

Grappling with Gatekeepers:  
Addressing Gender Hindrances to mHealth

Jack O'Rourke

Advisor: Dr. Paul Muwanguzi

Academic Director: Dr. Charlotte Mafumbo

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## Abstract

This study was conducted in order to understand the social and economic problems associated with Ugandan women's usage of mobile phones and the ways in which different mHealth groups are approaching these problems. Seeing how these different groups approach this issue added new information and analysis to a relatively unexplored topic.

The qualitative methodology undertaken was two pronged. First, single sex focus groups in rural Mukono District were assembled. Men with phones, women without phones and women and with phones were all talked to in Luganda with the use of a translator. In addition to these focus groups in rural Mukono District, a transect walk was also conducted to see the challenges women had when trying to charge their phone. After data on the challenges women faced was themed, this information was compiled in order to interview three representatives from four organizations (mTrac, U-Report, Text to Change and Health Child). These interviews were conducted in order to see what mHealth groups were doing to address the challenges. This data was then cross-referenced against the findings from the field and literature to see if the approaches were suitable for the matter at hand.

The study showed that the challenges facing women were immense, both socially and financially. Not being able to buy airtime, or being under the threat of GBV because of phone use were realities for the women talked to. From analysis, it was clear that mHealth groups were cognizant of these issues and are innovative approaches to incorporate women in their programs. Yet, there were small gaps in some approaches to micro-issues found in the field. These gaps are fixable given the innovation demonstrated by mHealth groups.

## Glossary

**ARVs**-Anti-Retroviral Drugs; Used for treating HIV/AIDS.

**Airtime**-Pay as you go credit for mobile phones

**FGD**-Focus Group Discussions

**FLWs**-Front Line Workers

**GBV**-Gender-Based Violence

**HIV/AIDS**-Human Immunodeficiency Virus/Acquired Immunodeficiency Virus

**HMIS**-Health Management Information System

**ICT**-Information Communication Technologies

**M4D**-Mobile for Development

**MDG**-Millennium Development Goals

**mHealth**-Mobile Health

**MNCH**-Maternal, Newborn and Child Health

**Shillings**-Ugandan Currency. As of 2014, 1 USD equals 2500 shillings.

**SMS**-Short Message Service

**TTC**-Text to Change

**UNDP**-United Nations Development Project

**UNICEF**-United Nations International Children's Emergency Fund

**VAW**-Violence against Women

**VHTs**-Village Health Teams

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## **1.0 Introduction**

This study was conducted in order to see how the mHealth field is approaching women's challenges to mobile phone use in Uganda. The focus was two pronged. The economic and social hindrances to women's mobile phone usage in rural Mukono District were first examined. Then, these hindrances were taken and, along with the literature on the subject, were used to question mHealth groups on their strategies to overcoming these challenges when implementing programs. The information obtained from the mHealth groups gave an in-depth look at how mHealth is incorporating women in Uganda. This data was then used to make recommendations for future, gender sensitive, work in mHealth. Hopefully, these recommendations will help improve a new and ever-evolving industry that is doing innovative work to improve Uganda's poor public health. What follows is look into the different problems associated with women's phone use and the ways in which mHealth is attempting to overcome these issues.

### **1.1 Location of Study**

The first part of the study (figuring out challenges to usage), was conducted in rural Mukono District near the towns of Kalagi and Nakifuma. Mukono District is in the Central Region of Uganda, 21kms east of Kampala City. The local language in Mukono District is Luganda, and most people belong to the Baganda Tribe. Over 80% of Mukono's industry is Agriculture (NPA, 2010). This area was chosen as the location of study because of its proximity to Kampala and the fact that the vast majority of Ugandans live in rural areas (84%) (World Bank, 2012). After conducting research in the field with rural residents of Mukono, the location of research was moved to Kampala in order to talk with mHealth representatives. Kampala, the capital and largest urban area in Uganda, was selected because many mHealth groups operate in and around the city. One interview with an mHealth representative was also conducted in Jinja,

about 2 hours from Kampala. Because both parts of the study had very different objectives, it made sense that different areas were chosen to research in.

## **1.2 Background of the Mobile Phone in Sub-Saharan Africa**

In order to understand mHealth in Uganda, one must contextualize the issue by understanding the history of mobile phones in Sub-Saharan Africa, and by default, Uganda. Africa “leapfrogged the landline” due to the lack of infrastructure required to build a substantial fixed line network. Africa embraced the mobile phone, because, instead of having to laying down wires in every single community (which is necessary for landlines), Sub-Saharan Africa’s mobile phone coverage is provided by base stations that provide service from a 5-10 kilometer radius (Aker & Mbiti, 2010). The relative ease of building a mobile network has been seen in Uganda. In 2009 only 0.6% of Ugandans had a landline, barely up from a mere 0.3% in 2000 (Ranganathan & Foster, 2012). Compare that with the fact that 45.9% of Ugandans used mobile phones in 2012 versus 5% in 2000, and it becomes evident that mobile phone adoption rates have run circles around landlines in Uganda (UNICEF, 2012). Uganda’s speedy “leapfrogging” of landlines is possible because, according to GSMA, 75% of the country is covered by mobile networks (2013). Adoption rates of mobile phones throughout Sub-Saharan Africa have also risen rapidly at 18% over the last five years, with 253 million unique subscribers in the region alone. This makes Sub-Saharan Africa the fastest growing region in the world when it comes to mobile phone adoption (GSMA, 2013).

Along with the bypassing of previous infrastructural concerns, mobile phones represent a cheaper alternative to traditional communication technologies such as a computer. This is especially important in a low-income country such as Uganda, where 38% of people live under \$1.25 Purchasing Power Parity (PPP) per day (UNDP, 2013). While the first Sub-Saharan

African adopters of mobile phones were young, educated, wealthy, male and urban, the second wave of adopters were from all over the demographic spectrum. According to Aker and Mbiti, “By 2009, mobile phone ownership included more poor, elderly and rural individuals, in part facilitated by the introduction of lower-priced handsets and lower-denomination airtime cards.” (Aker & Mbiti, 2010, p. 212-213). The low cost of these phones has allowed for the high rates of adoption throughout some of the world’s poorest countries.

### **1.2.1 Uganda’s Health Challenges**

While the mobile industry is revolutionizing telecommunications in the Uganda, the country’s health challenges remain an enormous challenge. As a poor country crippled by diseases such as HIV/AIDS, Malaria and Tuberculosis, Uganda faces immense barriers to developing into a middle-income country. In Uganda, 7.2% of adult Ugandans are HIV positive, only 59.8% of households own a mosquito net, the under five mortality rate is 69 children out of 1,000 and the average life expectancy is 58.7 years old (UNICEF, 2012). These barriers to a healthy populous are reasons why, in 2002, the United Nations started the Millennium Project in order to address widespread poverty, hunger, and disease. This project constructed eight goals to reach by 2015 in order to reduce poverty and health issues in the developing world. Of these eight goals, three of them deal with health issues that plague Uganda and the rest of the third world. They are development goal number 4 (reducing child mortality), development goal number 5 (improving maternal health) and development goal number 6 (combat HIV/AIDS, Malaria and other diseases) (UNDP, 2013).

### **1.2.2 Mobile Health in Uganda**

As discussed in section 1.3, mobile phones have been rapidly adopted in Uganda, a country that faces numerous health challenges. It is in this health-burdened context that different



organizations have begun using these phones for health purposes in Uganda. By utilizing basic SMS technology, organizations are now able to perform numerous functions, from reminding HIV positive people to take their ARVs, to having health workers report on drug stock supply. Both Deshmukh and Michael state that “Mobile technologies can improve quality of care by connecting clients with healthcare providers, streamlining data collection, providing diagnostic treatment and support, and facilitating health care worker training and communication.” (2013, p. 10). In Uganda, a country that has vast regions unconnected by road, mHealth can help bypass some of the infrastructure concerns that could have previously limited health work (Ranganathan & Foster, 2012). Boakye, Scott and Smyth confirm this notion and state that, “the value of the system is greater in locations where conventional systems (eg. sending paper documents) is difficult, time-consuming and expensive.” (2010, p. 4). Many NGOs have taken note of mHealth’s benefits, so many that—in 2012 the Ministry of Health put a moratorium on new mHealth groups coming into the country (Appendix 1). Yet, this field is one that continues to garner attention as an innovative, 21<sup>st</sup> century approach to public health crises.

### **1.2.3 Communication for Social Change**

Mobile health is rooted in communication for social change, a field that has had numerous approaches since its post-WWII inception (Waisbord, 2001). When discussing mHealth initiatives it is important to understand these various approaches, namely social marketing, health promotion and participatory communication. Social marketing aims to have a top-down approach to communication. By simply informing people and treating concepts like products, social marketers hope to change behavior, not attitudes (Waisbord, 2001). Health promotion, which aims to combat health problems, was originally driven by the view that “individual behavior was largely responsible for health problems” (Waisbord, 2001, p. 11). This

approach was criticized as “victim blaming,” and later changed when the concept of health education, not promotion, “stressed the importance of social and environmental changes.” (Waisbord, 2001, p. 11-12). Participatory communication, which also draws upon this commitment to contextualize the current environment, is defined as “the systematic utilization of communication channels and techniques to increase people’s participation in development and to inform, motivate, and train rural populations mainly at the grassroots” (Waisbord, 2001, p. 18). When analyzing specific mHealth aspects, theoretical knowledge of these approaches is useful in order to properly contextualize the field.

### **1.3 Literature Review of Gender in mHealth**

In order to properly comprehend this issue, it is crucial to have an understanding of the literature available concerning the global concern of gender, gender issues in relation to ICT and mHealth in general.

#### **1.3.1 Gender as a Global Concern**

Gender and its relation to mobile phones has been the topic of many studies, notably “mWomen,” and in Uganda, “Gender Relations and ICT Adoption in Contemporary Uganda.” mHealth, a field which is relatively new, has gained gender-focused research from groups like mHealth Alliance, and writers such as Jennings and Gagliardi. These studies reflect Mobile for Development (M4D)’s acknowledgement of the global emphasis on gender equality. Millennium Development Goal number 3 (promoting gender equality and empowering women), is becoming a necessity for mHealth groups to address when working to fulfill goals 4,5 and 6. This is a legitimate concern because research has shown that many gendered-problems occur when women use phones (Fascendini & Fialová, 2011). The UNDP states that, “Violence against

women continues to undermine efforts to reach all goals.” (2013). In order to properly fight for MDGs 4,5 and 6, mHealth groups must also fight for MDG 3.

### **1.3.2 The Mobile Divide**

To contextualize the gender problems with mHealth, focus must be shifted on to the mobile phone gender-gap. GSMA’s extensive study on the topic, titled “mWomen,” says that “Nine in ten women report feeling safer and more connected because of their mobile phone.” (2010, p. 6). Yet, this study also states that a man is 23% more likely to have a phone than a woman in Sub-Saharan Africa (GSMA, 2010). As “Evaluating Shared Access” states, in rural Uganda, “Many women reported that the phone they used belonged to their husband” (Burrell, 2010, p. 236). When viewed side-by-side, these studies show a clear link between patriarchy and mobile phone ownership in rural Uganda. One of the most useful studies on women and mobile phones in Uganda is Dr. Aramanzan Madanda’s 2010 thesis, “Gender Relations and ICT Adoption in Contemporary Uganda.” In this multi-faceted approach to ICT and gender, Madanda dives into the problems concerning women’s ownership and use of mobile phones. He finds that there are both economic factors and cultural factors that limit women’s use of the technology (2010).

### **1.3.3 Mobile Phones and Social Problems**

While it is clear that there are several barriers for a woman trying to obtain a phone in Uganda, there are also several challenges that occur due to women’s usage of these mobile phones. In Madanda’s 2010 study, 36 out of 100 rural Ugandans interviewed said that owning and using a mobile phone had worsened their relationship with community members (2010). This worsening relationship often affects women and can even perpetuate gender-based violence (GBV) towards them. In a 2011 study on ICTs and GBV, Fascendini and Fialová found that,

technologies such as the internet or mobile phones are a double edged sword. On the one hand, they can be used to perpetrate VAW...At the same time ICT's are platforms that women can use to demand their right to a life free from violence. (2011, p. 20).

The "double edged sword" is one that should make people turn their heads. The fact that 85% of women reported their phone made them feel independent, can often threaten men, who in Madanda's study, reported that one of the biggest problems with mobile use resulted from envy (GSMA, 2010; Madanda, 2010).

#### **1.3.4 Gender Challenges and mHealth**

While there is a good amount of literature on stigma concerning women's use of mobile phones, there is much less literature on the gendered challenges mHealth specifically faces. In Mattsson and Sabuni's 2013 study on challenges mobile health in Uganda faces, they found gender to be a major problem in the implementation of mHealth programs. They also found that only one NGO they talked to is targeting men to help women use mobile phones (2013). One of the biggest questions in mobile health comes from a 2013 literature review that asked if some mHealth interventions exacerbated gender inequalities. This review found that "mobile interventions can beneficially influence gender relations, while at the same time strain and reinforce existing power imbalances." (Jennings & Gagliardi, 2013, p. 8) The review also found that many men would take up mHealth interventions that targeted women (Jennings & Gagliardi, 2013). The literature is clear that, when implementing these interventions, mHealth groups need to be extremely sensitive to the gender problems associated with mobile use.

#### **1.3.5 A Framework for Gender Analysis in mHealth**

In order to analyze women's empowerment in mHealth initiatives, one must consult the international framework constructed for the mHealth Alliance and the UN Foundation in 2013

(See Appendix 2). This framework was specifically made to address Maternal, Newborn and Child Health (MNCH) mHealth initiatives because these programs specifically address the global commitment to MDGs 4, 5, and 6 (Deshmukh & Mechael, 2013). And, as section 1.4.1 stated, these goals should be addressed in a way that also addresses MDG number 3. The framework sets out four domains that need to be addressed when creating a gender sensitive mHealth campaign. They are; development of technology and content, policy-making and implementation, providers of health services and clients of mHealth services. While making sure these four domains are addressed, the initiatives should also focus on addressing the critical focal issues which are; “engaging men as partners; addressing gatekeepers”, “addressing GBV” and “addressing social and cultural norms” (Deshmukh & Mechael, 2013, p. 18). When these domains and issues are addressed properly, women’s voices are able to participate in a way that allows the initiative to engage them in achieving MDGs 4,5 and 6.

#### **1.4 Justification for Study**

Research of this topic is justified because, as Jennings and Gagliardi state, literature on this subject is weak (2013). Both researchers also state that, “Rigorous research that examines gender relations either as a stand-alone study or embedded within existing experimental mHealth trials is urgently needed.” (Jennings & Gagliardi, 2013, p. 9). This study will add new research will be added to an area that desperately needs it. While the gendered framework for mHealth was informed by an international approach during the Women, ICT and Development International Development Forum, applying the framework to Uganda will allow evaluation of the issue in a country whose mHealth field is extremely robust (see 2012 moratorium). This research will not only call attention to women’s usage, but also demonstrate the different strengths and weaknesses of certain approaches to incorporating women into mHealth programs.

The study will allow a new field to better understand the positive and negative approaches it takes when dealing with gender.

## **1.5 Objectives**

This study attempted to accomplish the following objectives:

- To understand the economic and social challenges associated with women's mobile phone usage.
- To apply Deshmukh and Mechael's framework to the challenges Ugandan women face.
- To use Deshmukh and Mechael's mHealth framework to see different Ugandan mHealth organizations' strategies towards addressing these problems.
- To find out what positive and gaps exist in the organizations' approaches to incorporating Ugandan women into mHealth initiatives.
- To make recommendations of how to address the issue in the future.

## **2.1 A Qualitative Methodology**

This research was conducted in a qualitative manner in order to properly collect data on challenges to women's mobile phone usage and ways which mHealth groups were dealing with these challenges. Because data fixated on attitudes, challenges, and strategies would not be suitable for a quantitative analysis, a qualitative approach was deemed more appropriate. As section 1.5 states; the issue of gender in mHealth interventions is relatively unexplored. In order to explore the issue, methods and tools were utilized in a manner that allowed data collection to be adaptable and fluid to different situations and answers. The flexibility of this study's data collection was key, especially given the sensitive nature of gender relations. Using a qualitative approach allowed a hands-on approach that gave the research knowledge of what to explore and not explore in a deeper fashion. This aspect was incredibly important, especially when trying to

flesh out what attitudes, beliefs and cultural values exist around a woman's usage of a mobile phone. The qualitative methods and tools used allowed a great deal of information required to properly reflect the objectives with which this study set out to achieve.

## **2.2 Data Collection Methods**

Three main methods were used within this study to collect data; focus group discussions (FGDs), one-on-one interviews and a transect walk. While all these data collection methods were all conducted in order to properly meet the study's objectives, each method was chosen in order to contribute a unique piece of data. The FGDs were conducted in order to give information about the unique set of mobile-phone challenges Rural Ugandan women face. The groups were all single-sex (see why in section 2.6) and all but one was conducted (via a translator) in Luganda. All focus groups were conducted in rural Mukono District (see section 1.2). In addition to these focus groups in Mukono, transect movements were also made in order to understand the distances women must go to charge their phones. In Kampala, the methods switched towards one-on-one focus group interviews to get a look at the approaches mHealth groups were taking towards the issues that came up in the focus groups. These methods, which helped form the findings, are fruitful to look at in an in-depth manner.

### ***Female Focus Groups***

Five FGDs were conducted with women, of these five; four groups consisted of women who owned phones (Appendix 3). Each single group of these women reflected an important aspect of the issue. The first group (FGD 1), the only one conducted in English, consisted of 11 women employed (many as nurses) at Nagalama Hospital. This group was chosen because they had steady employment at a skilled job, their higher social status was reflected in their collective fluency of English. The second group (FGD 2) was made up of 7 18-19 year old women who

were not married and were going to trade school. Conducted in Luganda, this group was chosen because they gave insight into the different, non-spousal gatekeepers to young women's mobile phone usage. The third group (FGD 3), conducted in Luganda, consisted of 6 pregnant women at Nagalama Hospital who were selected because they could give special insight into how they used their phones for accessing healthcare. The fourth group of women with phones (FGD 5) (also conducted in Luganda), was made up of 14 women at an immunization center in Kalagi town. These women were chosen because their rural background gave them first-hand experience of rural Ugandan attitudes towards mobile phone usage. The other group of women (FGD 4) (conducted in Luganda), contained 8 women who did not own a phone. These rural women, most of them farmers, offered a look into the social and economic factors that stop rural Ugandan women from owning phones.

### ***Male Focus Group***

In addition to the five female-only focus groups, one male-only focus group discussion was performed (FGD 6) (Appendix 3). This discussion was purposely conducted after the female focus groups in order to gain insights on men's attitudes versus female's attitudes on mobile phone usage. These 12 men, mostly married, gave unique perspectives on women's usage and offered a counterbalance to the previous data collected. In comparison to the female-only groups, these men were much more willing to share information and attitudes. One FGD with men was sufficient in understanding some of the challenges women go through from a male perspective.

### ***Transect Movement Around Nagalama***

Many of the findings from the focus groups, the interviews and the literature presented phone charging as a major challenge to mobile phone usage. In order to properly look into this



problem, a transect walk was made in Nagalama town, Kalagi town and Nakifuma town to gauge how far community members would have to travel to charge their phones. This movement was made between 10 AM and 1 PM on May 7<sup>th</sup>, 2014. This method was aided by the use of a guide who was well acquainted with the community (see section 2.5.2). In order to see the costs of charging a phone, what the gender breakdown of customers was and how far people would journey to charge their phones, four phone charging station operators were consulted (via a translator). These movements and interviews gave a well-needed wide-angle view into this specific challenge.

### ***Interviews with mHealth Representatives***

After gaining research from focus groups and transect movements in Nagalama, questions related to the findings were directed towards representatives from three mHealth groups via one-on-one interviews (Appendix 4). These interviews were conducted with representatives in order to find out how mHealth as a whole and their organization in particular is addressing the gender hindrances to mobile phone use when building a program. The three different representatives were chosen from three unique types of mHealth groups. The first interview was conducted with Neema Iyer, Project Manager, Text to Change (TTC). Conducting an interview with Neema was important because TTC is an international M4D organization that builds a variety of different interventions for a variety of different partners. Seeing what a large-scale M4D organization like TTC does to incorporate women into mHealth programs was very different from my meeting with Sean Blaschke, the Health System Strengthening Coordinator at UNICEF Uganda and a man instrumental in development of both mTrac and U-Report. Discussing mTrac with Sean allowed the study to see how the Ministry of Health ran an mHealth program differently than an NGO. Sean also provided valuable information on U-Report and,

because of his 10 plus years in the business, opinions on gendered-strategies for mHealth. The conversation with Irongo Daniel, ICT officer Health Child, was way to see how this maternal and child health focused NGO uses mHealth. The one-on-one interviews allowed important data to be collected from sources; that while within the same field, operate in different fashions.

### **2.3 Data Collection Tools/Instruments**

When collecting data, two specific tools were used, interview guides and the construction of a transect map. During the focus groups, three distinct interview guides were constructed in order to cater to the three different focus groups that were conducted (appendix 5). There were specific interview guides for women with phones, women without phones, and men with phones. This allowed the discussion, and ultimately the data, to reflect the varied attitudes and information gleaned from previous research. An interview guide was also constructed for conversations with mHealth organizations (see appendix 6). In order to assure that the representatives were addressing issues that were pertinent, this guide was built from the data collected from the focus groups as well as the literature (namely Deshmukh and Mechael's framework). To properly address some of the different interventions, the guide slightly adapted to each organization's background and overall approach. A transect map was also drawn in order to help visually conceptualize the data collected via the transect movements and conversations with phone charging station operators. By visually showing the immense distance people had to go to charge a phone, the research became much more informed and cognizant of the issue. These tools gave the methods structure that kept the qualitative research on track and allowed data to be collected efficiently.

## **2.4 Data Analysis**

After collecting data from focus groups, transect movements and interviews, a thorough data analysis was conducted. This data analysis used the technique of “theming” in order to make sense of the vast amount of transcribed focus groups and interviews. Focus groups 1,2,3,5 and 6 were analyzed as part of women who own phones (FGD 4 was put in the category of women without phones). The data was analyzed in a way that picked out major themes of conversation and then placed quotes in categories. For example, there were many women talking about late night phone calls and the challenges associated with them. This became a category for both female and male responses. These categories primarily were built to figure out the major challenges towards usage. The same “theming” was conducted with the mHealth interviews in order to find out how these organizations dealt with these problems. These themes were then placed in the four domains from the Deshmukh and Mechael’s Framework. It should be noted that focus groups were themed first and interviews themed second, so some of the interview’s categories were influenced by the focus groups’. Cross-referencing these two groups of data allowed positive and negative mHealth strategies to shine through.

## **2.5 Challenges to Methodology**

In the following sub-sections, the different problems encountered while conducting the study will be explored. As will be shown, these problems, whether methodological, logistical or originating from “status,” were all overcome in a way that allowed data collection to be a successful endeavor.

### **2.5.1 Methodological and Logistical Problems**

Throughout data collection, a few challenges presented themselves that resulted from both the methodology undertaken, as well as logistical concerns during data collection. Because

of the qualitative approach, questions could often be too open ended, and not tight enough to get the answers the study required. This challenge was overcome by tightening the interview guide and not always trying to dictate where the research would go. In order to adapt, the interview guide began to be used as more of something that would give direction, rather than an all-important, literal document. The qualitative methods as a whole also presented a sense of doubt and insecurity. But, instead of switching approaches, a much more extensive literature review was done to unravel the already existing quantitative data on women's phone usage. This reassured the study and allowed the qualitative approach to fully flourish alongside the already existing quantitative research.

While a few problems resulted from the methods used, the logistical concerns were generally muted due to the skilled guide who helped set up focus groups and transect movements. Yet, one logistical concern did result during the focus group discussions. In FGD 5, many different women kept entering and joining the discussion in the middle of data collection. While welcomed, the group quickly blossomed to a size too large to have meaningful discourse. In order to counter this, the interview guide was tightened and the original group of women were focused on rather than the numerous people who had tried to join in. While these methodological and logistical challenges made data collection more difficult, adaptability of the research allowed them to be dealt with swiftly.

### **2.5.2 “Status” Problems**

In addition to the challenges the research had with methods and logistics, there were also problems conducting this research and being a white, American-born man who cannot understand Luganda. Language was a large problem in focus groups, so in order to deal with this, a translator was utilized for all five focus groups conducted in Luganda. After the focus

groups, this translator would help transcribe recordings in order to pick up intricacies he/she was noticing throughout the focus groups. There were also challenges with being a male, considering five of the focus groups were female only. Because this could make subjects feel uncomfortable, a female translator was brought in in order to communicate with groups in a way that would make them feel much more comfortable discussing gender relations in their community. On the flipside, when conducting FGD 6 with men, there were no females in the room and the translator was a man. With both genders, all efforts were undertaken to create a safe space where people felt unthreatened and free to contribute. As an outsider who was not native to the community, there were also challenges on getting people to participate. This was addressed through the use of a guide, the public health coordinator for the area and a man extremely well known to the community. By having him coordinate focus groups, many of the logistical concerns as an outsider were done away with. These challenges were expected, which allowed the research to be planned in a way that dealt with them.

## **2.6 Ethics**

When doing research on a topic as sensitive as gender relations, it is important that a strict code of ethics be adhered to. In order to even start collecting data during focus groups or organizational interviews, consent had to be received from the participants. In the focus groups, the topic of the study was made clear, as was the usage of a recording system and the fact that all of the contents of this research would be confidential, with all the participants staying anonymous. Because of the language barrier, as well as the illiteracy of some subjects, consent was given verbally. The confidentiality served to give people a sense of security that allowed them to participate freely in a rural area where word could get around about the contents of these sensitive discussions. With the mHealth organizations, a consent form (see appendix 7) was used

at the beginning of the interview. This form was signed and a copy was given to the participant as a record of the encounter. This formality was in order to ensure that the mHealth representatives were knowledgeable about the study and okay with being included in the study. The representatives were also asked if their names could be used, and all said yes. Gaining consent and confidentiality ensured that data collection was conducted in an ethical manner.

### **3.0 Findings**

In this next section, the findings from focus groups and interviews will be discussed. In order to proceed in a logical order, the first portion of findings will discuss findings from focus groups, namely women without mobiles and women with mobiles. The next section will use Deshmukh and Mechael's framework to see how the different mHealth groups met with are addressing the findings from the focus groups.

#### **3.1 Challenges for Women without Mobiles**

For women without cell phones, the main barrier towards acquiring a mobile phone was lack of economic means. All 8 women in FGD 4 self reported that they wanted a phone, but they did not have the money. Five even stated if they had the money to purchase phones, it was a secondary financial concern. One woman said, "You can get the money [for a phone], but then you fail to get, the phone is secondary." (Female 01, married). All the women reported their husbands wanted them to own a phone, but did not have the money to purchase them one (yet, three of these women's husbands owned phones). The findings for this group did not point at any social barriers towards ownership, just economic. As will be shown in section 3.2.2, social barriers towards usage are much more pronounced for women who already own a phone.

## **3.2 Challenges for Women with Mobiles**

In the following sections, FDGs 1,2,3,5 and 6 will be looked at in order to see what the major challenges, both economic and social, are to women's mobile phone usage. In addition to hearing women's take on the issue, the all-male FGD 6 will be looked at to understand the attitudes and reasons behind some of these challenges.

### **3.2.1 Economic Challenges**

In focus group discussions (as well as the transect movement), three major economic concerns were reported; the purchase of phones, airtime usage and the charging of cell phones. For purposes of this study, it is beneficial not to view each challenge in a bubble. Rather, these challenges should be viewed as a connected web that places a burden on an already poor, rural populace.

#### ***Purchase of Phones***

In FDGs 1,2,3 and 5, 70% of the 30 female respondents reported that someone else purchased their phone for them. 14 of these purchases were done by romantic partners, but in FGD 2, 4 out of the 6 18-19 year old, unmarried women reported that someone in their family purchased them their phone. This points that there are economic gatekeepers other than spouses when it comes to the purchase of phones. While the purchase of these phones appears to be a relatively unproblematic issue, findings in section 3.2.2 show that gatekeepers who purchased the phone for their wives or family members sometimes believed that it gave them the authority to limit their use of the mobile phone.

#### ***Airtime***

Focus groups 1,2,3 and 5 were also upfront about the problems associated with purchasing airtime. While a majority of women had their phone purchased by somebody else, out

of 27 female respondents, 74% stated that they purchased their own airtime. Once again, FGD 2, full of young, unmarried students, was the outlier, as all 6 of them indicated that they relied on their family or boyfriend to purchase them airtime. It was clear that these young women were much more reliant on family members to economically support their phone usage.

A majority of respondents also indicated that they spent less than a dollar a week (2,500 shillings) on airtime. Two women even indicated that they spent less than 20 cents a week (500 shillings) on airtime. This amount of money, while seemingly low to Westerners, was reported to be a great sum of money to be paid every week. The inverse relationship between purchase of phones and purchase of airtime show that gatekeepers will often purchase women phones, but will not supply airtime, no matter how little is used a week.

### ***Charging Phones***

Through short interviews with phone-charging store employees in Nagalama town, Kalagi town and Nakifuma town, it became clear that, for women without electricity, it was both logistically and economically burdensome to charge their phone. This is a pressing matter because (according to 2010 statistics) only 10.3% of households in Mukono District have access to electricity (NPA, 2010). According to multiple employees at different stores, the lack of electricity in villages forces people to come as far as 10 kilometers to charge their phone. This would require lots of time and money for transport, as well as the 500 shillings for charging the phone. One employee in Nakifuma town indicated that people (always women) would often beg to have this price reduced to 300 shillings. It was also reported that men would charge their phones more than women. It was evident that charging phones added economic burden to already poor, rural women who could hardly afford small amounts of airtime.



### **3.2.2 Social Challenges**

In addition to the economic barriers to mobile phone use, many social challenges also were found. Most of these social challenges resulted from gatekeepers, especially male spouses. In the next section, the challenges, as well as the patriarchal attitudes behind said challenges will be explored.

#### ***Language/Literacy***

Many women in the FGDs could not speak or understand English, all the FGDs except FGD 1 were conducted in Luganda. Many also reported being illiterate in English, Luganda or both. This falls inline with Uganda's literacy rate. Only 64% of women over 15 are literate, this is compared to 78% of men (WHO, 2013). This presented an obvious challenge when it came to being able to read SMS messages or even listen to voice calls in English.

#### ***Negative Male Attitudes***

Many men in FGD 5 had a very insecure and negative outlook on women's usage of phones. Six of the men, when asked about their attitudes towards women owning a phone explicitly stated that they had concerns that they use it for soliciting sex and cheating on their husbands. Two men stated that, while the phone was not bad, but women can use it for things that are "unworthy." One male stated, "It wouldn't have been bad for a wife to own a phone if they are using it correctly, but incidentally they have used them for prostitution." (Male 01, married). Many males reiterated this viewpoint, another said, "You give your wife a phone hoping that she is going to use it for business, but instead, she ends up loving other men using the phone you have given her." (Male 02, polygamous). This insecurity and fear that women were using phones for unfaithful means was even called out as contradictory by one man who said, "a thief does not want to be stolen from. If this women was also to get my phone and start

checking, she would also find similar information.” (Male 03, not married). Nonetheless, men often channeled their insecurities into restricting and making rules for what women can and cannot do on their phones.

### ***Lack of Complete Ownership***

One of the larger problems for women in regards to their usage of their mobile phone stemmed from their lack of economic agency to purchase their own phone. Men, who bought phones for a majority of women questioned, would often set up rules for how this phone could be used. In this sense, women did not have complete ownership of their phone. One gentleman clearly tied the economic acquisition of the cell phone with an ability to subscribe rules to it. “In case you are not the one who bought it [the phone] for her, they say you can give me those rules if you are the one who bought it for me. Since you are not the one, the rules do not apply.” (Male 04, not married).

One women, whose brother bought her the phone stated that purchasers of the phone could take it away from women as they please, “That is like, if it was given to you by maybe a boyfriend, if you have misunderstandings, maybe this person can take it away if he’s give it to me.” (Female 03, not married). From conversations with women and men, there appeared to be a correlation between gatekeepers purchasing phones and controlling what women can do with them. Another woman also noted a difference between the phone you purchased yourself and the phone someone else purchased for you, “the rules that [they] give you on the phone that they bought for you are not the same rules as they have given you on your own phone.” (Female 04).

But it was not just spousal gatekeepers setting up rules about how women can use their phones. Female 03, whose brother bought her phone, said she felt limited by her brother because he bought her the phone, even though her brother never set any explicit rules. This shows that,

for some women, there is an ingrained set of rules that comes without saying. The next two sections on late calls and unknown numbers show that male insecurity can result in restrictive, male-made mandates on how a women should use her phone.

### ***Late Calls***

Calls late at night to women were reported as causing marital conflicts. One woman said, “Okay, if somebody calls me at night he is suspicious that somebody is calling me at the time.” (Female 05, married). For another female, her husband’s suspicion resulted in him calling someone on her phone when she was asleep.

I might be under his roof, and at a certain time someone calls me and he’s around, what do you expect he do. Late in the night someone asks me ‘are you going to sleep,’ what do you expect him to do...and if you are deep in sleep he will use your phone to call that person and ask ‘who are you and why do you call this person?’ (Female 06, married)

Other women (but not all of them) reported incidences of men getting angry over late calls because they thought it was another man.

### ***Unknown Numbers***

Men could also get angry at women when they would receive calls from unknown numbers. As one woman points out, this anger stemmed from the fact that it was another man.

There was a person who called the phone and I’d receive the phone and the person switches off. So he’d call and I would pick it and he’d switch it off. So the husband started complaining, ‘who is that person calling you when you pick it and then he switches off?’ But when the husband called him and heard it was a male voice and started thinking about other things. (Female 07, married).

Unknown numbers and late night calls often caused conflicts because they were perceived to have violated their husband's peace of mind by being associated with other male suitors.

### ***Times of Usage***

When asked, some women reported that they would change the usage of their phones depending on certain people's presence. Some reported that they would switch off their phone while in the presence of husbands or family members. One woman stated that she would turn it off to avoid conflicts, "Instead of quarreling [with husband] and having misunderstandings, you switch it off." (Female 08, married). Another women, after asked if her usage changes around different people said, "mine *extremely* changes. Sometimes I even switch it off." (Female 09, married). A young girl from FGD 2 said that she did not use her phone when her mom was around. While some women reported changing their usage, most reported no change at all, and stated that they used their phones at different times of the day. Some men did report that they told their wives to turn off their phones when around them, "For my wife, when she hears that I have come back, she switches it off." (Male 02, polygamous). While it was clear that not all women switch their phones off around certain people, the fact that some of them do is a clear reflection of the power of gatekeepers.

### **3.2.3 Consequences for Breaking the Rules**

If male dominance was threatened via the breaking of their imposed rules and the damaging of their self-confidence, different conflicts could result.

### ***General Conflicts***

Men and women reported that misunderstandings over phone use could lead to relationship conflicts. Male 01 stated that, "Generally, phones have led to a lot of family conflicts and divorce." (Male 01, married). Another male said that, "Phones are now a leading

cause of conflicts.” (Male 05, married). Female 03 echoed this by telling the group that her boyfriend left her over a misunderstanding on the phone.

### ***Breaking of Phones***

Sometimes these conflicts would result in men breaking women’s phones. Two women self-reported that they have had their phone broken because of something that occurred on their mobile phone. Perhaps other women were too shy to share stories of how their phones were broken by men because three men, out of 12, reported that they have broken their wives’ phones because of anger over their wives’ use. While women largely did not report these instances, the fact that 1/4<sup>th</sup> of the male group stated that they have done this is cause to consider it a viable consequence for what men would see as misuse of a women’s mobile phone.

### ***GBV***

The most glaring example of consequences over angering husbands with use of a mobile phone was the use of physical violence. While no women reported abuse stemming from the use of their cell phone, two men out of a group of 12 talked about specific instances and many more admitted they have beaten their wives because of her usage. This discrepancy could be the result of women not willing to share traumatic moments.

### **3.3 Using the Mobile Phone for Healthcare**

Many women stated that they used their phones to access healthcare for their family. Women were mostly the ones who took their children to the clinic for treatment, but the husbands, the financial gatekeepers, were the ones who primarily footed the bill. The women of FGD 3 and FGD 4 (the only groups asked) unanimously stated that they would welcome an SMS system that sent them health information. Yet, as the previous findings show, this system must

overcome many challenges in order to properly address the multitude of health challenges Uganda faces.

### 3.4 Addressing the Findings in mHealth

As previously discussed in section 2.2, one-on-one interviews were conducted with three mHealth representatives to see their organizations’ strategies for addressing the challenges found in the focus groups. The findings discussed above are daunting realities that mHealth groups must focus on when constructing their programs. In order to properly see the different ways these challenges are being confronted, the answers from the interviews will be looked at using Deshmukh and Mechael’s framework (discussed in section 1.4.5).

#### *Organizations Analyzed*

<b>Name of Organization</b>	<b>Description of Organization</b>
Text to Change	Works with partners to create specialized mobile-based programs across 16 countries. Some of these programs are focused on health.
mTrac	Ministry of Health program that works on strengthening surveillance systems and generating community work for health system accountability. Uses an SMS-based hotline for community as well as HMIS forms that healthcare workers can fill out on a mobile phone.
U-Report	Weekly SMS quizzes sent out over 260,000 young Ugandans to poll them on issues in their communities (including health issues).
Health Child	Sends SMS reminders and SMS quizzes to discuss maternal and child health.

#### 3.4.1 Domains for Analyzing Gender Issues

The following four domains are ways to see if mHealth programs, “ensure and encourage women’s voices, participation and access to mHealth interventions” (Deshmukh & Mechael, 2013, p. 17). By using information collected from the interviews, the domains will be fleshed out while paying attention to the critical focus issues. These focus issues, which were raised in

the “challenge” sections (3.1-3.3), are engaging men/other gatekeepers, addressing GBV and addressing social and cultural norms.

### ***1) Development of Technology and Related Content***

The first domain of the framework states that, “content of technology must address women’s specific needs and concerns.” (Deshmukh & Mechael, 2013, p. 17). When discussing this issue with different organizations, it was important to see how a program was developed in a way that is cognizant of different gender issues. Sean Blaschke said that in order to do this there needs to be,

a strong focus on user-centric design. [a program] Designed actually with the beneficiaries, not in an office in Kampala or in Washington DC...I personally think it helps to engage local software developers as well. Because, not always, they have a better understanding of the issues than an international designer. (S. Blaschke, personal communication, April 23<sup>rd</sup>, 2014).

When asked, Health Child’s Daniel Irongo stated that his organization used both local developers and westerners when building a program. Text to Change (TTC) stated that their programs were often developed with partners from the West who work on the ground. Many questions at U-Report were developed by Ugandan youth to advise on whether questions would be interpreted differently than intended. The gender breakdown of these organizations is also worth noting because the framework states that women have to participate in developing the technology (Deshmukh & Mechael, 2013). Of Health Child’s 16 employees, 13 are female and out of Text to Change’s 10 people at its country office, 6 are female. All of these organizations also engage in research to make sure their program is effective.

Another issue the technological solution must take into account is the low literacy rates and women not being able to understand English. Neema Iyer stated that Text to Change operated in both Luganda and English, while Health Child, which operates in three districts, uses Luganda, Langi and English. Sean Blaschke stated that mTrac's HMIS forms are in English, which he mentioned posed a slight problem for the VHTs. Yet, mTrac's anonymous SMS hotline is in any language chosen by the text sender, the only limitation being if people reading the texts can understand the language. TTC stated that they used voice messages, while Health Child says they have in the past and are planning to use it again soon. U-Report is solely an SMS program, but they are planning to roll out a larger social networking platform in the near future. In order to stay aware of the critical focus issues, both TTC and Health Child were asked what gender their voice messages are in. Both TTC and Health Child stated that they are mostly male voices, but Irongo Daniel raised the fact that this voice was one of a local leader.

As the findings from 3.2.1 show, a mobile intervention can be derailed by economic concerns. In order to deal with the issue of airtime, all of the interventions are toll free.

In order to engage community gatekeepers such as men, mobile phones are not the only technology used by these organizations. Text to Change uses radio to educate the community, while Health Child stated that,

We currently work with a radio station to educate and do a mass sensitization on these programs. And then we have local community radios, you may not have seen these if you've been around Kampala, but around one you will always hear an advocacy message, a calling message for mosques. (I. Daniel, personal communication, April 25, 2014).

Sean Blaschke also mentioned that mTrac used television and radio to educate communities on the effectiveness of the program.



## ***2) Policy-Making and Implementation***

In addition to making sure that technology is developed in a way that is familiar with women's needs, Deshmukh and Mechael say, "Encouraging women's participation and voice in informing the development of, as well as implementation of, national health care policies is critical to achieving desired health goals and holding government responsible." (Deshmukh & Mechael, 2013, p. 18). The next section will analyze the different ways both government mHealth organizations and NGOs encourage female participation and accountability in policy-making.

mTrac, which is run by the Ministry of Health (MoH), uses an anonymous SMS hotline in order to keep government accountable. This hotline allows citizens to text messages that monitor the quality of health services (drug stock-outs, etc.). Sean Blaschke also talked about U-Report's approach to engaging community members and women in policy making. U-Report, which is not a government project, has 260,000 members. This figure includes every member-of-parliament. By working with parliament, UNICEF (which runs U-Report) is helping policy-makers both understand and be responsive to the demands of Ugandan youth. One interesting sentiment Sean discussed was that,

U-Report is not a technology or a tool, it's more of a strategy for engaging leading members of the youth and community dialogue, monitoring programs; amplifying that voice constructively to national government, to local government, to create the change that they are seeking. (S. Blaschke, personal communication, April 23, 2014).

This shows the direct connection U-Report has with policy-makers, despite being a non-government project. While another NGO, Text to Change said that they didn't have much

involvement in policy-making; Health Child stated that they worked very closely with government and that the MoH and district health offices are integral in developing their program.

### ***3) Providers of Health Services***

The framework also mentions the importance of exploring gender concerns with mHealth initiatives that engage healthcare workers, particularly FLWs (frontline workers). While relatively little data was found on this domain, Sean Blaschke did mention the vast amount of training necessary when implementing mTrac. Taking the existing HMIS system and putting it into electronic form posed many challenges for workers. This touches on the issue of technology literacy, which can be seen as a gender concern, one that Irongo Daniel touched on when talking about Health Child's program (I. Daniel, personal communication, April 25, 2014). mTrac engaged deeply with this issue and, Sean stated there have been many successes with educating people on how to use technology.

### ***4) Women as Primary Clients of mHealth Services***

The final domain, "Women as Primary Clients of mHealth Services," is where many of the critical focus issues and findings from sections 3.1 and 3.2 are touched upon. Deshmukh and Mechael state, "While technological content may be tailored to women, their active and effective role as clients of mobile services is dependent on their ability to access information, make decisions and act upon the information they get through these mobile technologies." (Deshmukh & Mechael, 2013, p. 20). This domain includes addressing the issue of gatekeepers and women who don't own phones.

One of the critical focus issues was addressing gender based violence, which, as the findings indicate, can be a direct result of males disliking the ways in which their wives use their phone. Engaging males as partners in mHealth initiatives is an important way in which gender

equality and health goals can be achieved (Deshmukh & Mechael, 2013). While Sean Blaschke said he has not had too many gatekeeper issues with mTrac, he also acknowledged the importance of engaging men while talking about a different program,

One of the things we want to ensure is to also engage the male members of the households. Not everything should be targeted just to the mother, but the father should also see his role in creating an environment where she can get the services she needs. (S. Blaschke, personal communication, April 23, 2014).

In addition to the technological synergy that the organizations demonstrated, Health Child reached out to gatekeepers by including them in their program. Irongo Daniel said, of Health Child's strategy,

We tailor some messages to bring men on board and show them their responsibilities. And further still, we also have other strategies to educate our communities about the, and the men about their role in this whole process and really the why, they should be proud that their women are receiving text messages and be on board to support them. (I. Daniel, personal communication, April 25, 2014).

While TTC said that it is sometimes difficult to reach out to men, Health Child's work demonstrated how an mHealth group can engage men and help them see the benefit of the program.

Another main finding that could hinder women's access to mHealth initiatives is the issue of time, namely conflicts over late calls and the fact that some women would not use their phones around certain people. When asked what times messages are normally sent, both TTC and Health Child said they sent messages at times when the response rate was high. Neema Iyer said they sent messages when people were not at work or school, normally in the afternoon or

evening (N. Iyer, personal communication, April 25, 2014). Irongo Daniel echoed the response rate sentiment, but stated Health Child would normally send messages in the morning before 11, before or after lunch at 3, and sometimes even in the evening at 7-8.

The final finding that needs to be addressed by mHealth groups is the mobile phone gender gap. When asked if their organizations have ever bought phones for someone, only TTC stated that they have. Neema Iyer said that TTC bought phones for traditional birth attendants in Ghana, but had problems with technology literacy. Both Sean and Daniel reiterated this problem and focused on the lack of sustainability in buying already economically disadvantaged women a phone. Sean voiced concern about how people will charge the phones and pay for maintenance. Instead of buying phones, both Sean<sup>2</sup> and Daniel offered different examples of how their respective organizations are including women without phones in their programs. U-Report is experimenting with using mobile call booths to allow youths without a phone to use a phone to answer the U-Report question free of charge. Health Child uses Village Savings and Loan Associations (which are local community groups), to help discuss the SMS quiz messages with people who do not have phones. Both of these give low-risk, low-cost opportunities to engage with women who do not have phones.

### **3.5 Discussion of Findings**

The findings from the field indicate that women face an enormous set of challenges when trying to use a mobile phone. Disheartening information about the martial conflicts and threat of violence women face is something that mHealth groups are aware of and adjusting their strategies around. On a macro-level, and according to the framework, the mHealth groups interviewed are doing a great job including women in their programs. It is on some of the micro-issues that are concerned with social and cultural norms where simple improvements could be

made. From adjusting the timing of texts, to changing the gender of voice, small changes could go a long way in creating an environment that fosters women's empowerment in access to healthcare. In the next two sections, the positive approaches to this issue will be examined, as well as the gaps.

### **3.5.1 Positive Approaches**

Many of issues women reported in the field, as well as the ones brought up in the framework were dealt with in innovative, dynamic ways by different mHealth groups; specifically the economic challenges, the issue of policy-involvement and the inclusion of men.

#### ***Economic Challenges***

As the work from Mukono District shows, economic challenges, specifically the purchasing of airtime was a major hindrance to women's mobile usage. Obviously, this presents itself as a major challenge for mHealth programs that rely on having people send texts to organizations. Luckily, all of the programs talked to were entirely toll-free. This is a necessity when instituting a M4D program that has a feedback mechanism.

Another economic concern was women who could not afford phones. There was a clear pattern of the organizations expressing hesitance over the sustainability of giving women phones. For women not having much money, getting a phone will add another economic burden, one that is reported as being a secondary concern by women in FGD 4. What incentive will women have to repair a broken phone if they did not invest the initial capital to purchase the phone? What social problems could come about if a woman is just given a phone? How will the woman charge her phone? TTC's previous problem with technology literacy when they gave out phones is another problem. The alternative approaches, proposed by Sean Blaschke and Irongo Daniel are innovative ways to get women without phones to participate in programs. These smart

approaches eliminate economic concerns, as well as the social ones that could result from buying a woman a phone.

### ***Policy Making***

Both mTrac and Health Child offered intelligent approaches to getting their initiatives engaged in policy-making. Working through the decentralized, already existing healthcare system is an effective way of using policy in an mHealth program. mTrac's anonymous hotline is a way in which the community can help hold policy accountable, especially for immediate issues such as drug stock-outs. U-Report's approach to engaging government is also something to be held in high regard. Getting all members of parliament to sign up to an initiative may seem like a lofty goal that only an organization such as UNICEF can achieve, but the same sentiment applies to smaller programs. This approach forces policymakers to understand the issues affecting their populace. Programs that involve policymakers, not just policy, can help give women a voice that helps hold government accountable to their needs and wants.

### ***Including Men***

The organizations also demonstrated a grasp on the importance of including and engaging men in their programs. Exercising technological synergy is an approach that should be included in all mHealth programs. The fact that all three representatives acknowledged the use of radio, television and other media in their engagement of the community (which included male gatekeepers), is extremely positive. This approach educates the community and allows gatekeepers to understand why people in their community, or families are getting messages about health issues. This is an easy way in which to conduct widespread education and promotion of a particular program, especially in areas that are rural and spread out.

Another positive way to engage men is Health Child targeting men and other community members by sending them messages. Even though the health issue they are getting messaged about may not directly affect them, they can take the information given to them and become better partners to their wives or daughters. mHealth groups should follow Health Child's lead and understand that men are social and economic gatekeepers to women's access of healthcare, directly involving them in programs is a crucial step in reducing conflicts and GBV in households.

### **3.5.2 Gaps in Approaches**

While there were definite positives in the organizations approaches to large-scale gender issues, there were also gaps between organizations' strategies and the intricacies of what was found in the field. The next section will look at gaps in the use of voice, timing of messages, and work on the ground.

#### ***Voice***

The organizations clearly had an understanding of the lack of widespread literacy and English language knowledge, and voice was seen as a welcome alternative. Unfortunately, the voice initiatives described by Text to Change and Health Child could exacerbate gender issues, because they both used a male voice. While Health Child used a local community leader's voice, the sheer fact that it is a male's voice can create misunderstandings, just like the findings showed in section 3.2.2. A male's voice calling a woman for health issues could possibly cause a husband to create conflict; which, in some cases, could amount to violence. This touches on Jennings and Gagliardi's concern that mHealth could negatively effect gender relations with in the household (Jennings & Gagliardi, 2013).

### ***Timing***

While both Health Child and Text to Change talked about sending messages at times when the response rate was high, having unknown numbers texting or calling women when a gatekeeper is around could create issues. As noted, when gatekeepers buy women phones, they often regulate its use and men can become angry when unknown numbers contact it. In order to mitigate this concern, messages could either be sent at different times when men may not be around (midday). While response rate may suffer, avoiding conflict and possibly violence is a much more pressing concern to cater to. This gap, as well as the problems with the voice programs brings this study to the final gap found in the cross-referencing of the findings—working on the ground.

### ***Working on the Ground***

While all the groups interviewed acknowledged that they do research, TTC said that their partners do a majority of work in the field and that it can sometimes be hard to know what is going on on the ground. Without properly being on the ground and in the community, the specific social values and customs can be ignored, which in turn can create misunderstandings. Even though Text to Change works through its partners, as technology developers, they must make sure the “content of technology must address women’s specific needs and concerns.” (Deshmukh & Mechael, 2013, p. 17). By not being on the ground and allowing partners to do the research the technological side could be uninformed of the critical focus issues.

## **4.0 Conclusion**

The economic and social challenges towards women’s usage of mobile phones are large and intertwined with the patriarchy of Ugandan society. From not being able to purchase airtime, to having your husband hit you because of something “wrong” you do on the phone,



women face an uphill battle when using a phone. Yet, as many of them access healthcare for their family, they represent a great group for mHealth organizations to target. These organizations have to navigate a minefield of critical issues such as GBV, gatekeepers and social/cultural norms. The mHealth organizations interviewed did a good job following Deshmukh and Mechael's four domains. For the most part, the strategies and approaches undertaken were dynamic and smart ways of targeting MDG's 4,5 and 6 without forgetting MDG 3. The gaps ended up resulting from the lack of attention paid to a couple critical focus issues in the domain of technology development. The critical issues of GBV, engagement of gatekeepers and social norms were not completely. In fact, as section 3.5.1 details, the organizations interviewed (especially Health Child) do a good job engaging gatekeepers and making them partners in the program. But, there were instances technology development and content could pay more attention to these critical issues. The following section will detail recommendations for mHealth groups to follow when including women in future initiatives.

#### **4.1 Recommendations**

##### ***Follow the Framework***

The framework presented by Deshmukh and Mechael provides an excellent tool for mHealth developers to follow when targeting women. The domains touch on issues pertinent to the engagement of women in mHealth. Engaging women in policy and technology development, as well as understanding women as primary clients and the role of healthcare workers universally foster women's empowerment in accessing healthcare. These domains are only useful when they are contextualized with the critical focus issues. Organizations should take these critical focus issues into account and adapt them for the country they are working in to give groups a much more informed outlook on how to go forward.

### ***Getting on the Ground***

In order to adjust the framework to their situation, organizations must be active in the field. As Sean Blaschke said, “it’s very hard to cookie cut or replicate a program from country to country.” (S. Blaschke, personal communication, April 23, 2014). Working in the community allows programs to be personalized and not mass-produced. Having a first-hand knowledge of gender relations in the area in which the intervention will take place allows technology to be designed in a way that does not ruffle feathers or exacerbate inequalities. Organizations must have a strong presence not only when researching, but also when implementing and running. This will allow them to make changes in areas that may ignore the critical focus issues.

### ***Critical Focus Issues***

In Uganda, the critical focus issues are still GBV, engaging gatekeepers and social/cultural values. But, there are micro-issues that are pertinent to understand when developing mHealth technology and content for women in Uganda. Timing is one of them. In order to avoid instances of conflict (and possibly GBV), messages should be sent in the daytime when men are at work and separated from their wives. While the response rate to messages may be lower, it is a risk that needs to be taken in order to ensure a woman’s safety. Another micro-issue is the use of voice technology. The use of voice is a great way to avoid the pitfalls of widespread illiteracy, but can it pose a problem when organizations use a man’s voice. Even if it is a local leader, this could cause misunderstandings and conflicts for the woman who receives the call. A man’s voice should call a man and a woman’s voice should call a woman in order to avoid misunderstandings. These micro-issues can only be understood if organizations have a substantial ground presence in the community.

### ***Collaboration is Key***

mHealth groups need to have a unified, collaborative approach to incorporating women in their initiatives. Rather than treating each other like competitors, seeing each other as partners working to achieve the same goals is important. With innovative and forward thinking solutions to problems such as targeting women without phones and using radio/television to educate and recruit community members, the organizations interviewed clearly have a grip on successful strategies of how to incorporate women. They should learn from these successes, and these failures to plan for the future. As Deshmukh and Mechael say, programs should, “identify and document best practices and successful approaches within mHealth Interventions that have successfully addressed gender and social norms and empowerment of women to achieve health goals.” (2013, p. 23). Collaborating would not only be an effective way to properly help empower women, it would also save time and, in turn, money. Working together to build strategies and platforms to empower women is a necessity for future initiatives to properly incorporate women.

### **4.2 Concluding Remarks**

This study shows the great challenges, as well as the great approaches to getting women involved in mHealth initiatives. While gaps most definitely exist, they are ones that can be closed relatively easily. Closing these gaps while continuing to innovate in the area of female inclusion will allow mHealth to deal with one of its greatest challenges. Understanding this challenge with every new program will allow mHealth to help women with their health needs. If organizations continue to adapt and confront this challenge head on, women will have access to better health services and information—a reward that is well worth the effort.

## Appendices

### Appendix 1-mHealth Moratorium

Telephone: General Line: 340874/231563/9  
Permanent Secretary's Office: 256 - 41 - 340872  
Fax: 256 - 41 - 231584  
IN ANY CORRESPONDANCE ON  
THIS SUBJECT PLEASE QUOTE ADM. 45/273/01



Ministry of Health  
P.O. Box 7272  
Kampala  
Uganda

THE REPUBLIC OF UGANDA

17<sup>th</sup> January, 2012

All Technical Programmes of MOH  
All Hospital Directors  
All District Health Officers  
All Medical Superintendants  
All key Stakeholders

**RE: COORDINATION AND HARMONISATION OF EHEALTH INITIATIVES**

Reference is made to the above subject.

The Ministry of Health recognizes the critical role of Information and Communication Technologies in improving the quality of health care, enhancement of human resource development, use of evidence based decision making and ultimately the attainment of the Millennium Development Goals.

While the potential advantages of ICT for development are enormous, we need to put in place an enabling environment guided by a clear eHealth Policy and Strategic Framework.

In order to jointly ensure that all eHealth efforts are harmonized and coordinated, I am directing that ALL eHealth projects/Initiatives be put to halt until:

- a. Approval is sought from my Office
- b. Sustainability mechanisms and Ownership have been agreed upon
- c. Interoperability with the National DHIS2 has been achieved
- d. Institutional Structures are utilized
- e. eHealth TWG has reviewed and recommended its Approval

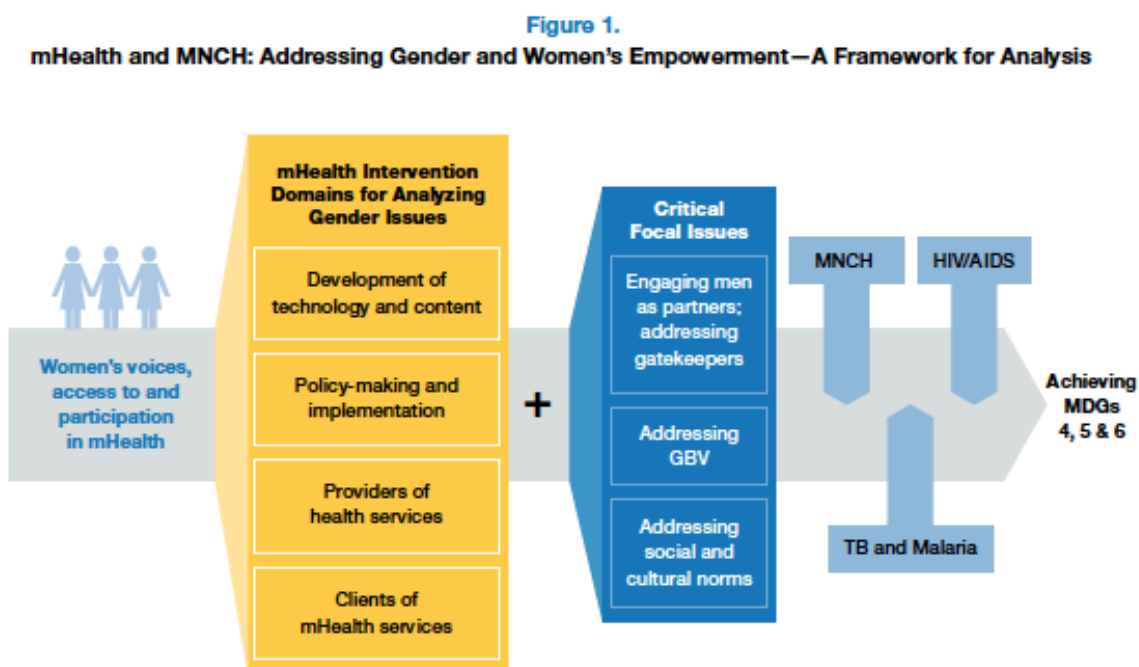
This directive takes immediate effect.

Dr Jane Ruth Aceng

**DIRECTOR GENERAL HEALTH SERVICES**

Cc Ag. Permanent Secretary

## Appendix 2-Deshmukh and Mechael's Framework Flowchart



## Appendix 3-Focus Group List

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- Focus Group 1: Nagalama Hospital. April 7<sup>th</sup>, 2014. 2 PM. 11 female nurses in attendance (owned phones). Facilitated by Jack O'Rourke and Egesa Johnson.
  - Focus Group 2: TA Crusade Continuing Studies School. April 8<sup>th</sup>, 2014. 10:30 AM. 7 female students in attendance (owned phones). Facilitated by Jack O'Rourke and Egesa Johnson. Translator was Angella Wasajja.
- 
- Focus Group 3: Nagalama Hospital. April 8<sup>th</sup>, 2014. 1 PM. 6 pregnant mothers in attendance (owned phones). Facilitated by Jack O'Rourke and Egesa Johnson. Translator was Angella Wasajja.
-

- Focus Group 4: Health Center 2 in Rural Mukono District. April 9<sup>th</sup>, 2014. 10:30 AM. 8 mothers in attendance (did not own phones). Facilitated by Jack O'Rourke and Egesa Johnson. Translator was Angella Wasajja.
  - Focus Group 5: Kalagi Town. April 10<sup>th</sup>, 2014. 12 PM. 13 mothers in attendance (owned phones). Facilitated by Jack O'Rourke and Egesa Johnson. Translator was Angella Wasajja.
  - Focus Group 6: Nakifuma Town. April 11<sup>th</sup>, 2014. 12 PM. 12 men in attendance (owned phones). Facilitated by Jack O'Rourke. Translator was Egesa Johnson.
- 

#### **Appendix 4-Interview List**

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- Interview with Neema Iyer, Text to Change Africa Project Manager. April 15<sup>th</sup>, 2014. 3:30 PM. Facilitated by Jack O'Rourke.
  - Interview with Sean Blaschke, Health System Strengthening Coordinator at UNICEF Uganda. April 23<sup>rd</sup>, 2014. 1 PM. Facilitated by Jack O'Rourke.
  - Interview with Irongo Daniel, ICT Officer of Health Child. April 25<sup>th</sup>, 2014. 10 AM at Health Child Office in Jinja. Facilitated by Jack O'Rourke.
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#### **Appendix 5-FGD Interview Guides**

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##### *Interview Guide for Females who own a Mobile Phone*

Thank you for all taking the time to meet with us today. We are here to learn more about your usage of mobile phones and the challenges you encounter while using them.

Before we start, we'd love to hear more about all of you. Could we please go around the circle and say your name, your age, what you do, if you have a family/husband and how long you've owned a mobile phone?

### **Part One: General**

We'd like to start off by going around the room and answering some general questions about your usage of mobile phones.

- 1) The first question we have is, how was your mobile phone purchased?
  - a. If you didn't purchase it, who did?
- 2) To follow up with that, we are wondering, how is your airtime purchased?
  - a. How much money is spent on your airtime every week?
- 3) What are the primary uses of your mobile phone (voice calls/sms/mobile money)?
  - a. How often do you use SMS?
    - i. How many of you can read English SMS messages?
    - ii. How many of you can read Lugandan SMS messages?
- 4) Is your phone primarily used for social means, business means, or other?
- 5) How does the ownership of a mobile phone make you feel (safe? Independent? Important?)

### **Part 2: Challenges associated with mobile phones**

Thank you for answering these questions, we'd now like to figure out the challenges associated with your use of mobile phones.

- 6) For those of you with mobile phones purchased by someone else, does this person ever try to control the use of your phone?
- 7) What is your husband's attitude about your ownership of a mobile phone?
- 8) Do your husbands or male family members ever limit your use of your mobile phone?
  - a. If so, how and why?
- 9) Have any conflicts ever come up between you and your husband over your mobile phone use?
  - a. If so, do you have any specific examples of a conflict that has arisen?
    - i. Has a conflict over your mobile phone ever turned physical?
- 10) Could you talk through your daily use of your phone? At what times do you use it more, and at what times do you use it less?
  - a. Is your usage pattern influenced by the absence of your husband?
- 11) What do you see as the main challenges to your using or owning a mobile phone?
  - a. Could each of you rank the top three challenges to your use of a mobile phone?

### **Part 3: Healthcare**

Finally, we'd like to see briefly discuss your access of medical treatment.

- 12) Are you normally the ones who seek healthcare for your family?
  - a. For example, if your child is sick, are you the one who normally seeks treatment for them?
- 13) Does anyone use their mobile phone for accessing healthcare?
  - a. If not, would you if a mobile phone program for healthcare was offered to you?

-We would like to thank you so much for taking the time to talk to us about your usage of mobile phones. Before you go, we are wondering if you have any questions for us?

Thank you and have a great day

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## *Females who do not own a Mobile Phone*

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Thank you for all taking the time to meet with us today. We are here to learn more about your relationship with mobile phones and the barriers you have towards owning one.

Before we start, we'd love to hear more about all of you. Could we please go around the circle and say your name, your age, what you do and if you have a family/husband.

### **Part One: General Questions**

We'd first like to start off by going around the room and having you answer some general questions concerning your relationship with mobile phones.

- 14) Why don't you own a mobile phone?
  - a. Economic or Social Factors?
- 15) Would you like to own your own mobile phone if you were able to?
  - a. How would ownership of a phone make you feel (safe? Independent? Important?)
- 16) Are you able to use a family member's or friend's phone?
  - a. If so, what are the challenges associated with sharing a phone?
    - i. Do they control how you use your mobile phone?
- 17) What would you use your mobile phone for (SMS, voice, mobile money)?
  - a. How many of you can read English SMS messages?
  - b. How many of you can read Lugandan SMS messages?

### **Part Two: Attitudes towards ownership**

Thank you for answering these questions, we'd now like to figure out the challenges associated with your use of mobile phones.

- 1) Have any of you owned a mobile phone?
  - a. If so, why don't you own one anymore?
- 2) Would your husbands be supportive of you owning a mobile phone?
- 3) What do you see as the main barriers to you owning a mobile phone?
  - a. Could each of you rank the top three barriers to your ownership of a mobile phone?
    - i. What are the root causes of these barriers (problem tree)

### **Part Three: Healthcare**

Finally, we'd like to see briefly discuss your access of medical treatment.

- 4) Are you normally the ones who seek healthcare for your family? For example, if your child is sick, are you the one who normally seeks treatment for them?
- 5) If you owned a mobile phone, would you use it for accessing healthcare for you or your family?

-We would like to thank you so much for taking the time to talk to us. Before you go, we are wondering if you have any questions for us?

Thank you and have a great day.



## *Focus Group with Men about Female's Usage of Mobile Phones*

Thank you for all taking the time to meet with us today. We are here to learn more about the usage of mobile phones in your community.

Before we start, we'd love to hear more about all of you. Could we please go around the circle and say your name, your age, what you do, if you are married or are in a relationship and if you own a mobile phone?

### **Part One: General**

We'd like to start off with some questions about women using mobile phones.

- 1) First question, what are your general attitudes towards women using mobile phones?
- 2) For those of you who are married or are in a relationship, does your wife/girlfriend own a mobile phone?
- 3) If she does not own a phone, why not?
  - a. Would you ever consider purchasing her a mobile phone?
- 4) If she does not own a mobile phone, do you ever let her use your phone?
  - a. If not, why?
- 5) If she does own a mobile phone, how did she purchase it?
  - a. Do you ever buy her airtime?

### **Part Two: Usage**

We'd now like to start asking questions about usage of mobile phones by women in your community. If we could hear from everyone and start a discussion, that would be great.

- 6) Do you ever limit the mobile phone use of your girlfriend/wife?
  - a. If so, how and why? Do you ever take it away/check her phone?
- 7) For those of you who purchased phones for your wives/girlfriends, do you believe you are able to take it away whenever you please?
- 8) What actions do you believe women mostly perform on their mobile phones?
- 9) Have you ever had conflict with your girlfriend/wife over the use of her mobile phone?
  - a. Can any of you give me a specific example of a conflict that has arisen?
- 10) Who is the one that normally seeks healthcare for your family? For example, if your child is sick, who normally seeks treatment for them?

We would like to thank you so much for taking the time to talk to us. Before you go, we are wondering if you have any questions for us?

Thank you and have a great day.

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## **Appendix 6-NGO Interview Guide**

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### **NGO Interview Guide**

-Could you first describe your mHealth program to me?

- 1) The first question I have is very general, how is an mHealth program developed in a way that is culturally aware and sensitive to gender issues?
    - a. Does (insert name ever work with the policy makers and healthcare providers when designing mHealth interventions?
  - 2) Does (Insert Name) pay for return messages when operating a 2 way SMS program?
  - 3) What language do your mHealth programs operate in?
    - a) With your voice system, is there a specific gender that makes the phone calls?
  - 4) At what time of the day does (Insert Name) send out messages/make voice calls?
  - 5) According to a study by GSMA, a man is 23% more likely to own a mobile phone than a woman in sub-Saharan Africa.. What, if any strategy does (Insert Name) have to include women without direct access to a phone while implementing mHealth programs? For example, does Health Child ever purchase phones for women?
  - 6) In my research, I found instances of men breaking the phones of their wives or even physically abusing them because of something that occurred on their mobile phone. They also often assist financially in the women's phone usage by purchasing them airtime and even the physical phone. How is (Insert Name) engaging men as partners in a way that teaches them the value of mHealth programs?
- 

## **Appendix 7-Consent Form**

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### **1) Purpose of this Study**

The purpose of this study is to find out the problems associated with women owning and using mobile phones in rural Uganda. By conducting research with groups of men and women, this study aims to hear first hand attitudes on usage of mobile phones. It also aims to see the root causes of these different attitudes. When all the research is collected, it will be analyzed alongside the field of mobile health. This study will then aim to see if different mobile health (mHealth) groups are properly dealing with attitudes on women's usage of phones.

### **2) Rights Notice**

In an endeavor to uphold the ethical standards of all SIT ISP proposals, this study has been reviewed and approved by a Local Review Board or SIT Institutional Review Board. If at any time, you feel that you are at risk or exposed to unreasonable harm, you may terminate and stop the interview. Please take sometime to listen to the statements provided below.

- 1) **Privacy**-all information you present in this interview may be recorded and safeguarded. If you do not want the information recorded, you need to let the interviewer know.

- 2) **Anonymity**-All names in this study will be kept anonymous unless the participant chooses otherwise.
- 3) **Confidentiality**-all names will remain completely confidential and fully protected by the interviewer. By signing below, you give the interviewer full responsibility to uphold this contract and its contents. The interviewer will also sign a copy of this contract and give it to the participant.

\_\_\_\_\_  
Participant's name printed

\_\_\_\_\_  
Participant's signature and date

\_\_\_\_\_  
Interviewer's name printed

\_\_\_\_\_  
Interviewer's signature and date

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