



m4RH

Mobile 4 Reproductive Health

TOOLKIT

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TOOLKIT



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1

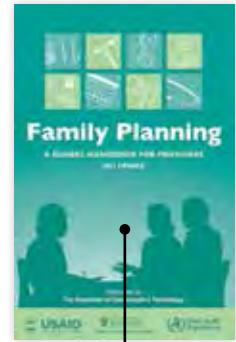
OVERVIEW



The **Mobile for Reproductive Health** (m4RH) service is an award-winning automated, interactive, and on-demand short message service (SMS, or text message) system that provides simple, accurate and globally relevant information on reproductive health. Developed in 2009 and piloted in Kenya and Tanzania, m4RH was one of the first services to take advantage of the increasing ubiquity of cell phones to put accurate reproductive health information and decision making directly into the hands of those who need it. Since then, m4RH has expanded its content and reach and has been adopted and adapted by organizations around the world.

THE BEGINNING OF m4RH

FHI 360 conceptualized, deployed, and tested m4RH as part of a pilot study aimed at determining the feasibility of providing family planning (FP) information via text message, the reach of this communication channel, and its suggested impact on FP use in Kenya and Tanzania. FHI 360 systematically developed m4RH content using best practices for health communication by engaging country-specific target audiences; identifying their attitudes, needs, and practices related to contraception; and creating and testing targeted messages to meet those needs based on global and country-level family planning guidance documents such as the WHO Family Planning Handbook. FHI 360 partnered with the technology non-profit, Text to Change, to build the technological system, and with Ministries of Health and multiple public health partners to promote the service. m4RH originally provided only the most basic and essential information about family planning as well as information on the location of clinics.

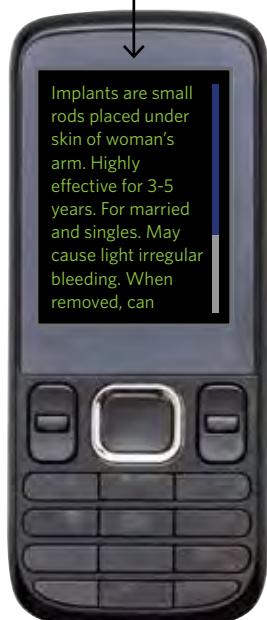


Key Points for Providers and Clients

- Implants are small flexible rods or capsules that are placed just under the skin of the upper arm.
- Provide long-term pregnancy protection. Very effective for 3 to 7 years, depending on the type of implant, immediately reversible.
- Require specifically trained provider to insert and remove. A woman cannot start or stop implants on her own.
- Little required of the client once implants are in place.
- Bleeding changes are common but not harmful. Typically, prolonged irregular bleeding over the first year, and then lighter, more regular bleeding or infrequent bleeding.

• AWARD-WINNING

m4RH has won multiple international awards, including being selected as a Women Deliver - 50 Most Inspiring Ideas and Solutions for Women and Girls in "Technology and Innovations," an African Development Bank e-Health Award winner, a Saving Lives at Birth finalist, and a Katerva Finalist for Gender Equality.



Implants are small rods placed under skin of woman's arm. Highly effective for 3-5 years. For married and singles. May cause light irregular bleeding. When removed, can



EXPANSION AND ADAPTATION

Soon after the pilot, FHI 360 developed new content for m4RH in direct support of contraceptive continuation. The new content focuses on:

- 1** Management of side effects;
- 2** Addressing common barriers and misconceptions about specific FP methods;
- 3** Further addressing benefits of method use; and
- 4** Role model stories, or story installments modeling positive health attitudes, norms, and behaviors.

This expanded content has reached nearly 300,000 unique users in Tanzania, where the system operates at scale, averaging thousands of hits per day.

FHI 360 has also adapted m4RH for young people 10-24 years old in Rwanda, Tanzania, and Uganda and added additional content on puberty, sex, pregnancy, health choices, gender-based violence, and dual protection.

To guide the process for adapting m4RH for new populations, settings, and content areas, FHI 360 developed a 10-step content adaptation and implementation framework grounded in research utilization and communications science and literature. The framework is relevant and informative for many initiatives that leverage social and digital media for health improvement.

300,000

UNIQUE USERS IN TANZANIA REACHED
BY NEW EXPANDED CONTENT

POSITIVE RESULTS

• TESTIMONIAL

“m4RH gave me courage to go and choose a method at the clinic.”

— FEMALE, AGE 31

FHI 360 had deployed SMS survey questions to collect demographic data about our users and to ask them how m4RH has impacted their lives. Overall, m4RH reaches a diverse group of users, including key target groups for FP programs such as men and young people. These users find m4RH to be an acceptable format for receiving FP information, and appreciate the convenience and privacy of this channel. Some m4RH users report use of the service increasing their knowledge about FP, improving communication with a partner, and leading them to take up a method. In addition, a randomized controlled trial conducted by Abt Associates in Kenya in 2013 demonstrated a 13% improvement in family planning knowledge after 3-months among m4RH users compared to a control group.

PATHWAYS TO SUSTAINABILITY

In 2014, m4RH was awarded a grant from the IWG Catalytic mHealth Grant Program to identify pathways to sustainability. Under this grant, FHI 360 has conducted cost-effectiveness analyses and modeling, has implemented a licensing program to expand reach of the service, and is exploring innovative public-private approaches to reduce costs and identify potential revenue streams. Through this grant, FHI 360 hopes to achieve a more sustainable cost-structure for m4RH that will encourage continued growth and expansion while contributing valuable lessons learned to the global mHealth community.

13%

IMPROVEMENT IN FAMILY PLANNING
KNOWLEDGE AFTER 3 MONTHS



2

INFO GRAPHIC

• USERS & QUERIES



NUMBER OF
SYSTEM
QUERIES*

2,770,705

Number of unique users:
281,053

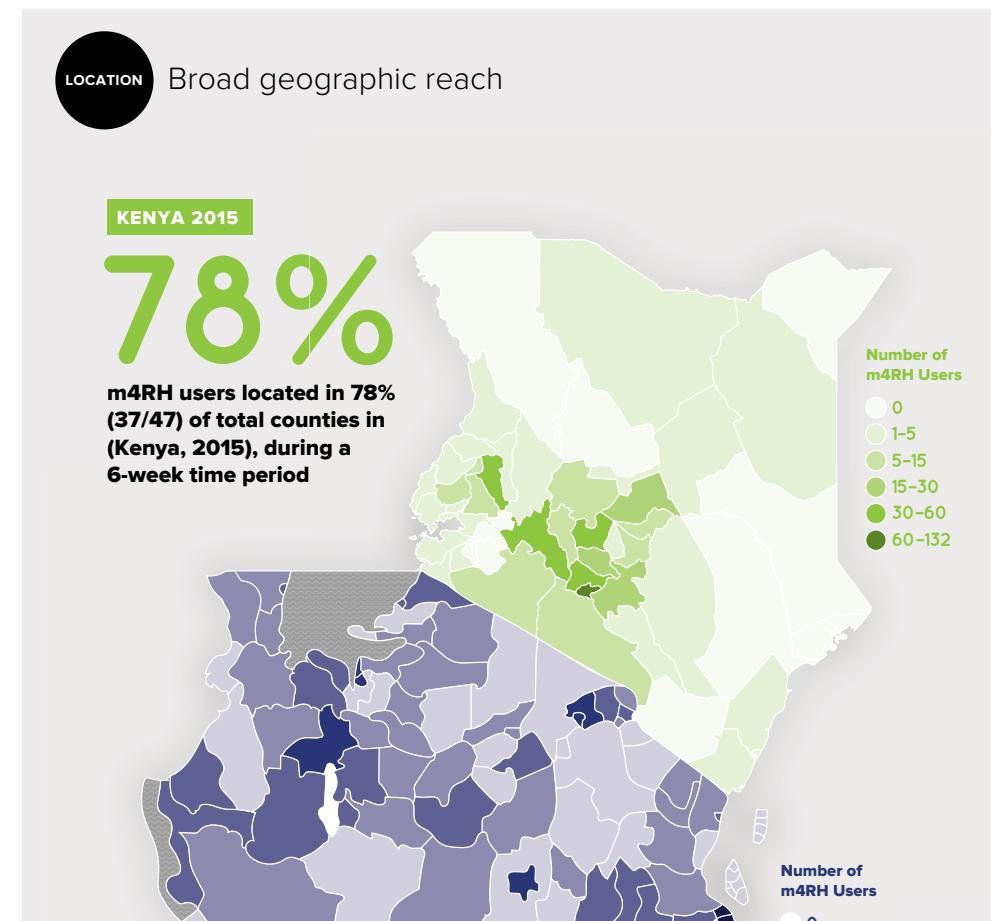
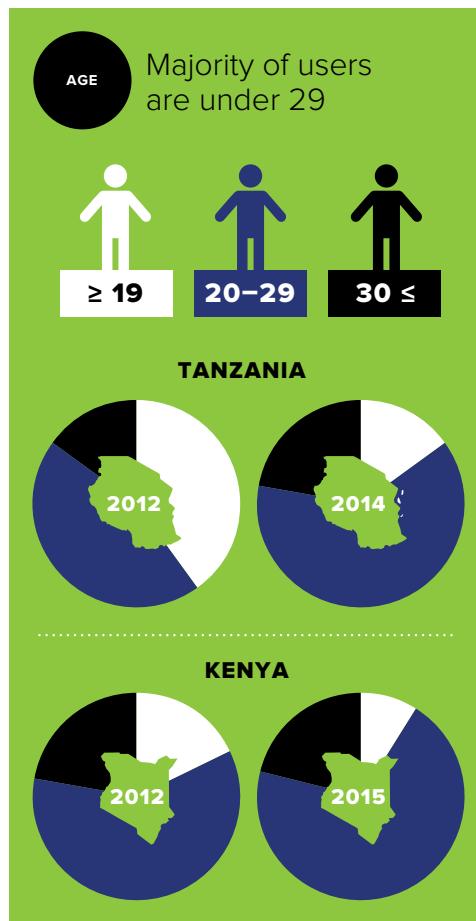
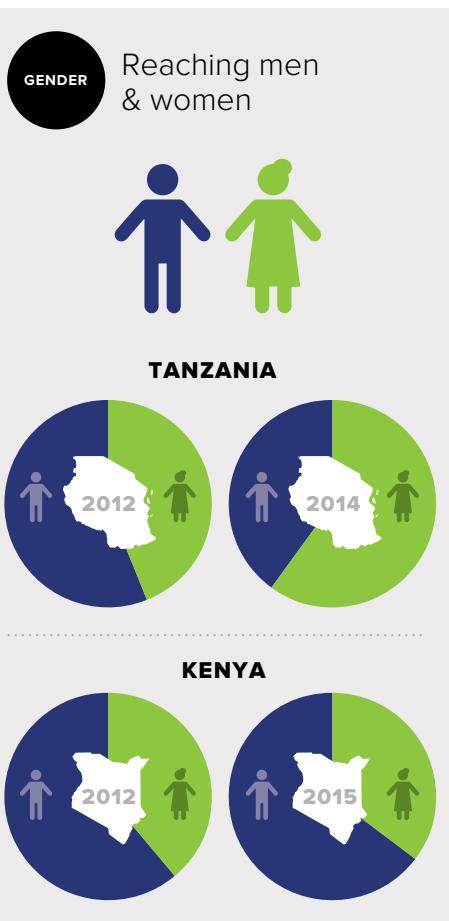


NUMBER OF
SYSTEM
QUERIES*

295,063

Number of unique users:
27,175

• DEMOGRAPHICS



• CONTENT ACCESSED

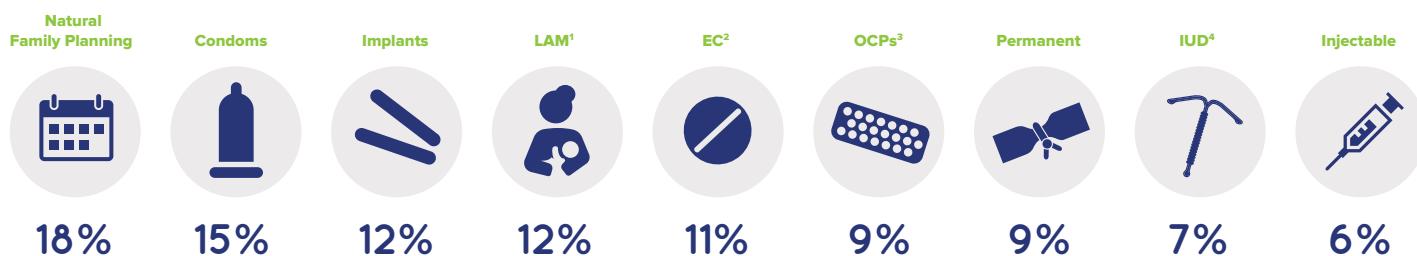
Users access content on a range of contraceptive methods

TANZANIA • 2014 • N=126,082

¹ Lactational Amenorrhea Method
² Emergency Contraception
³ Oral Contraceptive Pills
⁴ Intrauterine Device

MOST FREQUENTLY ACCESSED CONTENT

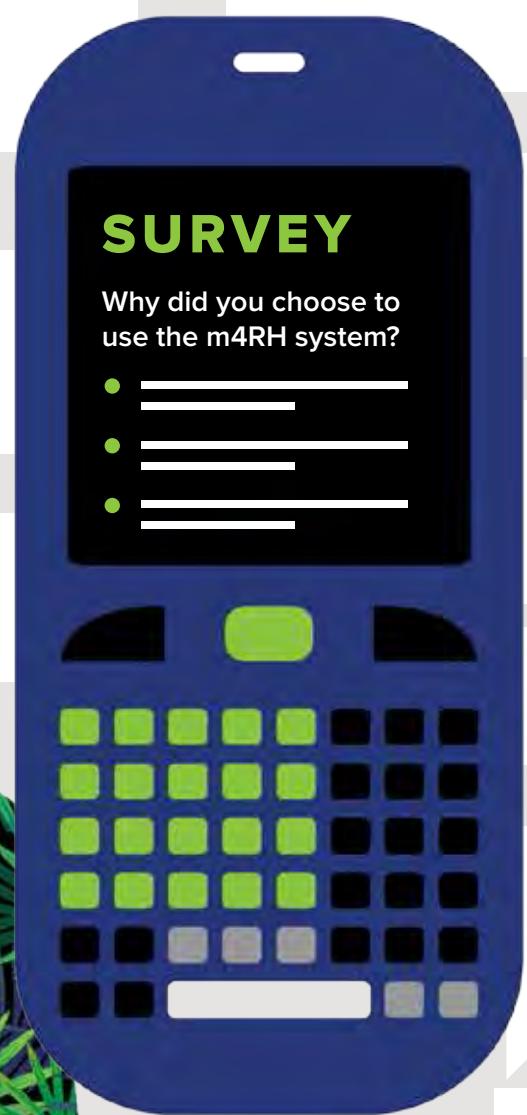
LEAST FREQUENTLY ACCESSED CONTENT



TANZANIA 2014

99%

m4RH users located in 99% (127/129) of total districts (Tanzania, 2014), during a 6-month time period





EVIDENCE BRIEF

1

A randomized controlled trial conducted in Kenya in 2013 demonstrated a 13% improvement in family planning knowledge among m4RH users after three months, compared to a control group.

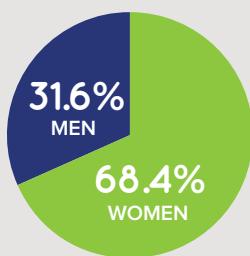
- Out of five questions, the m4RH group correctly answered 2.33 questions on average, compared to 2.06 in the control group.
- The intervention group showed a 13% improvement compared to the control group; this was a difference of 0.27 (0.055 standard error), statistically significant at $p < .05$.
- A total of 13,629 m4RH users were enrolled in the study. The average age of study participants was 25. About two-thirds (68.4%) were women and one-third (31.6%) were men.
- The study was conducted entirely via text message—reflecting innovation in the use of mobile phones not just for health programming but also for health research and evaluation.
- This study was conducted by Abt Associates, in partnership with FHI 360, with funding from USAID.

13,629

m4RH USERS WERE ENROLLED IN THE STUDY

AVERAGE AGE:

25
YEARS



KENYA
2013

The study was conducted entirely via text message

13%
IMPROVEMENT IN FAMILY PLANNING KNOWLEDGE AFTER 3 MONTHS

2

Results from 50 telephone interviews with m4RH users in Kenya and Tanzania in 2012, suggest that:



m4RH IS ASSOCIATED WITH INCREASED FAMILY PLANNING KNOWLEDGE

Most participants reported that they learned new contraceptive information from m4RH. Participants also reported that they better understood the correct use of various contraceptive methods because of knowledge gained through m4RH. Participants stated that m4RH taught them about contraceptive side effects and even about dual protection.

→ “I learned about different methods of FP, the ones I did not know existed.”

FEMALE, AGE 22

→ “[I] did not know other FP methods like implants existed, I decided to continue using condoms because it has a dual protection against STI and pregnancy.”

MALE, AGE 21

m4RH MAY SUPPORT BEHAVIOR CHANGE

The most common behavior changes reported were use of condoms and changing family planning methods. Some participants reported attending a clinic as a result of information they received from m4RH, and a few referred to increased self-efficacy for visiting a clinic and adopting FP.

→ “I changed my method from condoms to oral pills.”

FEMALE, AGE 24

→ “m4RH gave me courage to go and choose a method at the clinic.”

FEMALE, AGE 31

m4RH MAY ALSO SUPPORT CONTRACEPTIVE CONTINUATION

Many users reported maintaining their current family planning method.

→ “I did not change my method, I just continued with injections.”

FEMALE, AGE 26

m4RH SUPPORTS PARTNER COMMUNICATION

Male participants reported learning that family planning is an issue for men and about how to communicate with their partners about family planning.

→ “Family planning was perceived long term as an issue for women but now I understand it’s for all women and men.”

MALE, AGE 21

→ “I told my wife, and actually we read the messages together.”

MALE, AGE 34

m4RH USERS WERE VERY SATISFIED WITH THE PROGRAM

They reported that the messages were easy to understand and informative.

→ “It is using terms you can understand. It has clear knowledge on what you want to know. It is simple to understand, simple language that everyone can understand.”

FEMALE, AGE 22

YOUNG PEOPLE ESPECIALLY LIKED THE CONVENIENCE OF m4RH

They noted that the program is fast, simple to use, confidential, and free.

→ “I like [m4RH] a lot! It is time saving—only you and your phone, and [it’s] confidential—only you and your phone!”

MALE, AGE 21

3

Respondents to a text message-based survey conducted in Kenya in 2015 reported a number of reasons for accessing m4RH. These are reported as verbatim responses to the question:

Why did you choose to use the m4RH system?

• TO LEARN ABOUT SPECIFIC FAMILY PLANNING METHODS

I needed to know much about IUCD because am almost 9 months pregnant and I want to use it once I have delivered.

I NEEDED INFORMATION ON HORMONAL METHODS AND IUD

I needed information on birth control pills and natural family planning

Need info on condoms and emergency contraceptives

NEED INFO ON HOW LONG IT TAKES FOR SOMEONE TO GET PREGNANT AFTER USING A 3 MONTH SYRINGE CONTRACEPTIVE FOR ONE YEAR

Need info about implants and clinics



Because I heard about it on nation FM and I thought information is power even if am not engaging myself in sex a time will come or I might help a friend out there thanks M4RH you are amazing

GENERAL CURIOSITY •

I have heard a lot about it and was curious to know

I have a kid and I want to plan about my family's future



IN ORDER TO SPACE CHILDREN AND CONTROL BIRTH

DESIRE TO SPACE BIRTHS



Am a new mom and also newly married and am not ready to have another baby, and am afraid to use contraceptives coz I don't know how they will react with me so i want to know more about them

DESIRE TO DELAY PREGNANCY AND PROTECT THE FUTURE

NEED TO KNOW HOW TO USE CONTRACEPTIVES FOR THE FIRST TIME

I am still in school so I don't want to get pregnant

 Am in a relationship, am a virgin, and my partner and I want to take the necessary precautions before we commence on our sexual life. And he cares about me and so do I, and we plan on even settling together in future, so we do not want unnecessary trouble which can be avoided, and we trust m4RH services. Thank you.

NEED TO PROTECT MY FUTURE BY NOT BEING PREGNANT NOW

I want to have safe sex with my fiancé, I'm still too young to have a family



NEED TO PLAN MY LIFE WITHOUT STRESS

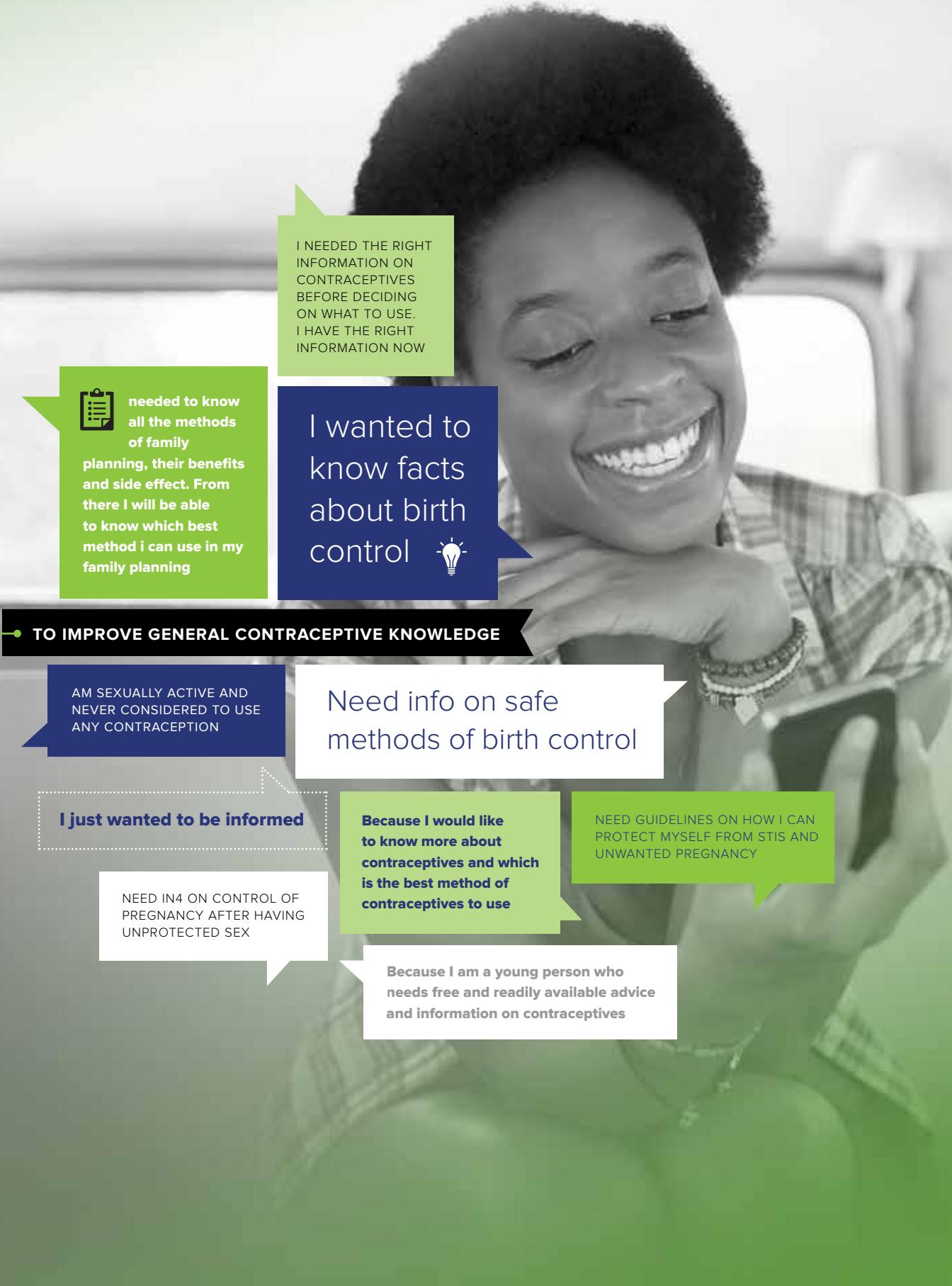
Because I'll need the info when I get into a serious relationship which I expect 2 happen when I join the university

Am taking charge of my life... Being responsible

BECAUSE I'M STILL YOUNG AND I WANT TO ACHIEVE MY DREAMS FIRST BEFORE GETTING CHILDREN

I wanted to find out the correct family planning my girlfriend and I will use because we are still young and wouldn't want to spoil our future with unplanned pregnancy





There are a lot of misconceptions out and all over. I was seeking the truth

TO CORRECT MYTHS •

AND MISCONCEPTIONS

To get the right information on family planning and avoid rumors and myths

To receive proven facts about contraceptives from experts rather than believe in rumors and speculations

Because I wanted to inquire whether contraceptive pills have an effect on fertility

KNOW WHETHER WHAT I HAVE HEARD ABOUT THE MISCONCEPTIONS OF USING CONDOMS ARE TRUE OR FALSE

Need info on the suitable method my boyfriend and I can use apart from condom



TO KNOW HOW TO PROTECT MYSELF AND LOVED ONE FROM UNWANTED PREGNANCIES AND STIS

I JUST WANT TO BE SAFE WITH MY GIRLFRIEND

Have a girlfriend and we need to know how to control our sex life

• CONCERN FOR PARTNER

I care about my girlfriend

• TO SUPPORT CONTRACEPTIVE CHOICE

Was doubting my method of birth control

Need to find out the various options on birth control methods to make an informed decision based on facts

 NEED INFO ON THE BEST CONTRACEPTIVE METHOD TO USE AT MY AGE THAT IS SUITABLE WITH MY LIFESTYLE

• PROGRAM CONVENIENCE OF M4RH

Because I what 2 get info about contraceptive so as 2 educate my fellow girls in the village coz pregnancy is what leads 2 girls dropping out of school

➡ To use the knowledge to educate other youths

• TO LEARN ABOUT SIDE EFFECTS

Need the correct info on the side effects of some contraceptives

 WANTED TO KNOW THE SIDE EFFECTS OF USING CONTRACEPTIVES ESPECIALLY THE LONG TERM EFFECTS

• TO SHARE INFORMATION WITH OTHERS

Nice and fast service

 It's private

CONVENIENT WAY TO GET INFO ON BIRTH CONTROL METHODS

 BECAUSE IT IS FREE AND EASY TO GET INFORMATION ON REPRODUCTIVE HEALTH

4

For more information about m4RH program monitoring, evaluation, and research results, see these peer-reviewed publications:

1 L'Engle, K., Vahdat, H., Ndakidemi E., Lasway C., & Zan, T. (2013). Evaluating feasibility, reach and potential impact of a text message family planning information service in Tanzania. *Contraception*, 87:251-256.

2 Vahdat, H., L'Engle K., Plourde K., Magaria L., & Olawu A. (2013). 'There are some questions you may not ask in a clinic': Providing contraception information to young people in Kenya using SMS. *International Journal of Obstetrics and Gynecology* Nov; 123 Suppl 1:e2-6. doi: 10.1016/j.ijgo.2013.07.009

Puberty is when girls and boys bodies change. They grow bigger and taller, their genitals mature,

PERSONAL

Receive personal who use family part of the story

WELCOME

Welcome to m4RH.

m4RH is free,
voluntary, and
confidential. For
implants reply 77, IUD

IMPLANT • MAIN SIDE EFFECTS

Abdominal pain, acne,
breast tenderness,
dizziness, headaches,
nausea, and changes in

PREGNANCY

Early signs of pregnancy can include a missed period, tender breasts, nausea and changes in appetite and emotions. Avoid using tobacco.

CONTRACEPTIVE • INJECTABLE

Injection in arm or hip, like Depo. Effective for 1-3 months. Get on

MALE CONDOMS

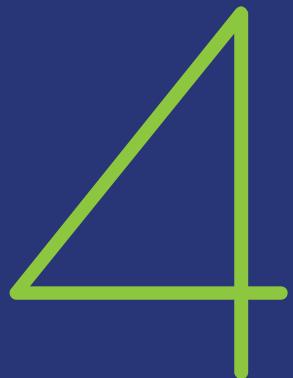
Male condoms are effective when used correctly every time with every partner. Only method to prevent HIV, STIs,

IMPLANTS

Implants are small rods placed under skin of woman's arm. Highly effective for 3-5 years. For married and singles. May cause light irregular bleeding. When

HIV DEFINITION

HIV stands for human immunodeficiency virus. HIV weakens the body's immune system. The



MESSAGES



YOUTH MESSAGE EXAMPLES



FAMILY PLANNING MESSAGE EXAMPLES

WELCOME MENU

MESSAGE CONTENT

Welcome to m4RH. m4RH is free, voluntary, and confidential. For implants reply 11, IUD 21, permanent 31, injectable 41, pills 51, EC 61, condoms 71, Natural Family Planning 81, LAM 91.

IMPLANTS

Implants are small rods placed under skin of woman's arm. Highly effective for 3-5 years. For married and singles. May cause light irregular bleeding. When removed, can become pregnant with no delay. No infertility or birth defects. To return to main menu reply 00.

IMPLANT • MAIN SIDE EFFECTS

Abdominal pain, acne, breast tenderness, dizziness, headaches, nausea, and changes in mood or weight are common and not a cause for concern. Side-effects usually lessen or stop after 1 year or less. Some women don't have side effects. If concerned, see a provider.

MALE CONDOMS

Male condoms are effective when used correctly every time with every partner. Only method to prevent HIV, STIs, and pregnancy. Use a new condom every time. Easy to find, inexpensive. Easily used with practice. Best if discussed with partner. For married and singles. Main menu reply 00. More information 72.

PERSONAL STORIES

Receive personal stories about people who use family planning. Receive one part of the story every day for 5-7 days. To hear about John's experience learning about contraception to use with his girlfriend, Amina, reply 78. For Joachim and Jane's story as an HIV+ couple reply 79.

WELCOME MENU

MESSAGE CONTENT

Welcome to m4RH. m4RH is free, voluntary, and confidential. For information about puberty reply 10, for sex and pregnancy reply 20, HIV 30, STIs 40, pregnancy prevention methods 50, stories about young people 70, and the youth-friendly services directory 80.

PUBERTY

Puberty is when girls and boys bodies change. They grow bigger and taller, their genitals mature, and hair starts growing in new places. This usually happens between ages 8-13 in girls and 10-15 in boys. Sometimes it happens earlier or later, and lasts about 2-5 years.

PREGNANCY

Early signs of pregnancy can include a missed period, tender breasts, nausea, and changes in appetite and emotions. Avoid using tobacco, drugs or alcohol when pregnant. If you are HIV positive, make sure to take your HIV medication during pregnancy. If you are worried you might be pregnant, go to a health center for advice. See directory (reply 80).

HIV DEFINITION

HIV stands for human immunodeficiency virus. HIV weakens the body's immune system. The immune system is made of white blood cells. White blood cells attack foreign agents in our body to keep us healthy. HIV kills white blood cells allowing infections to develop. If not treated, HIV will lead to death.

CONTRACEPTIVE • INJECTABLE

Injection in arm or hip, like Depo. Effective for 1-3 months. Get on time, return even if 2 weeks later. Irregular or no monthly bleeding not harmful. May gain weight. For married and singles. After stopping may take a few months to get pregnant. No infertility or pregnancy loss. Private and discrete.



5

COSTING

There is increasing evidence that mobile phone health interventions can improve health behaviors and outcomes and are critically important in low-resource, low-access settings. However, the majority of mHealth programs in developing countries fail to reach scale. One reason may be the challenge of developing *financially* sustainable programs and securing funding. As part of our efforts to explore pathways to financial sustainability for m4RH, we undertook a series of financial exercises that are relevant for those seeking to implement similar mHealth interventions at scale.

m4RH IMPLEMENTATION COSTS

As a first step, we used 2014 program records to detail the costs of running m4RH as a nationally-scaled program in Tanzania. The 2014 budget for Tanzania showed a total implementation cost of \$203,475. With about 125,000 unique users, this represented a program cost of \$1.62 per user. The cost analysis showed that over half of total program costs (63%) were attributed to SMS costs because the m4RH program in Tanzania pays for both outgoing (sent) and incoming (received) messages, in order to keep the cost of requesting m4RH content entirely free for the m4RH program user. Technology, administration, and promotional costs each accounted for approximately ten percent of the budget, with personnel costs representing the smallest budget item.

| ANNUAL FIXED COSTS (\$74,147) | | 2014 USD |
|-------------------------------|----------|----------|
| Technology | \$21,000 | |
| Administration | \$23,040 | |
| Personnel | \$11,707 | |
| Promotional | \$19,400 | |

| ANNUAL VARIABLE COSTS (\$128,328) | |
|-----------------------------------|-----------|
| SMS (push and pull) | \$128,328 |

| TOTAL m4RH PROGRAM COST FOR 2014 | |
|----------------------------------|---|
| \$203,475 |  |



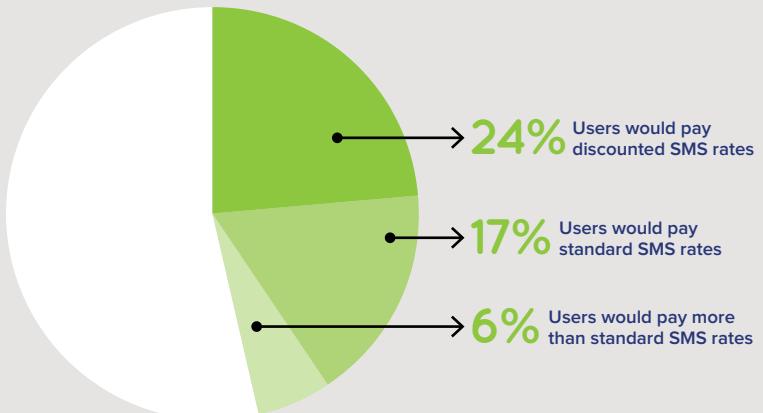
• WILLINGNESS TO PAY DATA

TANZANIA 2014

TOTAL N=1332

46%

WOULD PAY TO USE m4RH

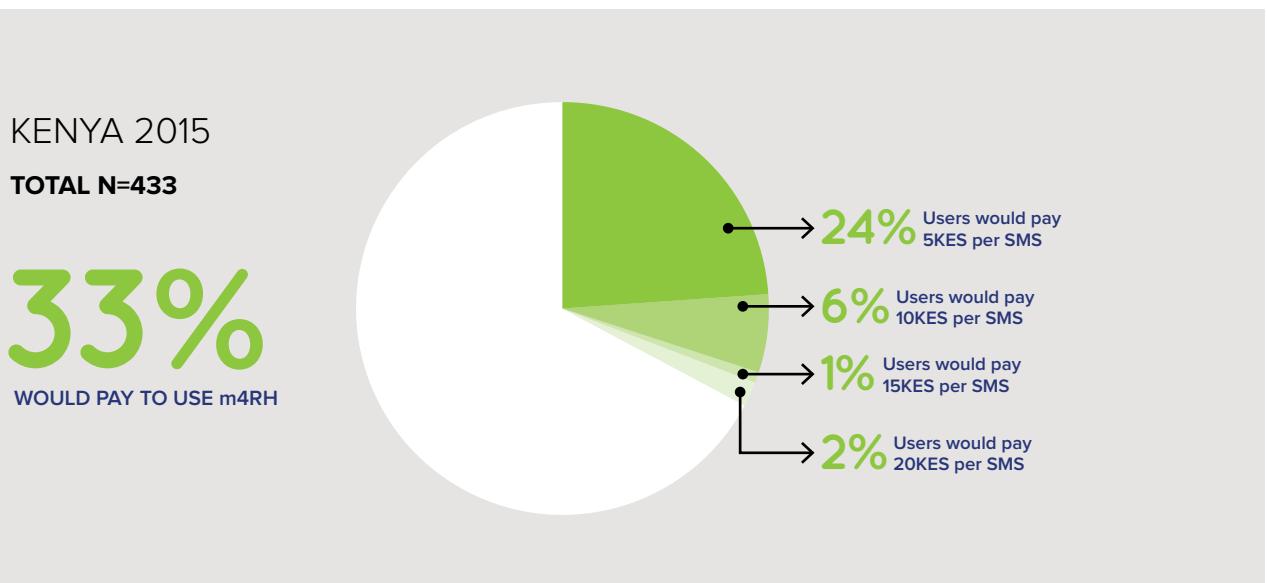


MODELING COST-REDUCTION STRATEGIES

Given that the SMS costs represented the bulk of the implementation costs for m4RH, we decided to model four different scenarios to explore the impact on overall program costs of reducing SMS rates or asking users to pay for some or all of the SMS fees.

Our decision to model scenarios involving user fees was informed by data that we collected about m4RH users' willingness to pay to obtain m4RH program content. This data showed that almost half of m4RH users in Tanzania and approximately one-third of users in Kenya were willing to pay.

From the four scenarios that we modeled, we found that breaking even (and realizing a profit) was only probable when all SMS costs were transferred to the user and the lowest per-SMS cost was negotiated with partners. In this scenario, the total average cost to the user to receive m4RH services was \$0.96 per user. While this may be high in the context of Tanzania or other lower-income countries it is important to note that this is the total cost for access to m4RH program services which could be spread over a year. Although the other three scenarios did not achieve a zero cost outcome, they did represent large reductions in annual program cost (from 54%-83%) and a lower total average cost to the user (\$0.16-\$0.64).



COST-BENEFIT ANALYSIS¹

Although we were interested in identifying potential strategies to reduce costs and generate revenue, the m4RH team also aimed to investigate the value of the service even when all program costs are born by the donor. We used past programmatic data (financial and user data) to conduct a hypothetical cost-benefit analysis of implementing m4RH in Uganda for one year. Uganda was chosen because it is identified as a potential scale-up site for m4RH. Cost categories were similar to those noted above for Tanzania, while benefit categories included: decrease in health care costs related to pregnancy, abortion, and maternal mortality, among others.

To accurately describe the range of potential costs and benefits based on the best existing data, we presented an upper and lower bound, the lower being the most conservative estimate of both the program's potential benefits and the status quo that the program would be evaluated against. In addition to determining the costs and benefits of one year of m4RH implementation, this analysis extended the potential impacts of m4RH on the cohort of users for an additional four years.

In this analysis, the net cost/benefit for the first year of m4RH implementation at the lower bound is a loss of approximately \$46,000 while at the upper bound it is a gain of over \$8 million. Over five years, the net benefit for the lower bound increases to approximately \$440,000 while for the upper bound it reaches \$13.7 million.

CONCLUSION

The results of these financial exercises demonstrate that m4RH can provide long-term benefits relative to the cost of implementing the service and that there are several possible approaches to managing implementation costs. While program costs can be high, particularly the cost of SMS fees if the service reaches scale and remains free to users, these exercises illustrate some options that donors, governments, and implementers of m4RH and similar SMS-based health information services have for reducing their implementation costs—either by asking users to pay or by negotiating lower SMS fees.

¹. We would like to acknowledge and thank Laurent Arribe, Sidee DiLamini, Kate Fenimore, and Lauren Harris for their work on the cost-benefit analysis.



6

ADAPTATION PROCESS

As the body of evidence supporting mHealth continues to grow, so does the need for models to inform the scale-up and adaptation of successful interventions. FHI 360 has developed a unique adaptation model that is grounded in research utilization and communications science and literature. This framework was used to guide the initial m4RH pilot study in Kenya and Tanzania, and since then has been followed for developing expanded m4RH reproductive health messaging for Tanzania, and adapting the m4RH platform for comprehensive youth sexual and reproductive health programming in Rwanda, Uganda, and Tanzania. Beyond the m4RH program, the framework is relevant and informative for many initiatives that leverage social and digital media for health improvement.

THE m4RH ADAPTATION FRAMEWORK

To guide the process for adapting m4RH for new populations, settings, and content areas, FHI 360 developed a 10-step content adaptation and implementation framework (see next page). The framework is based on best practices for health communication theory, design, and implementation, and globally recognized adaptation and scale-up models. The framework incorporates iterative communication and testing with the target audience to identify their specific information needs and ensure content is tailored to meet their needs and effectively encourage healthy behavior.



STEP ONE: ESTABLISH MOBILE MESSAGING TECHNICAL WORKING GROUP

Research shows that partners who are involved in the adaptation process from the beginning are more likely to support scale up, and that stakeholder engagement ensures the intervention is relevant, appropriate, feasible, and sustainable^{3,4}. For example, the m4RH team established a technical working group (TWG) in each of the three youth adaptation countries to ensure the relevant stakeholders were engaged in the adaptation process. Members of the TWG assist in identifying key health issues for the priority population, provide technical review and input for program content, and contribute to partnerships to support the dissemination and roll-out of the mHealth program.



STEP TWO: IDENTIFY PRIORITY HEALTH ISSUES AND APPROPRIATE DELIVERY FORMAT

Conducting an assessment of the target audience's varying information needs is a critical step in program adaptation. In each new setting, message content is selected through a careful review of literature on the information needs of the priority population, a review of existing global and local health curricula, and extensive input from members of the TWG. Consideration of information provided by existing behavior change communication programs and donor priorities is also a part of content development. In the case of m4RH, this has resulted in differences in program design and content across different countries and target populations. In its initial form, m4RH was designed as an automated, interactive, and on-demand SMS system; however, to increase user interaction and encourage additional behavior change, supportive messages in the form of locally relevant role model story narratives that demonstrate the benefits of healthy decision-making and behaviors have been developed and implemented in Rwanda, Uganda, and Tanzania. In Tanzania, supportive messages have also been developed in the form of weekly messages, in response to partner recommendations.

3 STEP THREE: ADAPT OR DEVELOP CONTENT FOR LOCAL CONTEXT

A key component of program adaptation is maintaining fidelity; when adapting an intervention it is imperative to ensure the key program elements, guiding behavioral theories, and internal logic are maintained^{5,6}. When developing m4RH, FHI 360 applied a systematic approach to message development guided by best practices in health communication and behavior change theory. To ensure that new content maintains this strategic approach and internal logic, we mirrored this approach when developing new m4RH content.



4 STEP FOUR: REVIEW CONTENT WITH STAKEHOLDERS

Once all new content is developed, it should be presented to the TWG for review. This step helps to ensure that new program content meets all information needs determined through step two, and that new content is culturally appropriate. Content also should be reviewed by TWG members after step eight—immediately before the mHealth program is launched and promoted.

5 STEP FIVE: TEST CONTENT WITH TARGET AUDIENCE

In order to ensure that the mobile phone messages and role model story narratives are clear, compelling, and contextually relevant, they are systematically tested via Focus Group Discussions (FGDs) with the priority population. If the target audience is youth, FGDs also should be conducted with parents and caregivers to ensure community acceptance of the youth mHealth program.

6 STEP SIX: PROGRAM TECHNOLOGY PLATFORM IN APPROPRIATE DELIVERY FORMAT

In each new setting or country, an appropriate technological partner must be identified to program and deploy the tailored system. m4RH primarily has partnered with Text to Change, a global non-profit technology company, for system deployment in East African countries.

7 STEP SEVEN: TEST USER INTERFACE AND NEAR-FINAL CONTENT WITH TARGET AUDIENCE

Usability testing is a process in which potential users are asked to navigate through a live technological system, and are asked questions about the design, navigation, and use of the platform. After the m4RH system was programmed in each country and with new content, it was tested with the target population prior to launch. Usability testing is an essential step in technology program development and deployment to support robust user engagement and system access and adoption.

8

STEP EIGHT: FINALIZE CONTENT AND PLATFORM

All user feedback gathered from content and usability testing is incorporated into the program before launch.

9

STEP NINE: LAUNCH AND PROMOTE

The integral partner relationships, established at the onset of program development, are essential for ensuring that the adapted program is promoted and available to all members of the priority population. Mass media promotion has been especially effective for m4RH adoption, with increased media buys and mentions showing a direct correspondence to increased use of the m4RH system.

10

STEP TEN: MONITORING AND EVALUATION

By nature, mobile phone programs allow for continuous real time data collection. The m4RH platform is able to capture all system queries, or "hits," through electronic and automatic logging. These hit data can be aggregated on a monthly, quarterly, or annual basis as needed—allowing for continuous monitoring and evaluation. Furthermore, m4RH has pioneered text data collection with users, showing that response rates in 5-question text surveys delivered two days after m4RH program access can approach 50% among all program users. Both closed- and open-ended questions are successfully fielded via text message, to obtain information on participant demographics, successful promotion methods, basic behaviors, and reasons for program use.

m4RH ADAPTATION FRAMEWORK



CONCLUSION

The m4RH adaptation process highlights the importance of local buy-in, government leadership, stakeholder involvement, and co-creation and testing with the target population and in all phases of the adaptation process, including the development and eventual launch of the mHealth system.

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