this specific issue in the focus group discussions.

In addition, there is no standardized means of notifying healthcare workers when their salary payments have been deposited. While some healthcare workers receive automated SMS texts from their bank when their account balance changes, others do not have this tool. Many healthcare workers reported that they place phone calls to several friends to learn if anyone has traveled to the bank and know if the salary payments have been deposited yet. This process is repeated until it is determined that the payments have reached the bank, at which point the healthcare workers all go to collect the pay.

ISSUES WITH PAYMENTS MAY – AUGUST 2016

The data for the *mSTAR Ethnographic Study* were collected in August 2016 during a period of increased tension regarding healthcare worker payments as two major changes – one intentional and one accidental – to the payment process resulted in healthcare workers receiving lower payments than they expected. First, due to a clerical error at the Ministry of Finance, tax deductions for the entire year of 2016 were mistakenly deducted from the monthly July salary payments for all civil servants. This resulted in all civil servants, including healthcare workers, receiving a much smaller amount than usual. The Ministry of Finance apologized for this mistake and offered the explanation for this issue in the news and radio. They also explained their solution for depositing a reimbursement for the extra deduction in the bank accounts of all civil servants for later that month.

While this issue was caused by an accounting error, the second issue was the result of a decision by the Government of Liberia to begin gradually shifting the payment of civil servant incentive payments from USD to LRD. The Government planned to begin this process in May by paying incentives with 50 percent

of each currency, then paying them in 30% USD and 70% LRD in June, and 20% USD and 80% LRD in July. The decision to shift incentive payments from USD to LRD was made due to concerns that there was not enough USD in circulation to continue paying incentives in USD currency.

Unfortunately, the LRD portion of these incentive payments (50 percent of incentives in May, 70 percent in June, and 80 percent in July) have not, as of October 2016, actually been paid yet. Moreover, the MOH has not communicated these changes in incentive payments to healthcare workers. Therefore, very few healthcare workers understand the cause behind their changing payments and simply assume that the MOH has drastically cut their incentive amounts. These deductions, coupled with the lack of any explanation or communication from MOH, has contributed to a wealth of frustration and anger among most healthcare workers.

"I feel very frustrated because for the past four to five months now, that's when they started deducting, when you go to the bank the salary that you are expecting you will see different one... for the past three months they have been cutting the salary." – Female, Clinical Worker, Bong County

"Any deduction made we don't know anything about at all. So it's really playing on our minds." – Male, Clinical Worker, Montserrado County

"Instead of Government increasing [salaries] they are cutting our money... is it a crime to become a health worker, does it mean that my children must not develop?" – Male, Clinical Worker, Gbarpolu County

"One month they give that 85 they cut it down to \$50 and now they cut it down to \$16... how they expecting us to live?" – Nonclinical Worker, Montserrado County

These payment issues were reported on in Liberia's local newspapers, with a heated exchange occurring between the National Health Workers Association of Liberia (NAHWAL) and the MOH. In their exchange, the NAHWAL accused MOH of slashing healthcare worker payments by 50 percent in May and 70 percent in June (22, 23). The MOH responded by claiming that the deductions were all the result of the error with the Ministry of Finance and not the fault of the MOH (24). The MOH also accused the NAHWAL of trying to disrupt the healthcare system by causing unrest among healthcare workers.

"We first want to clarify that at no time the Ministry of Health ever affected a cut or reduction in the salaries of healthcare workers as claimed by those malicious campaigners. It is the ministry's understanding that whatever cut or reduction is not only the salaries of healthcare workers but across the entire government, is a result of an oversight in calculation by the Ministry of Finance which the latter has expressed regrets for the inconvenience and faithfully promised to rectify soon." - Ministry of Health statement (24)

The issues with the incentive payments in May through July serve as just one salient example of the type of the recurring issues that healthcare workers experience with unexplained deductions to their remunerations. In addition, the lack of communication between MOH and healthcare workers, in combination with the MOH's inability to explain the deductions, fosters an atmosphere of distrust between the two groups.

HEALTHCARE WORKER CONFIDENCE IN MINISTRY OF HEALTH

Given the regular and recurring issues with remunerations to healthcare workers, it is unsurprising that many participating in the *mSTAR Ethnographic Study* expressed a lack of confidence in the MOH. This sentiment was consistent across clinical healthcare workers from all counties and all sexes, as well as among nonclinical workers from Montserrado County. As described in the section of this report on mobile phone use, the behavior and attitudes of nonclinical workers from Montserrado seem to more closely resemble those of clinical workers, rather than rural nonclinical workers. This might reflect that nonclinical workers in Montserrado have greater education or exposure to information than their rural counterparts. When asked to explain their level of confidence in the MOH, nearly all clinical workers and Montserrado nonclinical workers referenced the recent deductions to their pay, with many specifically mentioning the lack of explanation provided by the MOH. Many healthcare workers also expressed the idea that these deductions were intentional and were implemented by the MOH. These statements reflect an underlying belief that the MOH knowingly broke an agreement with healthcare workers by lowering their payments and not offering any explanation, while knowing that there was no means of recourse for the healthcare workers. Some healthcare workers even commented that the MOH didn't want to see healthcare workers making money, or that staff at the MOH were completely aloof to healthcare workers' needs.

“Somebody who is not a technician or somebody who is not a doctor sits behind an air conditioner and decide this man salary. Now if he will have to be employed with the government, the people that sit down and decide your salary, you don't know them. Because you took an oath, “I am taking this oath to help my people”. They determine your salary so anything they want to give you that are the one they'll give you. Even as an employee or as a tax payer, when they're cutting money from you, they don't tell you; you don't know anything about it.” – Male, Clinical, Montserrado County

Differences in Confidence in Ministry of Health. In stark contrast, nonclinical workers who were not from Montserrado County tended to voice support for the MOH. These groups described the issues with the current payment system and recent deductions, however they went on to say that they still had confidence in the MOH. They reported that, despite these issues, they felt confident that they would eventually receive some kind of pay from the MOH. Many nonclinical workers also went on to express gratitude and thankfulness for being employed by the MOH.

“You know I don't have confident in them for that because our money from June they just cutting our incentives.” – Male, Clinical Worker, Bong County

“We don't even trust them (Government of Liberia) because we know that if they start decreasing at this time.” – Female, Clinical Worker, Gbarpolu County

“I don't have confidence in the Ministry of Health because they are not there for us. Salary payment, forget; they don't want see us making money.” – Female, Clinical Worker, Montserrado County

“The confidence I lose in Ministry of Health was, they deducted money from me without telling me.” – Male, Clinical Worker, Nimba County

The difference in perspective between clinical and nonclinical workers is not clearly understood, however it might reflect how each group views their position and pay in general. For example, many clinical workers expressed dissatisfaction with their pay being out of alignment with their years of education and experience, often referencing colleagues who were less qualified but making the same money. Conversely, for many nonclinical workers who are serving as facility housekeepers or drivers, they likely have less education and fewer job opportunities. Therefore, the relative stability in benefits and income that their work for the MOH offers is more highly prized and they are more tolerant of issues with the payment system.

In addition, all healthcare workers at Jackson F. Doe Hospital in Tappita receive remunerations directly at the health facility. The facility is located in Nimba County, however the roads between Tappita and Ganta, where the bank is located, are notoriously poor. Therefore, representatives from the bank come directly to the facility once a month to dole out payments to healthcare workers. One healthcare worker from this facility participated in a direct observation and expressed satisfaction with the payment system.

"I still have confidence in the government when I work I am sure of something whether it improving or not improving, but I am sure of something at least to eat." – Nonclinical Worker, Bong County

"I have that trust that I am working and at the end of the day the Government have to pay me." – Nonclinical Worker, Gbarpolu County

"I have the confidence in them that, they doing well for me, yes, I want to be grateful to God and grateful to them also" – Nonclinical Worker, Lofa County

"I have 100 percent [confidence] in them to give me the little one they are giving me." – Nonclinical Worker, Nimba County

Mobile Money Use in Liberia

MOBILE MONEY IN LIBERIA

Lonestar, in partnership with Ecobank, launched its mobile money services in 2012. As of November 2015, the MNO boasted 700,000 mobile money subscribers. An estimated 30 percent of these subscribers are currently active, meaning they have used mobile money in the last 90 days. Relative to mobile money penetration averages in other Sub-Saharan African countries, Lonestar in Liberia is above average in terms of percent of the adult population with a registered mobile money account but lower than average in the percent of adults who are actively using mobile money. In addition, Cellcom, in partnership with United Bank of Africa, launched its own mobile money services in Liberia in March 2016. Both mobile money services use LRD, rather than USD, in sending and cashing out mobile money funds.

Thus far, the mobile money sector in Liberia has been dominated by person-to-person (P2P) mobile money transactions whereby an individual mobile money subscriber sends money to another mobile money subscriber. As described by *Save the Children* in their 2016 report on mobile money in Liberia, the use of mobile money for P2P seemed like a natural entry for this technology into Liberian society, given the prevalence of a "remittance culture" that developed in the 1980s and 1990s during Liberia's

two civil wars. During this time, about 30 percent of the Liberian population left the country in pursuit of safety and peace and, in 2008, an estimated 12 percent of the population was still living outside of Liberia’s borders (25). Some Liberians, dubbed the “near diaspora” fled to nearby Ghana, Cote d’Ivoire, Sierra Leone, Nigeria, Senegal, and Guinea. Others, called the “far diaspora,” relocated to the UK, US, Sweden, and the Netherlands (26). In leaving their home country, most of these emigrants left behind family members and friends who were unable or unwilling to relocate. As such, a remittance culture developed whereby Liberian emigrants would send money to their family and friends that remained in Liberia. This practice became so common that, in 2012, the World Bank reported that Liberia was ranked as the second highest remittance recipient (as percent of GDP) in the world (27).

It is in this context, in a society that was already accustomed to electronically sending money between family members via Western Union, that mobile money was first launched in 2012. In addition, early marketing of mobile money primarily focused on P2P; relatively little attention was given towards marketing the concept of mobile money to businesses. Given this, it is unsurprising that P2P payments in the form of small transactions have represented the vast majority of mobile money transactions in Liberia. Exceptions to this trend have included the use of mobile money by some utility companies and by NGOs during the Ebola outbreak of 2014. It has been suggested that the increasing use of mobile money by business and the government could serve as a catalyst for mobile money adoption among individuals and help strengthen the mobile money agent network throughout Liberia (1). Conversely, many attempts at using mobile money have also failed because the mobile money agent network is still underdeveloped. In this way, having a stronger mobile money agent network is necessary for mobile money to be successful, but it is also difficult to strengthen this network without first having a large uptake of mobile money.

Within Monrovia, mobile money has been adopted by utility, internet, and satellite television companies in order for customers to pay their monthly bills via mobile money. The Ebola outbreak in 2014 created new interest in using mobile money to send money from one party, such as a government entity or NGO, to many recipients. For example, during this time the International Red Cross used mobile money to disseminate payments to community health volunteers. In 2014, the Ministry of Gender and Development used mobile money as a means of distributing cash transfers to 20,000 food-insecure households. Also in 2014, Mercy Corp, with funding from USAID, distributed cash transfers to 81% of their targeted 130,000 beneficiaries using mobile money (28). While these projects were met with relative success, other high-volume mobile money disbursements have encountered issues. The World Bank attempted to use mobile money to disseminate funds to households made vulnerable by Ebola in 2014 but switched to having bank agents travel to communities to distribute cash after encountering barriers with mobile money.

MOBILE MONEY AGENTS

Together, Lonestar and Cellcom have an estimated 1,441 mobile money agents across Liberia (29). As can be seen Table 3, over 50 percent of these agents are located in Montserrado County and four counties have fewer than 20 mobile money agents. The mSTAR project will also be conducting a geographic mapping of all mobile money agents in Liberia, in order to better understand how healthcare workers will be able to access these agents to cash out their salary payments.

MNOs have reported barriers to both the recruitment and retention of mobile money agents. Agents gross \$60 USD per month on average and generally use mobile money as a side business to supplement their income (1). As part of this role, agents are responsible for managing their liquidity so that they can cash out any mobile money transactions that arise. As a result, those agents in rural counties are faced with a lower volume of mobile money transactions but high cost in traveling to banks to maintain an adequate cash balance. As such, rural agents have a more difficult time maintaining liquidity and mobile money is a less lucrative endeavor in these areas than in more urban areas.

In short, the same challenges in road conditions and low volume of transactions that prevent banks from establishing more rural bank branch locations might also prevent mobile money agents from proliferating in rural areas. In addition, the time and financial cost of traveling to banks that create issues for civil servants getting their pay also plague mobile money agents who need consistent bank access in order to maintain liquidity.

Table 3. Number of Mobile Money Agents, by County.

County	Lonestar	Cellcom
Monsterrado	707	56
Nimba	157	8
Bong	105	3
Lofa	85	4
Maryland	60	2
Grande Gedeh	44	2
Margibi	44	5
Sinoe	42	2
River Gee	28	0
Grand Bassa	24	6
Grand Cape Mount	23	0
Grand Kru	10	0
Bomi	9	2
Gbarpolu	8	0
River Cess	5	0
Total	1,351	90

HEALTHCARE WORKERS' USE OF MOBILE MONEY

Many healthcare workers reported having used mobile money before. In rural areas, mobile money was most commonly used to send and receive money from family members. In particular, many healthcare workers are currently working at a health facility that they have been transferred to but their family members, and often children, are living elsewhere. Mobile money is often used by healthcare workers to remit part of their income to a family member or spouse who is taking care of the children, in order to pay for living expenses and school fees. Or, if a healthcare worker has adult children, then mobile money is sent directly to the child to help cover university fees and assist with living expenses. Healthcare workers also mentioned that mobile money was useful in helping to send money for unexpected expenses, such as if a family member fell ill or if there was a funeral in the family. Some healthcare workers also mentioned receiving loans from family members via mobile money. Healthcare workers in Monrovia also reported using mobile money to pay some of their bills, such as utilities and satellite television, via mobile money.

Interestingly, of the *mSTAR Ethnographic Study's* 14 healthcare workers who were accompanied as they went to collect their monthly salary payment, five of these individuals conducted a mobile money transaction at some point in the process of going to collect their pay. One of these transactions was when a healthcare worker received money from a relative, in order to cover the cost of traveling to go collect her salary. The other four transactions involved healthcare workers sending money to family members immediately after collecting their pay.

HEALTHCARE WORKERS' ATTITUDES TOWARDS MOBILE MONEY FOR SALARY PAYMENTS

When focus groups of healthcare workers were asked about their thoughts on the use of mobile money for remuneration of salary and incentives from the MOH, the responses were mixed. While many healthcare workers expressed interest in the idea, support was often conditional upon the resolution of issues regarding liquidity among mobile money agents and reimbursement for cash out fees.

"[Mobile money] will be easier for everybody to get their money... Whenever you get your message money, will be ready for you to go... I embrace the mobile money sector; it will be fine for the employees." – Nonclinical Worker, Bong County

"Who will be responsible for the deduction, if they have decided to be paying us through Mobile Money." – Female, Clinical Worker, Lofa County

"My concern is the same way we are suffering from the bank that there are some deductions that can be made we are not aware." – Male, Clinical Worker, Bong County

Of the concerns regarding use of mobile money, issues around ensuring adequate liquidity with mobile money agents was mentioned the most. Those healthcare workers who had used mobile money previously cited times that they or the person they were attempting to send money to, were unable to cash out the mobile money due to the mobile money agent lacking the necessary cash. Healthcare workers were concerned that mobile money agents would not be able to keep enough cash on hand to pay out salaries and incentives to participating healthcare workers. In such a situation, healthcare workers feared that their money might become trapped in their digital wallet and they would be unable to withdraw it.

Healthcare workers also consistently mentioned concerns over who would be responsible for paying the cash out fees associated with withdrawing money from their digital wallet account. Those who were experienced with mobile money seemed to have a firm understanding of the fees and how they are proportional to the amount of money being withdrawn.

Interestingly, a few healthcare workers expressed concern that the same issues that plague the current direct deposit payment system would also persist with a mobile money payment system. For example, issues around lack of adequate liquidity, long lines to withdraw money, and the levying of unofficial "fees," all of which are major complaints with the current direct deposit payment system, would also be issues with the mobile money payment system. Many of the constraints, such as poor road infrastructure and difficulty in managing liquidity when civil servants rush to collect pay, would affect mobile money agents in the same way that banks are affected. Moreover, these issues might more easily overwhelm mobile money agents than they would banks, as the mobile money management infrastructure is not as well-developed as the bank management infrastructure.

A few healthcare workers also mentioned concerns regarding security of using mobile money to receive payments. These security concerns took two forms: concerns about being able to retrieve money if their mobile phone was stolen and concerns regarding criminals targeting healthcare workers who are withdrawing cash from a digital wallet. The first of these concerns could be addressed through education, assuring participants that their funds would not be lost if their phone was stolen. Indeed,

healthcare workers with experience in using mobile money already seemed to understand this fact. The second concern, regarding the safety of carrying large sums of cash, is also a concern with the current direct deposit system as individuals leave the bank with large amounts of cash and could be preyed upon.

MSTAR USE OF MOBILE MONEY TO PAY TEACHERS

In July 2016, the mSTAR project began its roll-out of mobile money for use in paying salaries to teachers in Nimba County. This first disbursement began with a group of 67 teachers, who were able to collect their salary via mobile money and reported time savings in using this method over the direct deposit payment system. The average amount of time taken to cash out the mobile money payment was 25 minutes. In contrast, the *mSTAR Ethnographic Study* found that healthcare workers in Nimba County took a median of 6 hours to collect their salary. Ninety-seven percent of teachers reported that they were satisfied with the process of collecting their pay via mobile money. In phone and in-person interviews with these teachers, many expressed that the process of collecting their pay was easy and an improvement of the direct deposit payment system.

“He is happy with the mobile money payment process because he does not take long time to collect his salary. He says that, the maximum time he spends is 30 minutes and it is easy and stress free.” – Male, Teacher, Nimba County

“She also told me that using mobile money is also very much comfortable for her especially now that we are in the rainy season, the road conditions are so bad for them to be traveling up and down to the bank in Ganta for their payment.” – Female, Teacher, Nimba County

Political Context

Liberia is scheduled to have a presidential election in October 2017. President Ellen Johnson Sirleaf, who has served as president since 2006, will step down in order for a new president to be elected. The 2011 elections were accompanied by attacks on various political candidates and violent protests, however optimism for a peaceful election in 2017 remains high. As of October 2016, seven individuals have announced their candidacy for president, with several of these campaigns calling for a peaceful election cycle. While it is difficult to predict how these elections will unfold, the possibility of civil unrest and protests around the election persists and could retard progress in implementing a mobile money payment system for healthcare workers if logistics, such as transporting cash between banks and mobile money agents, are impacted by protests.

Project planning and implementation might also face challenges in the time leading up to the elections as work within the MOH might slow down. In Liberia, many members of government ministries are political appointees, meaning that the imminent election of a new president can result in ministry staff facing a period of uncertainty as to whether or not they will retain their jobs. This can result in an overall slowdown in work flow in ministry offices and can impede the work of partners who are dependent upon ministry support for project implementation. This slowdown can continue in the

months following an election as the ministry transitions to reflect the new administration's appointments.

Given that the presidential election will likely result in a large amount of turnover in the leadership positions of government ministries, partner organizations will need to educate new ministry leaders on the value and importance of their projects. In this way, partners will need to seek buy-in and support from newly-appointed government ministers in order to continue receiving support from the government. Although there is no guarantee that the newly appointed leaders of MOH will be supportive of using mobile money to pay government healthcare workers, the issues with the current payment system and general popularity of mobile money suggest that the project would be accepted by the new Minister of Health and his/her staff. The phase of implementation that the project has achieved by the time the new ministry staff are appointed might also impact how the project is received. For example, if the project has already succeeded in piloting the use of mobile money payments with some healthcare workers at the time that it is presented to new ministry staff then this might increase the new minister's enthusiasm for the project.

Conclusion

The Government of Liberia's system for paying its civil servants has changed dramatically over the last two years, prompting government-paid healthcare workers across the country to open bank accounts in order to receive remunerations. While this system has succeeded in reducing the incidence of bribes in the payment process, it has also caused the disbursement of salary payments to be dependent upon a system of financial institutions that is underdeveloped in rural areas. As such, healthcare workers in rural areas must travel great distances to reach bank locations. Bank branches often struggle to maintain liquidity as they face monthly deluges of civil servants seeking to cash out their salary payments.

The result is a costly and time-consuming process for healthcare workers who wish to collect their pay. These issues, paired with inconsistent timing and unexplained deductions from payments, contribute to an atmosphere of frustration. For clinical healthcare workers in all counties and nonclinical workers in Montserrado County, these feelings can also manifest in a lack of confidence or trust in the MOH for payments.

Mobile phones are a way of life in Liberia and healthcare workers use them for both personal and work-related purposes, although clinical workers seem to use phones more than nonclinical workers. Many healthcare workers use mobile money for remitting money to family in other parts of the country. When asked about the possibility of using mobile money to receive payments from the MOH, healthcare workers had mixed responses and many expressed concerns regarding mobile money agents' ability to manage liquidity and responsibility for paying cash-out fees.

Projects that aim to use mobile money to pay healthcare workers will need to address these concerns by improving ability of mobile money agents to maintain liquidity, educating healthcare workers, and identifying a solution to cash out fees that healthcare workers will accept.

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