



Systematic Design for Behavior Change

DISCUSSING THE APPROACH APPLIED TO
VOLUNTARY MEDICAL MALE CIRCUMCISION

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Improving Health Calls for a Personalized Approach

Behavior change is hard. Everyone knows that exercise is good for you, but knowledge alone won't turn most of us into runners or gym-goers. Even if we have time for exercise, or the money for a gym membership, there are other barriers to staying healthy. Advertisers promote unhealthy food and drink more than products that foster a healthy lifestyle; social norms may discourage exercise; family and friends may not support our goals. Above all, we're often inhibited by a mixture of our beliefs, values, and emotions. How seriously do we take the risks of not exercising? How do we feel about our body? How can we weigh short-term pain against long-term gain?

If it's hard for one person to adopt a healthy behavior, imagine the challenge facing public-health programs as they try to persuade millions of people to take steps to safeguard their health. This publication describes how the problem was addressed for an urgent and particularly difficult issue: persuading men to be circumcised to substantially reduce their risk of contracting HIV via heterosexual sex. The approach taken to tackle this challenge has applications far beyond this one intervention or disease.

The voluntary medical male circumcision (VMMC) program in eastern and southern Africa had ambitious goals and reached substantial scale, but its approach to messaging wasn't changing the minds of men most at risk of HIV. So the Bill & Melinda Gates Foundation funded and collaborated with a consortium of partners, under the leadership and guidance of the governments of Zambia and Zimbabwe, to implement a new approach to generating demand for VMMC.

Faced with a complex problem, we applied a unique approach. We put men's perspectives at the center of the program, creating a framework for understanding behavior that mapped their changing needs, beliefs, emotions, and values as they weighed the decision to be circumcised.

Combining this human-centered framework with data-analysis techniques adapted from private-sector advertising, we developed tools for community mobilizers to identify persuadable men and target them with messages designed specifically for them – similar to an advertiser who knows that an exercise program must be sold differently to different consumers, depending on whether they're motivated by looks, lifestyle, or longevity. These tools were field-tested and refined, and then piloted as new interventions to generate demand for VMMC.

The initial results were not fully what we anticipated – in a programmatic evaluation in Zambia, the interventions increased the effectiveness of outreach, but in Zimbabwe, where we conducted a randomized controlled trial, the interventions appeared not to have a significant impact on demand. The difference in effect between the two countries may be because the interventions in Zimbabwe did not address an adequate range of clients' needs, there were challenges in implementing and adhering to the study, and the study design itself made implementation less responsive to challenges on the ground. However, programmatic data from Zimbabwe does seem to show that the interventions there had a positive correlative effect upon VMMC uptake.

EVALUATION RESULTS

ZAMBIA

A programmatic evaluation showed that 23 community mobilizers using the new interventions were able to book an average of 301 clients each for VMMC, compared to an average of 212 clients booked by each of the 54 mobilizers using the standard approach. This was a 42% increase in efficiency. In addition, 91% of those actually circumcised via the new interventions belonged to the 15-29-year age group that was being targeted in Zambia, compared to 50% of those circumcised using the standard approach.

ZIMBABWE

We conducted a randomized controlled trial with four arms:

- ▶ Standard" community mobilization approach
- ▶ Standard approach plus offer of HIV self-testing
- ▶ The new approach
- ▶ New approach plus offer of HIV self-testing

The new approach showed no statistically significant effect upon the rate of VMMC uptake generated by community mobilizers. Offering HIV self-testing also showed no significant effect upon VMMC uptake per community mobilizer.

These results are described in more detail on pp. 47-57



The interventions evaluated represent just a few of the possible tools that can be generated using this behavioral framework and a human-centered design approach. The framework and approach are designed to be adaptable in other countries (Figure 1), and they're being taken up across eastern and southern Africa. Understanding the target audience in depth and designing programs around the "client" can help resource-constrained public-health programs operate more effectively and efficiently. The projects in Zambia and Zimbabwe were the first to show the potential impact of our behavioral model in generating demand for VMMC. Simply put, it can help deliver a better program design. We believe it can inspire problem-solving in sectors beyond HIV prevention, and our experience holds lessons for other programs facing similar challenges.



Complex health challenges and the respective interventions to address these challenges generally require a multidisciplinary set of approaches and expertise. A creative, effective, and rigorous process brings people's needs to the forefront when decisions are made about the design and implementation of interventions intended to bring about positive changes in their lives."

DESIGNFORHEALTH.COM

FIGURE 1:

A SYSTEMATIC APPROACH TO EFFECTIVE PROGRAM DESIGN

1 **FRAME THE CHALLENGE**

Frame existing evidence through the lens of behavior to focus the project effort

2 **ESTABLISH QUALITATIVE FRAMEWORK**

Understand the target population in depth to define behavior framework

3 **QUANTITATIVE RESEARCH AND SEGMENTATION**

Quantify barriers to behavior change and divide population into actionable segments

4 **BEHAVIOR FRAMEWORK**

Establish the final framework and identify the highest-impact areas of focus

5 **CREATE TOOLS TO ACT**

Create organizational tools that leverage the framework to empower planning/design

6 **DEVELOP PORTFOLIO OF INTERVENTIONS**

Design holistic solutions for the key barriers to enable behavior change

7 **EVALUATE AND ITERATE**

Prototype, measure, and learn to refine the interventions

8 **EXTEND THE IMPACT**

Deploy the framework and tools in other countries and contexts

THIS APPROACH IS DESIGNED TO BE FLEXIBLE, AND SOME STEPS (SUCH AS SEGMENTATION) ARE NOT ESSENTIAL WHERE RESOURCES ARE LIMITED

The HIV epidemic and potential for impact with VMMC

In 2017, an estimated 19.6 million people were living with HIV in eastern and southern Africa, and 380,000 people died of HIV-related illnesses. The same year, around 800,000 people became infected with HIV in the region – nearly half of all new HIV infections globally.¹ Preventing the spread of HIV remains an urgent humanitarian and economic need. It's also a challenge for countries in the region, many of which have rapidly growing populations – meaning that more people become sexually active each year – and face significant resource constraints upon their health systems.

More than 90% of HIV infections in the region are transmitted through heterosexual sex. Research in three African countries in the early 2000s showed that being circumcised reduces a man's risk of acquiring HIV through sex with an HIV-positive woman by 60%.^{2,3,4} In response, the World Health Organization and the Joint United Nations Programme on HIV/AIDS (UNAIDS) recommended voluntary medical male circumcision as a key intervention for preventing HIV.⁵ The VMMC program focuses on 14 countries in eastern and southern Africa with high rates of HIV and low rates of circumcision in men.

The potential gains for those countries were significant: research showed that raising the circumcision rate to above 80% among males aged 15-49 by 2015 (and maintaining it at that level by circumcising boys as they entered this age group) could avert 3.4 million new HIV infections over a 10-year period.⁶

The VMMC program focused on rapidly scaling up high-quality services and communicating the safety and preventive benefits to attract prospective clients. By the end of 2017, a cumulative 18.6 million circumcisions had been performed.⁷ Despite this impressive progress, there had been periods of flagging demand, particularly among those at highest risk of HIV. Meanwhile, UNAIDS had made its targets even more ambitious, calling for an additional 25 million circumcisions between 2016 and 2021.

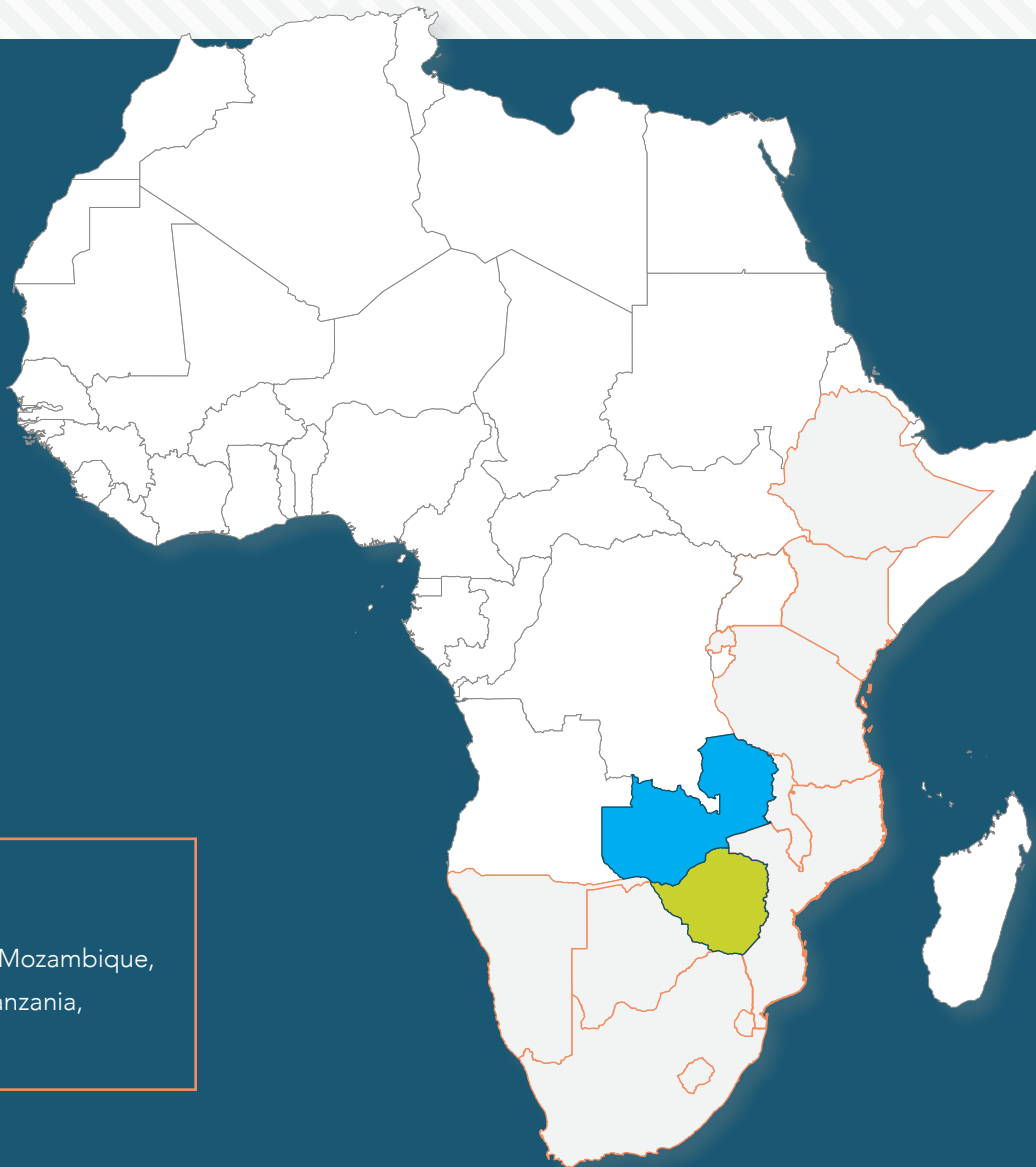
With most “early adopters” – those men most easily persuaded to undergo circumcision – already circumcised, the challenge now was to find new approaches to persuade those who were more resistant to the idea, and those who were likely at higher risk of HIV. The need was urgent if UNAIDS' ambitious goal was to be met: to eliminate HIV as a global threat by 2030.

Why Zambia & Zimbabwe?

Zambia and Zimbabwe are two of the priority countries participating in the VMMC program. They are hard hit by HIV: in 2016, HIV prevalence among males was 12.3% in Zambia and 10.5% in Zimbabwe, and between them the two countries accounted for 100,000 new infections that year.⁸ By the end of 2017, Zambia had performed almost 2 million VMMCs, and Zimbabwe 1.1 million,⁷ but under the new UNAIDS goals, their targets for 2024 had doubled. New interventions were needed to generate more demand for VMMC.

The **14** priority countries

Botswana, Ethiopia, Kenya, Lesotho, Malawi, Mozambique, Namibia, Rwanda, South Africa, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe







Framing the Challenge

In order to approach a behavioral challenge, it's critical to identify how behaviors are connected to the programmatic goals. By assessing the existing knowledge in the landscape through a behavioral lens, we introduced a human-centered approach to the project. Correctly framing the behavioral challenge that needed to be addressed at the beginning of the process preserved this human-centered mindset throughout.



First, the consortium examined the existing evidence about attitudes towards VMMC among men in eastern and southern Africa. Awareness of VMMC was already high: a majority of men knew about its potential benefits and even stated their intention to be circumcised in the future. But between intention and action there was a big gap. In Zimbabwe, for example, nearly two-thirds of uncircumcised men said they intended to go for VMMC, yet only 11% of all men had actually done so (Figure 2).

Men listed a variety of issues that deterred them: fear of pain during and after surgery, the long healing period, loss of money (for transportation, and time off work), and worries about medical complications.⁹ Despite this, campaigns promoting VMMC didn't target men's specific barriers, instead taking a "one size fits all" approach to messaging that focused mostly on its importance for HIV prevention – information the majority of men already knew.

Because these studies were mostly qualitative and had small samples, they could only serve as a starting point for designing a program to generate demand for VMMC. The data were too fragmented to build a holistic picture of men's journey to circumcision, and they gave us a relatively shallow understanding of the reasons for their behavior. We wanted a more human-centered perspective, with deeper insights into what men understood and felt about VMMC. And to target them effectively, we had to understand the differences among their journeys, as much as the similarities. What we needed was a framework to understand the entire ecosystem within which men made choices about VMMC, in order to identify and precisely target the beliefs and mental models that prevented them from getting circumcised.


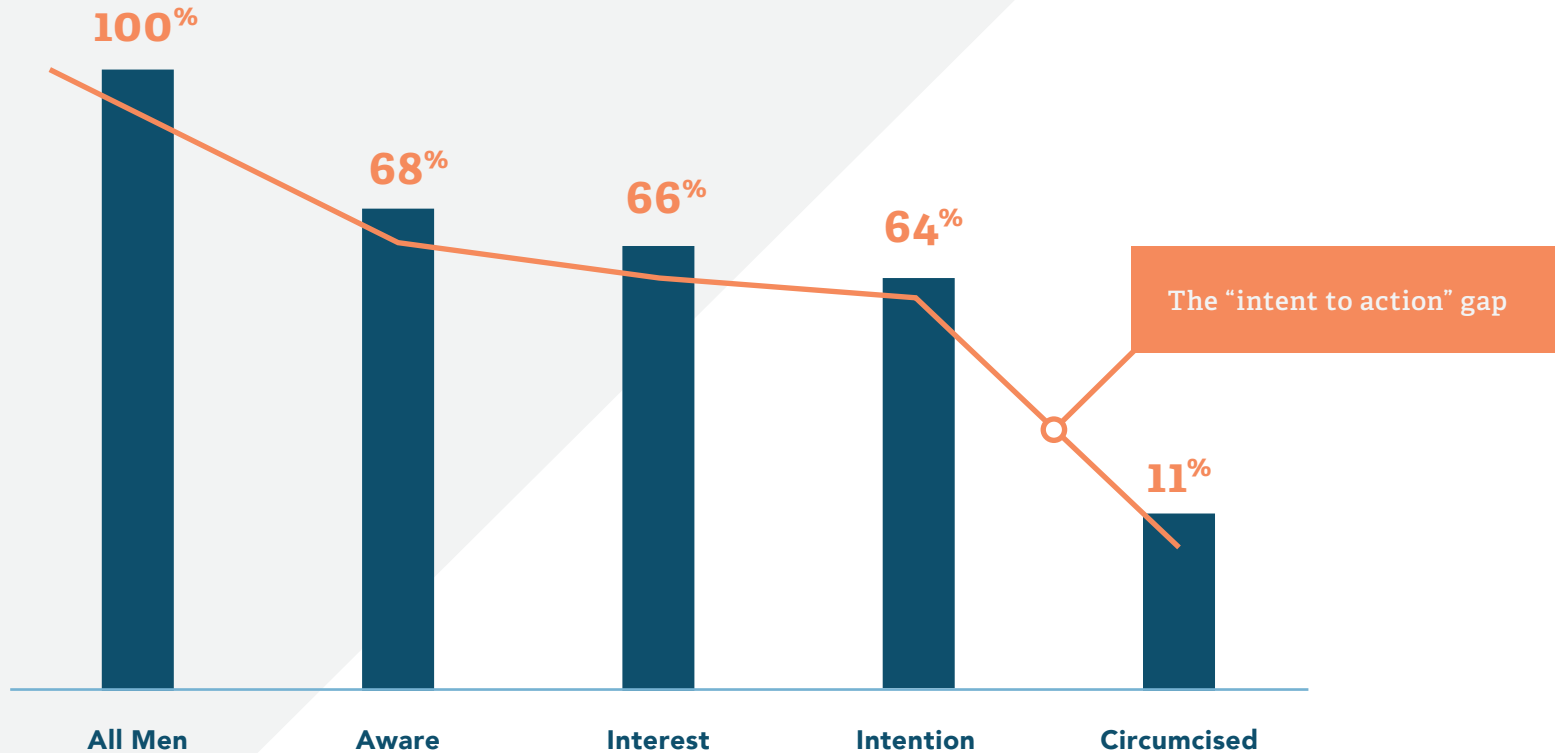
 Check out a video about the approach:
<https://www.malecircumcision.org/resource/market-research-vmmc-applying-private-sector-approaches-vmmc-demand-creation>

FIGURE 2:

POSITION ALONG THE VMMC PATHWAY AMONG MALES AGED 15–49 IN ZIMBABWE



Source: Population Services International (2013)





Understanding the Complete Journey

To create a holistic framework for men's decision-making about VMMC, we used two complementary methods – journey mapping and Ethnolab. They're grounded in behavioral science, and each has a proven track record in the private sector, but they have rarely been applied in the global health sector.



The first method, **journey mapping**, is commonly used in consumer marketing to systematically understand how people make decisions. Local moderators interviewed men and the people around them to identify and map the full range of influences on the journey toward circumcision. Marketers might do this to understand what leads consumers to buy a product; in this case, we wanted to understand how men make the decision to become circumcised.

The interviews used “journey maps” to capture stories from men and their influencers about their beliefs, emotions, and actions at each stage of the decision-making process, moving from awareness, to intent, then to action, and ultimately to becoming advocates for VMMC themselves. Defining the encouraging forces and the inhibiting barriers along their journey helped us identify the scenarios that cause men to get stuck.





We explored these scenarios further with our second approach, **Ethnolab**. This is a game-based method of understanding decision-making that draws on principles of behavioral economics. Groups of participants were shown scenarios related to health choices. Each scenario came with several possible outcomes, and participants were asked to select the outcome that they thought the majority of the group would choose. By predicting outcomes based on what they thought people like them would do, the game-players were more likely to reveal their actual emotions, mental models, and biases in their responses, rather than simply saying what they thought the facilitators wanted to hear.

Going deep and wide with research

Much qualitative and quantitative research into demand generation for VMMC had used small samples and focused primarily or exclusively on uncircumcised males. Our research was a phased, mixed-method approach, on a larger scale, that examined the ecosystem of relationships around men.

JOURNEY MAPPING

Qualitative, in-depth interviews were conducted in 13 districts in Zambia and Zimbabwe with purposively selected participants.



152 boys & men

13-29 years, circumcised and uncircumcised



656 influencers

of those boys and men (female partners, close male friends, parents or parent figures, community leaders, VMMC service providers)

ETHNOLAB

Qualitative research using behavioral economics was conducted with groups of randomly selected participants.



ZAMBIA:

210 boys & men

female partners, and service providers



ZIMBABWE:

220 boys & men

female partners, and service providers



In order to keep fieldwork logistics practical and costs reasonable, in each country the research targeted those districts with the highest concentration of uncircumcised men. These accounted for 80% of the uncircumcised population. Districts were first sorted from high to low by their populations of uncircumcised men. The cumulative percentage of all uncircumcised men was then calculated. Around half of districts fell below this 80% cut-off point, and thus research was carried out in 38 of 72 districts in Zambia, and 35 of 61 districts in Zimbabwe. Samples were distributed by age in proportion to the population size for each age group in each district. Households were randomly sampled in the selected districts, and a male was approached in each household for the interview.





Fitting it All Together: The Behavior Framework

As with any health behavior, men don't make decisions about VMMC in an instant. Over the course of the journey, a man forms and then revises his beliefs about the options available to him for VMMC, what he can do, and the likely actions and responses of those around him. This evolution allows him to overcome the emotional or practical challenges at each stage – unless those barriers cause him to become stuck. Our VMMC Behavior Framework lays out our research findings to create a coherent picture for program planners.



We analyzed the findings from the journey mapping and Ethnolabs and integrated them to create the VMMC Behavior Framework (Figure 3). The framework systematically maps three broad stages of a man's journey to undergo VMMC, represented by the gray bars in the center of the framework. Each bar depicts progress, first from awareness of VMMC to a commitment to undergo it; then from anticipation to the procedure itself; and finally from relief to potential advocacy for VMMC. The framework also depicts the kinds of barriers that

can impact a man's progress, represented by the colored squares in the lower half of the framework (each color represents one category of barrier). The maroon-colored squares in the upper half show benefits of VMMC – but a man may regard these as barriers too, if he doesn't believe they're personally relevant to him. The framework shows how the barriers may change over time, and it also identifies the people who may influence him to overcome them and move toward the next stage.

A behavior framework is a powerful resource because it provides a simple reference for understanding complex behavior. It allows planners to discuss different challenges while using a common reference point and encourages a holistic approach when addressing them. In this way, the VMMC Behavior Framework can be contextualized across different types of men and different countries.

FIGURE 3: VMMC BEHAVIOR FRAMEWORK



1 RELATE

COMMITMENT

COMING TO TERMS WITH THE CONCEPT OF VMMC, ITS BENEFITS AND DRAWBACKS

Progressing through the Relate stage means that the man moves from an awareness of VMMC to internalizing its value for him, and finally to a personal commitment to follow through and undergo circumcision. This means more than just assimilating information about VMMC. He must relate positively to it and decide that he needs to obtain the benefits that VMMC can give him. Men who do this are most likely to commit to VMMC and move to the next stage on the journey. Men who relate neutrally or negatively, i.e. who do not see VMMC as relevant to themselves, may remain in the Relate phase indefinitely.

2 ANTICIPATE

PROCEDURE

PROGRESSING FROM INTENTION, TO SCHEDULING, TO COMPLETION OF THE SURGERY

As the time for the procedure draws near, men experience intensifying pressure and concerns about their decision. Those who can manage their concerns will follow through, but others are inhibited from undergoing the surgery, because their belief in its long-term benefits is outweighed by significant fears about the short-term drawbacks. We call this cognitive dissonance – being intellectually committed to VMMC but avoiding decisive action for emotional reasons. Such men may find themselves stuck indefinitely in the Anticipate phase.

🔍 Download the VMMC Behavioral Framework here:
<https://www.malecircumcision.org/resource/vmmc-behavioral-framework-lessons-quantitative-qualitative-market-research>

THE LIFTING OF THE INTENSE PRE-OPERATION PRESSURES AND POST-OPERATION CONCERNS

Men who are proud of having been circumcised and who value VMMC for others can become valuable advocacy resources, acting as peer influencers for those who may be stuck in one of the first two stages. By contrast, some men who reach the Relieve stage choose to hide their status from others because of feelings of shame or embarrassment. This suggests a need to intervene upstream to address concerns in the earlier stages that will otherwise persist.

Men who are proud of having been circumcised and who value VMMC for others can become valuable resources for advocacy.

How men get stuck: barriers along their journey

In addition to illustrating and articulating the journey, the behavior framework also synthesizes the qualitative data on the barriers that men face. These are classified into six “barrier themes”. The framework shows how these vary at different stages of the VMMC journey, and it depicts the people who can influence a man to help him overcome each barrier. Laying out the stages, barriers, and influencers makes it possible to identify potential intervention points to affect a man’s behavior and move him along the journey. While the framework recognizes the benefits of VMMC (shown in the maroon-colored squares), it is primarily structured around barriers, because these are what need to be overcome by interventions.

BARRIER THEMES IN THE VMMC BEHAVIOR FRAMEWORK

The six barrier themes are color-coded in the framework. Our research showed that these themes are present across the age range of adult men and appear common across countries. However, the themes manifest themselves differently at each stage of the VMMC journey, and in the framework they are represented by an inventory of 33 specific barriers. The framework is designed so that other barriers can be added when it is adapted for use in other countries, based on research conducted in each context.

THE SIX BARRIER THEMES IN THE VMMC BEHAVIOR FRAMEWORK

LACK OF BENEFIT RELEVANCE

The man's sense that he doesn't need the benefit of VMMC, because he doesn't consider himself at risk for HIV, or avoiding HIV is not a priority goal

ANTICIPATED PAIN

Pain is highly subjective: we tend to overestimate the pain of a future event, and understate pain suffered in the past. This makes it difficult for those who have already undergone VMMC to address the fears of uncircumcised men

ANTICIPATED LOSS

Financial losses due to the costs of transport, the procedure, and time off work while healing; perceived loss of sexual pleasure; and potential loss of cultural or religious identity

DISTRUST

If a man's partner encourages him to undergo VMMC, he may distrust her reasons; he may also distrust circumcised men who downplay the pain involved in the procedure.

UNCERTAINTY

Uncertainty about how the procedure is done, the risk of medical complications, and the healing time may cause the man to focus on worst-case scenarios

ANTICIPATED SHAME

The man's worry that he will run into people he knows at the VMMC clinic, or that people who learn that he has been circumcised will react negatively





Defining the Market for Intervention: Segmentation

While the behavior framework establishes a comprehensive view of a man's journey toward VMMC, our approach acknowledges that not every man goes through this process in the same way. The journey mapping and Ethnolab had shown that men did not all share the same beliefs, attitudes, and emotions about VMMC, or experience each of the barriers depicted in the behavior framework. This meant that a more nuanced understanding of the differences between men – as well as their similarities – needed to be at the center of our program design.

To divide men into distinct groups, we used market segmentation, a method employed widely for marketing in the private sector. Segmentation uses cluster analysis (a machine learning statistical technique) to divide a population into groups whose members share particular characteristics, while the groups themselves are as distinct from one another as possible. They can then be efficiently targeted with tailored messaging, interventions, and services. For segmentation to be useful, each segment must be large enough to be worthwhile targeting, and the number of segments must not be so great that it is impractical to customize an intervention to each one.

Programs often segment against programmatic, demographic, or other criteria. The survey that formed the basis of our segmentation went further, examining the behaviors and attitudes of boys and men at each stage of the VMMC journey, providing a lens through which to view their behavior at a deeper emotional level. The segmentation process relied on the components identified in the behavioral framework. The result was six population segments in Zimbabwe, and seven in Zambia. We developed detailed profiles of each segment based on the demographics, attitudes, beliefs, and behaviors of the men within it. The uncircumcised men in each segment are generally at a particular stage of the VMMC journey and face a particular set of barriers which are summarized in Tables 1 and 2.¹⁰ More extensive data on each segment for [Zambia](#) and [Zimbabwe](#) are available on the VMMC Clearinghouse website (malecircumcision.org).

SEGMENTATION SURVEY:



ZAMBIA

2,000

boys & men

15-29 years, circumcised
and uncircumcised



ZIMBABWE

2,001

boys & men

15-29 years, circumcised
and uncircumcised

TABLE 1:

SEGMENTATION OF MALES AGED 15-29 IN ZAMBIA











SEGMENT NAME	% OF TOTAL POPULATION	% OF UNCIRCUMCISED POPULATION	STAGE OF JOURNEY	KEY BARRIERS
 Self-Reliant Believers	19%	9%	Relieve	Strong commitment to VMMC and ready to advocate to friends, brothers, and sons
 Indifferent Resistant	17%	27%	Relate	Express little interest in engaging with the messaging behind VMMC or sexual health in general
 Friends-driven Hesitant	14%	19%	Anticipate	Committed but with weak motivation. Wish they had been circumcised as a child rather than have to make a difficult decision as an adult; this drives rejection due to cognitive dissonance. Need assurance that they have the ability to handle the procedure and healing
 Socially Supported Believers	14%	11%	Anticipate or Relieve	Committed and ready for VMMC, but with some support needed on understanding the procedure and pain. Ready and willing to advocate once circumcised
 Traditional Believers	13%	6%	Anticipate or Relieve	Show intent to circumcise but low motivation. Tend to be married or with a long-term partner and family
 Knowledgeable Hesitant	12%	10%	Relate or Anticipate	Mainly positive attitudes to VMMC, but concerns around safety and pain, and not relating benefits to themselves
 Scared Rejecters	11%	17%	Relate	Believe in some benefits of VMMC (predominantly hygiene) but have many fears and concerns over risk of complications, procedure and surgery, which prevent them from committing to or scheduling the procedure

TABLE 2:

SEGMENTATION OF MALES AGED 15-29 IN ZIMBABWE

SEGMENT NAME	% OF TOTAL POPULATION	% OF UNCIRCUMCISED POPULATION	STAGE OF JOURNEY	KEY BARRIERS
 VMMC Enthusiasts	25%	21%	Anticipate	Strongly motivated but have personal fears around pain and other barriers, as well as some rejection due to cognitive dissonance
 VMMC Champions	18%	6%	Relieve	Experienced very few barriers to circumcision. Strongly motivated and willing to advocate (although only a small proportion are actually advocating)
 Embarrassed Rejecters	17%	17%	Relate or Anticipate	Very strong fears over anticipated pain and shame. Lack of social support network to talk through fears
 Highly Resistant	15%	21%	Relate	Have little or no motivation to go for VMMC. Do not believe in the benefits and have a very negative attitude toward VMMC
 VMMC Neophytes	14%	19%	Relate or Anticipate	Feel generally positive about VMMC but lack information or confidence to go for the procedure
 Scared Rejecters	12%	16%	Relate	Believe in the benefits but have a variety of fears and worries, especially around safety and pain, which prevent them from making a commitment to VMMC



In order to make these insights actionable, for each country we designed a simple tool for mobilizers to quickly identify which segment a man belonged to. The segmentation typing tool consists of a short series of questions arranged in a decision tree. The mobilizer asks a potential VMMC client an initial question, and based on his response asks one to three further questions. No more than four questions are needed in order to classify the client in the appropriate segment with a 61-71% degree of accuracy. The client can then be given messages about VMMC tailored to men in his segment.

Designing solutions to meet the unique needs of people is the central principle of human-centered design. Thus, the ability to identify which segment a person represents is an essential part of the process



Designing for Different Types of Men

Through the behavior framework, we had an overview of the journey to VMMC and the barriers along the way, and we understood that men go through this journey differently. Through the segmentation process and the segmentation tool, we knew how to identify which segment a potential VMMC client belonged to. The next step in our approach was to use the behavior framework and segmentation tool to design and pilot specific interventions to generate demand for VMMC.

Prioritizing Segments for Targeting

To maximize speed of impact and efficient use of resources, we assessed the segments in each country on the following criteria:

- ▶ Ease of converting men to take action to get MC, e.g., high % of men already committed to getting MC
- ▶ Size of the segment, i.e., proportion of uncircumcised men represented by the segment
- ▶ Risk of HIV acquisition based on behavioral indicators, e.g., having multiple partners
- ▶ The potential for men in the segment to advocate to others about VMMC, post-circumcision

Based on this assessment 4 segments in Zambia, and 3 in Zimbabwe, were selected for focus on intervention development, although all segments required attention to realize national targets.



ZAMBIA

49% of uncircumcised males



Self-Reliant Believers



Friends-Driven Hesitants



Socially Supported Believers



Knowledgeable Hesitants



ZIMBABWE

56% of uncircumcised males



Enthusiasts



VMMC Neophytes



Embarrassed Rejecters



The design workshops used the common behavior framework, combined with country-specific segmentation and local expertise, so there were naturally both similarities and differences between the interventions tested and chosen in Zimbabwe and Zambia.

In keeping with our approach to human-centered design, the consortium brought together numerous stakeholders in each country – marketing and communications experts, health ministry officials, program implementers, community mobilizers, and representatives of the men whom the program wanted to reach. The process combined the insights of our research with the expertise and experience of the participants in the design workshops.

In each workshop, participants studied the framework in depth, using it to understand the characteristics of men in each segment and identify the common barriers, motivators, and influencers for them at each stage along the VMMC journey. They brainstormed ideas to address the barriers, and sketched out prototype interventions and tools from a shortlist of the most promising concepts. Community mobilizers, who talk to men about VMMC in groups or one-on-one, are a key component of the VMMC program, and they were trained to test the prototype interventions in the field.

A prototype is a model or artifact built to test a concept with users in order to learn from them. A prototype helps designers understand, explore and communicate what it feels like to engage with a solution in real working conditions rather than theoretical conditions.





In Zimbabwe, two interventions were selected for piloting, based on their practicality and acceptability among both clients and mobilizers:


LACK OF RELEVANCE

TARGETED MESSAGING – specific messages delivered to men in priority segments (see page 38), addressing themes identified in the design workshop and the behavior framework: pain, the need for social support for VMMC, concerns about sexual appeal, and the emotional and functional benefits of VMMC. If the segmentation tool showed that the man did not belong to a priority segment, he received standard (generic) program messaging about VMMC.

ANTICIPATED PAIN

“PAIN-O-METER” – a tool offering visual analogies to help the client understand the level of likely pain experienced at each step of the procedure, and options to manage it. The analogies were based on input given by men who had already undergone VMMC.

- 
- Pain tablets
 - Wear well-fitting underwear



Cut on the finger

- 
- Pain tablets
 - Elevate penis
 - Erection control
 - Wear well-fitting underwear



Bandage removal and salt dips

- 
- Bandage or wound crust being pulled off
 - Tiny itches

- 
- Pain tablets
 - Elevate penis
 - Erection control
 - Wear well-fitting underwear



DAY 1-42



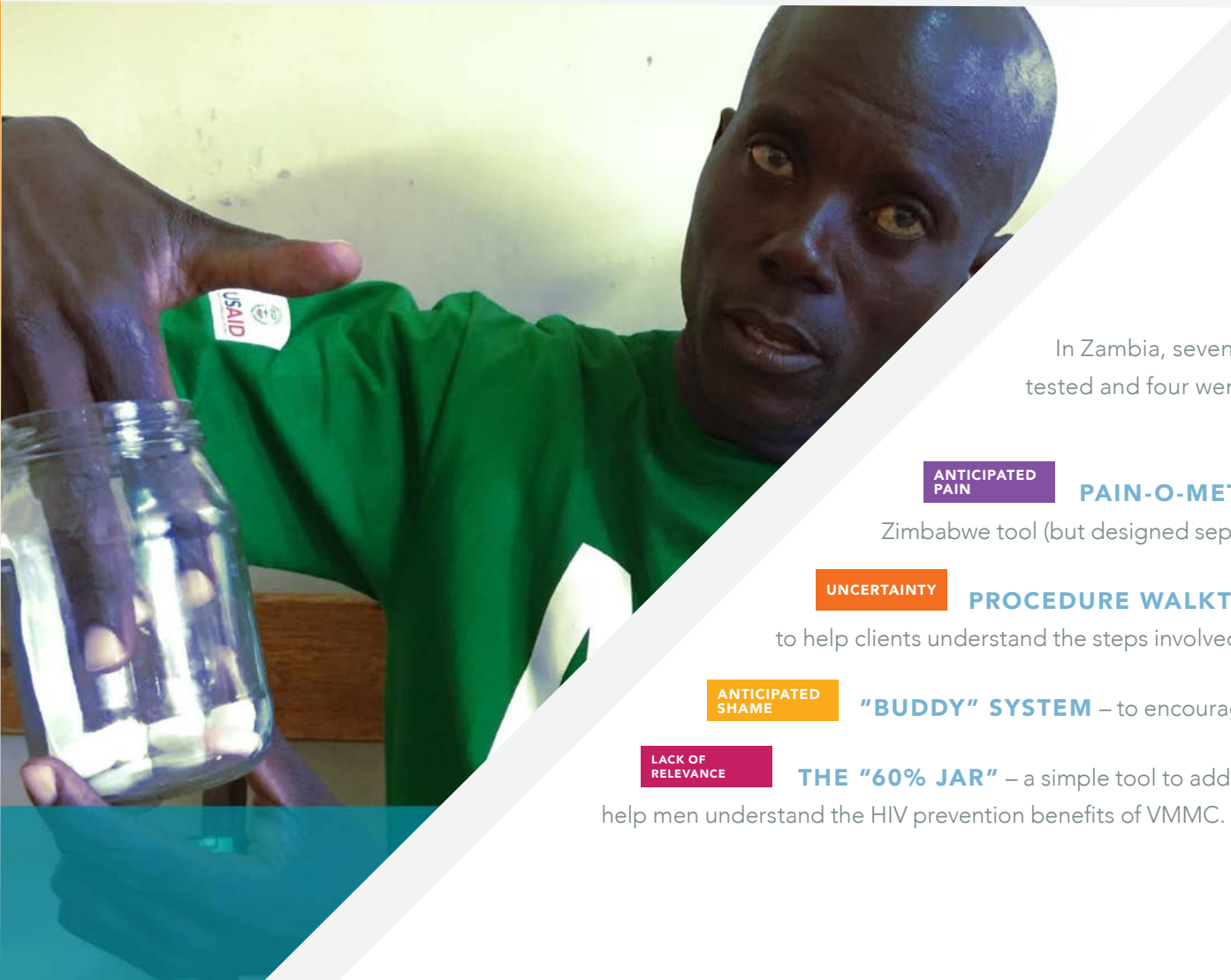
ERECTION CONTROL

WHAT DOES IT FEEL LIKE?

Pain from erection is like a throbbing headache

HOW TO MANAGE IT

- Pain tablets
- Urinate frequently
- Walk on cold floor
- Wrap your penis in a cold wet towel



In Zambia, seven interventions were field tested and four were chosen:

ANTICIPATED PAIN

PAIN-O-METER – similar to the Zimbabwe tool (but designed separately from it)

UNCERTAINTY

PROCEDURE WALKTHROUGH – a presentation to help clients understand the steps involved in the VMMC procedure

ANTICIPATED SHAME

"BUDDY" SYSTEM – to encourage social support

LACK OF RELEVANCE

THE "60% JAR" – a simple tool to address and help men understand the HIV prevention benefits of VMMC.

Iteration and improvement: insights from the intervention design process

Field testing the interventions was a crucial part of the process. A key principle of human-centered design is that it is not enough to conceptualize interventions in a workshop, even with all stakeholders represented. They must also be tested, reviewed, and refined based on the experience of those using them in the field, and the clients they are meant to serve. The community mobilizers put the prototype interventions into practice, accompanied and observed by marketing experts. The feedback of both was used to refine the prototype tools and the intervention procedures. Along the way, we gained insights into what worked – and examples of what needed to be worked on.

ADJUST THE SELECTION CRITERIA FOR THOSE DELIVERING NEW INTERVENTIONS ON THE

GROUND: Mobilizers for the intervention were recruited from those working in the standard VMMC program.

Those who were more successful in implementing the new interventions had good literacy levels, were young (under 30) but had a mature attitude, and were dynamic and motivated.

PROVIDE INTENSIVE AND SUSTAINED TRAINING, MENTORING, AND SUPERVISION:

Mobilizers in Zimbabwe were initially trained for four days on the behavioral framework and tools, effective communication skills, how to conduct sessions with clients, and how to use the tools for segmentation and data collection.

However, monitoring showed that this was not sufficient: the mobilizers needed structured support for about two months in order to become fully accustomed to correctly implementing the new approach, segmenting prospective clients, and targeting them with the right messages.

RESTRUCTURE THE PROGRAM TO SUIT THE NEW INTERVENTIONS:

To provide the close support that mobilizers needed as they got used to the new approach, the ratio of supervisors to mobilizers was adjusted from 1:150 to 1:25 in Zimbabwe, with supervisors spending at least half a day per month with each mobilizer. The job description was revised to include a 90% level of effort in providing technical support to the mobilizers. This included mentoring,

supervision, and quality checks through accompanied field visits to ensure that mobilizers did not slip back into their familiar old approach to implementation. Structured support and supervision were designed to help supervisors manage the change effectively. Each mobilizer was assigned to a clearly defined cluster, and their job description was revised, emphasizing process rather than targets.

MAXIMIZE THE VALUE OF HUMAN-CENTERED DESIGN TO PROGRAM IMPLEMENTERS AS WELL AS CLIENTS:

The segmentation tool was designed to be portable and easy to use in the field. Mobilizers reported that it made their recruitment efforts more efficient by enabling them to accurately deliver the most important messages based on the client's identified needs, rather than delivering a blanket set of messages to every client.

REFINE TOOLS BASED ON FEEDBACK FROM THE FIELD:

The initial design for the segmentation tool was translated into vernacular languages and streamlined, and the segment titles (Neophytes, Embarrassed Rejecters, etc.) were replaced with colors to avoid stigmatizing prospective clients. Initial feedback on the Pain-o-Meter developed by the program in Zimbabwe and Zambia was that

clients found the images too alarming and were deterred by them, so these were revised. In Zimbabwe, clients who could not read had difficulty understanding the numerical scale on the Pain-o-Meter, and in response, emojis were added to it.

CONFRONT THE CHALLENGE OF EFFECTIVE DATA COLLECTION:

In Zimbabwe, data collection evolved during the pilot period. A data cascade was designed to help supervisors evaluate mobilizers' effectiveness in the field. The cascade recorded information on clients reached with the new key messages, the numbers booked for a VMMC appointment, the number of follow-ups, and the numbers circumcised. Mobilizers initially used paper-based tools to gather data, but it became clear that this was not working uniformly, making data analysis challenging. Electronic tablets for data collection were subsequently introduced, and additional training was provided to mobilizers. Nevertheless, it took mobilizers some time to get used to the tablets, and some preferred to record data on paper and transfer them to the electronic tool later. Internet connectivity in the field was also an issue.



Evaluating the Interventions

We took different approaches to testing the impact of the interventions and tools in each country. In Zambia we piloted the interventions for a six-month period, while in Zimbabwe we conducted a randomized controlled trial over eight months. In each country, implementing the interventions yielded important insights into how our design approach can best be used to create behavior change interventions.

Zambia

In Zambia the interventions were evaluated using a six-month operational pilot. Twenty-three mobilizers were trained to use the new interventions in two regions of the country, while 54 mobilizers used the standard intervention.

Mobilizers using the new interventions were able to book an average of 42% more clients for a VMMC appointment than mobilizers using the standard approach. This meant that although the “conversion” rate (clients booked for VMMC who followed through and became circumcised) increased only modestly for the new intervention (from 47% to 49%), mobilizers using the new interventions were more productive. The 23 mobilizers using the new interventions booked 6,923 clients, compared with the 11,448 VMMCs booked by 54 mobilizers using the standard intervention (i.e. there were 2.3 times as many “standard” mobilizers as “new” ones, but they achieved only 1.7 times as many bookings).

In addition, 91% of those actually circumcised via the new interventions belonged to the 15-29-year age group that was being targeted in Zambia, compared to 50% of those circumcised using the standard approach.

PROCESS EVALUATION

Mobilizers in Zambia reported that whereas before the pilot many men seemed uncomfortable being counseled about VMMC, the new interventions made a difference because the mobilizers could present the benefits of VMMC more explicitly. Segmentation helped by guiding them to give messages that resonated with their clients.

The structured walk-through of the VMMC procedure using a flipchart helped to demystify the process and address misconceptions about it. The most frequent topic of discussion reported by mobilizers was pain. They found that discussing it openly helped convince clients to undergo VMMC.

A straightforward but important lesson related to practical design was that the size of tools and materials has an impact on how successfully they are used. Each mobilizer was issued with a daily activity book to log details of each man they met with, but the book was too large to fit easily in their bag and carry around.

Conversely, some mobilizers reported that the space for recording information on each page was too small, and clients' phone numbers were sometimes written down unclearly as a result, making follow-up difficult. Mobilizers recommended replacing the books with electronic tablets.

Other logistical challenges included the difficulty of doing outreach during the rainy season, especially when having to travel long distances by bicycle without adequate raingear. Finally, there was a shortage of VMMC providers at some referral facilities, meaning that clients going for circumcision were sometimes not attended to and became frustrated as a result. While these challenges were not directly related to the intervention design, they reflect the importance of taking the complete context into account when designing and assessing interventions.

Zimbabwe

In Zimbabwe, there was an initial three-month pilot during which the new interventions were refined in an iterative process. They were then evaluated through a randomized controlled trial over eight months. The trial was designed to also examine the effectiveness of offering men HIV self-testing kits (see box on the following page).

IN THE TRIAL, MOBILIZERS WERE ASSIGNED TO ONE OF FOUR ARMS:

- ◆ Standard mobilization, i.e. generic information about VMMC (control group)
- ◆ Standard mobilization, plus an offer of an HIV self-testing kit
- ◆ Standard mobilization, plus the new demand creation intervention
- ◆ Standard mobilization, plus the new demand creation intervention, plus the offer of HIV self-testing

Data gathered from the interventions were aggregated at the level of each community mobilizer and analyzed using the negative binomial model. Circumcisions were measured as the total number of men circumcised per mobilizer over the total follow-up period.



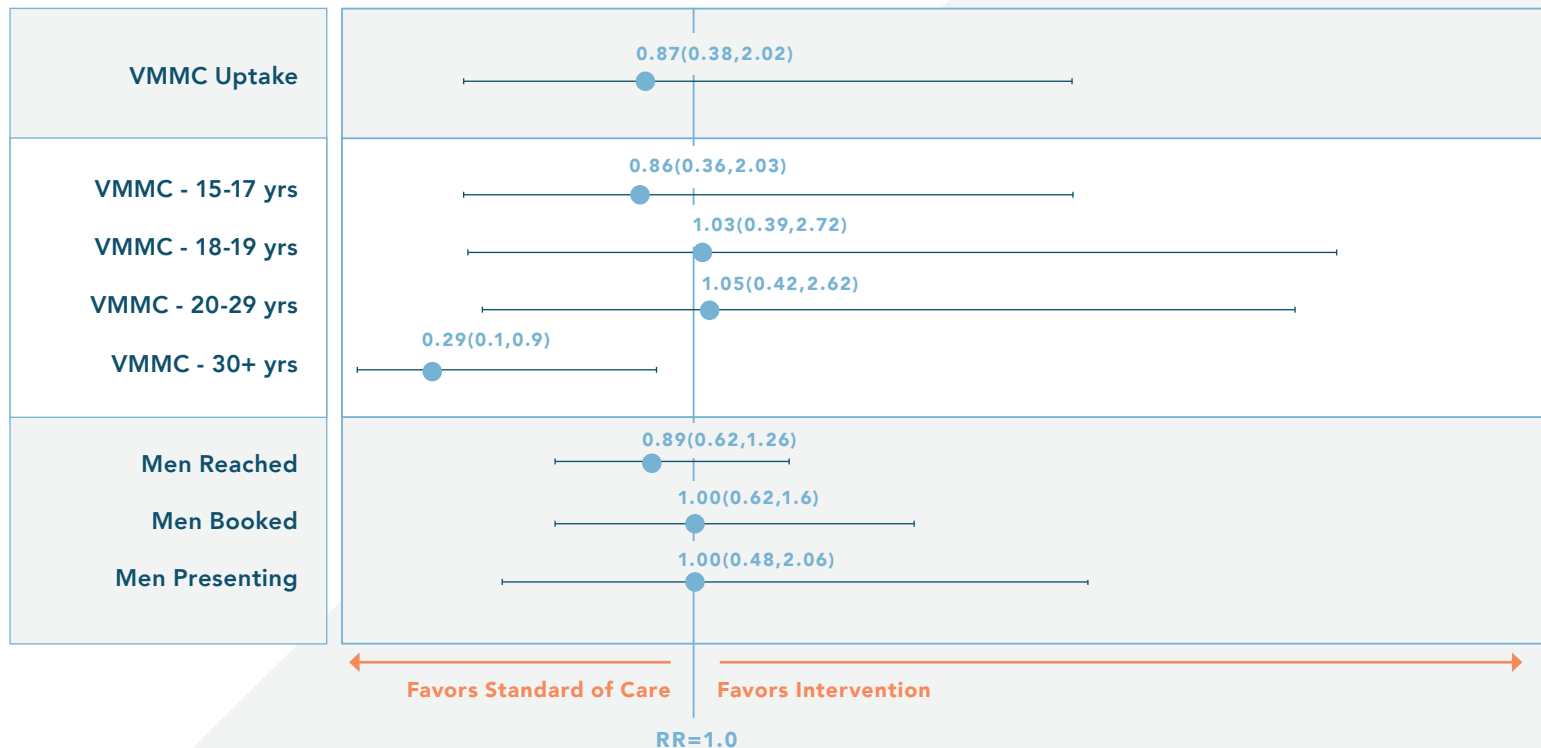


HIV self-testing

HIV testing is offered to men before they undergo VMMC. Although it is not compulsory, the journey mapping and Ethnolabs (and qualitative research by others^{10,11}) indicated that testing was one of the main barriers to uptake of VMMC services, and the same theme was raised in the intervention design workshops. In particular, older sexually active men feared receiving a positive test result, or that if they didn't undergo circumcision after being tested at the VMMC clinic, people would infer that they must be HIV positive. Zimbabwe had already been offering HIV self-testing kits to men in the context of efforts to improve uptake of testing and linkages to treatment, and this included the VMMC program. Self-testing allows clients to learn their HIV status in private before choosing whether to go to the VMMC clinic. For this reason, the efficacy of HIV self-testing in increasing uptake of VMMC in Zimbabwe was evaluated as part of the trial of the new interventions.

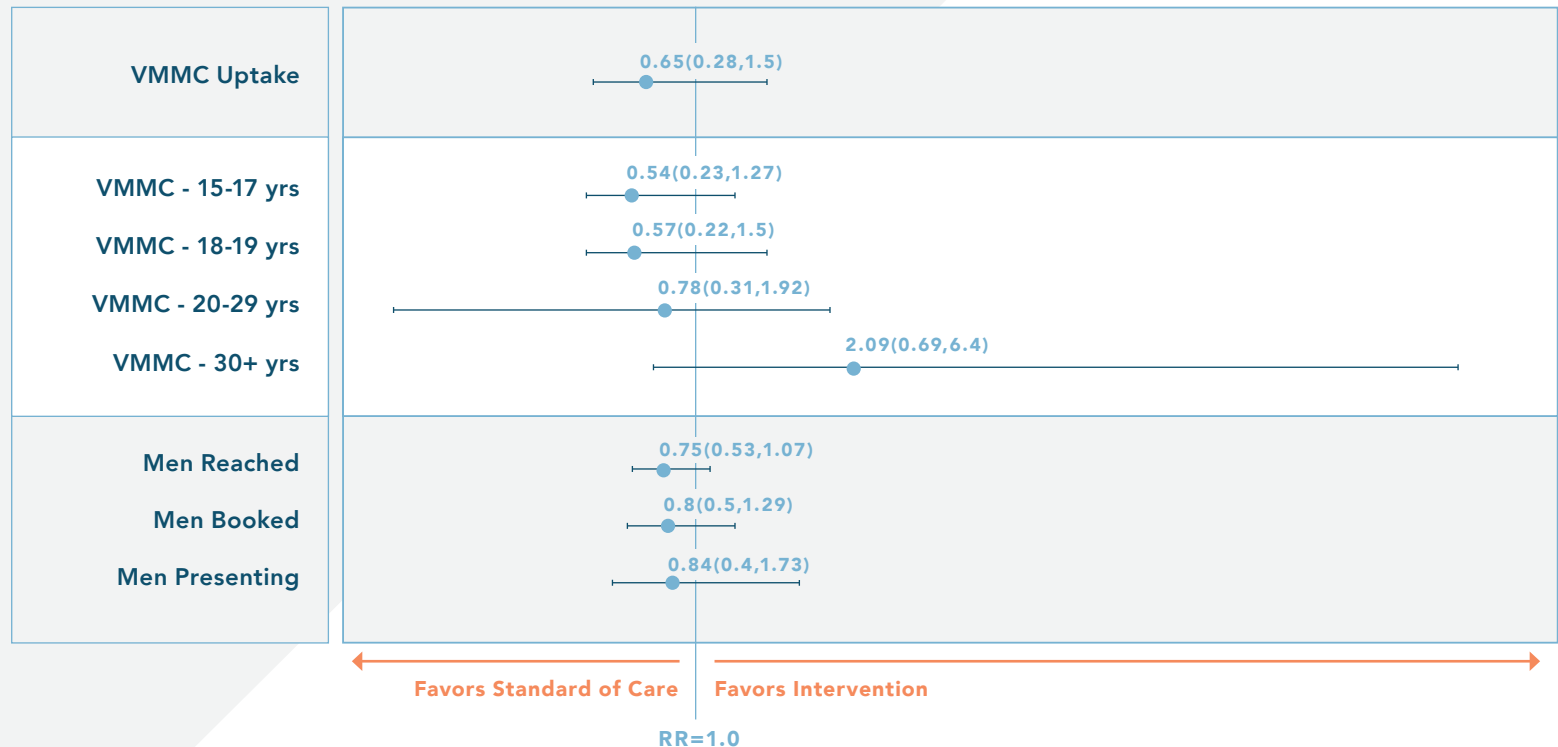
Our trial found that the new demand creation intervention had no significant effect on VMMC uptake per mobilizer, nor on the number of men reached, booked, and presenting for VMMC per mobilizer (Figure 4). The direction of effect of the HCD-informed intervention on the 18-19 and 20-29 years age group was in favor of the intervention, although not significant.

FIGURE 3:
EFFECT OF NEW DEMAND CREATION INTERVENTION



Offering an HIV self-test also had no effect on VMMC uptake, nor on men reached, booked, and presenting for VMMC per mobilizer (Figure 5). Self-testing did not have a significant effect on VMMC uptake in any age category, although there was a non-significant doubling of VMMC uptake among men over 30 years, indicating that older men are interested in self-testing.

FIGURE 5:
EFFECT OF OFFER OF HIV SELF-TESTING



This lack of detectable effects may be due to a number of factors related to the design of the intervention, the logistical challenges of implementing it, and the design of the study itself.

- ▶ The segmentation was carried out in July 2016, but the study did not begin until February 2018, during which time the number of uncircumcised males in the targeted segments declined. Males in those segments were more likely to be under 20 years old, and the intervention did not prioritize segments with larger proportions of older men.
- ▶ The intervention addressed only some of the barriers to VMMC uptake: it focused primarily on pain and on HIV testing, and did not address other concerns, for example about loss of income, which is potentially a significant factor for men of working age.
- ▶ Not all the insights gleaned from the intervention design process were successfully carried over into the final interventions. Many mobilizers found the segmentation tool difficult to master, time-consuming and poorly designed. In response, the implementer converted it to an electronic (tablet-based) tool. However, some mobilizers struggled to use the electronic version, or did not use it as intended because they had developed a negative attitude towards segmentation. Difficulties with the power supply and internet access further complicated use of the electronic tool.
- ▶ Despite the focus on pain, the Pain-o-Meter tool was not used consistently by all mobilizers, because clients found the images offputting, indicating a weakness in the design process.
- ▶ In general, it seemed that older mobilizers were less able to deliver the new intervention than younger ones. Younger, high-performing mobilizers had been involved in the design of the intervention, but they were not well represented among mobilizers assigned to the new-intervention arm of the study.

- ▶ The number of active mobilizers was sub-optimal: only 105 out of the 132 mobilizers reached at least one man to discuss VMMC during the six-month period, and the majority of mobilizers referred none or only a few men.
- ▶ Monitoring of mobilizers was inadequate, due for mobilizers to operational challenges with transportation.
- ▶ Incentive structures made it advantageous for mobilizers to address younger boys in group settings, rather than older men individually.
- ▶ Some mobilizers delivered only abridged or selective versions of the new intervention, and some in the HIV self-testing arms of the study did not always offer the self-testing kit, because they felt it made the outreach session too long. Inadequacies in performance such as these are common challenges with new interventions, and under normal conditions a program would replace mobilizers whose performance was seriously deficient, but the study design did not allow for replacing mobilizers part-way through trial.

In Zimbabwe, the new interventions were also piloted and rolled out in five districts of Zimbabwe that were not part of the randomized controlled trial (RCT), where the VMMC program was funded by the US President's Emergency Fund for AIDS Relief (PEPFAR). In these districts, the conversion rate (the proportion of men booked for circumcision who followed through and completed the procedure) more than doubled, from 30.9% (out of 2,002 circumcisions booked) before the roll-out to 69.3% (out of 3,864 circumcisions booked) one month later, and it was above 70% in each of the six subsequent months. While not as rigorously evaluated as the RCT, these programmatic results imply a correlation between the new interventions and improved conversion to VMMC.

Further analysis is ongoing to ascertain whether the difference in results between the trial and non-trial districts was due to variations in the way the interventions were implemented, since in the non-trial districts the mobilizers had more flexibility about how they used the tools.



PROCESS EVALUATION

A process evaluation conducted in Zimbabwe led to other, qualitative insights into the effectiveness of our new interventions there. Mobilizers found that approaching clients individually – rather than in groups, as they would often do in the standard program – enabled a more focused conversation, and that segmentation allowed them to identify the client’s needs and address them with targeted messaging; they found this was more effective in persuading a client to be booked for VMMC. However, sessions using the new tools tended to last longer.

Mobilizers who had initially resisted having frank conversations with potential clients about pain reported that targeted messages on the topic that provided credible-seeming information increased trust among potential clients. Some mobilizers did not show the Pain-o-Meter directly to potential clients because they felt that the revised version was still too

alarming, and they also reported that the seven-point pain scale was too complex; however, with time they internalized the messaging and were able to talk sensitively to clients about the pain they were likely to experience. Clients exposed to these messages before the procedure expressed a better experience with pain during and after circumcision.

The process evaluation found that men offered HIV self-testing preferred this to provider-delivered testing, due to privacy and confidentiality concerns. Mobilizers said that once a man reported testing HIV negative, it was easier to persuade him to follow through and undergo VMMC.

Overall, the process evaluation established that the pilot interventions (and HIV self-testing) were feasible and acceptable methods for generating demand for VMMC.

These are just the first of many potential interventions that can be created using our human-centered design approach.





Extending the Impact

One of the most valuable aspects of our approach is that it is applicable beyond Zambia and Zimbabwe, and can be adapted to other markets to support the design of similar programs. The VMMC behavior framework eliminates the need for duplicating efforts to understand the VMMC journey from scratch in new countries, significantly increasing the return on investment through economies of scale. The framework is adaptable to local contexts: for example, specific barriers can be added or subtracted to reflect men's experiences. Ideally, segmentation will be performed in each country (but is not essential), and our model also provides the survey structure for this.



To support the application of this framework and design approach in other places, we developed a suite of four Action Catalyst Tools (see following page). Used sequentially, they enable implementers, funders, and other stakeholders to improve existing interventions or systematically develop new ones. The tools relate directly to the behavioral framework, and they are similarly informed by the principles of human-centered design and behavioral science, and based on extensive research among men and their influencers.

In combination with the VMMC behavior framework, the Action Catalyst Tools offer a powerful way for countries to contextualize the application of our model to their program. Rather than adopting interventions wholesale from other contexts, programs can take the underlying principles and insights, and use the same techniques, in order to design effective interventions suited to the context and characteristics of males in their country. The framework and materials offer a common structure and taxonomy for different countries to understand and share successful approaches.

The Action Catalyst Tools offer a powerful way for countries to contextualize the application of our model to their program.

VMMC BEHAVIOR FRAMEWORK

Understand the “big picture” of what’s preventing men from undergoing VMMC. The four tools below all reference this framework.

PLAN

Where should we focus our efforts?

PORTFOLIO MAPPING TOOL

Identify opportunities for developing new or improved interventions

INFORM

Who should we target with interventions?

PERSONA TOOL

Define different groups of men by understanding their unique challenges

DESIGN

How can we create more effective interventions?

INTERVENTION DESIGN TOOL

Generate new intervention ideas that address the different barriers men face

IMPROVE

How can we make our interventions work better?

INTERVENTION IMPROVEMENT TOOL

Guide a process of improving the effectiveness of interventions

🔍 Download the Action Catalyst Tools here:
<https://www.malecircumcision.org/resource-bundle/action-catalyst-tools-voluntary-medical-male-circumcision>

- 2
- 3
- 1
- 4

	1 REASSURE	2 PATE	3 RELIEVE
LACK OF BENEFIT RELEVANCE	<p>Believe there is no risk in emergency</p> <p>Improved perception by women</p> <p>See lasts longer</p> <p>men in relationships</p>	<p>Believe there is no risk in emergency</p> <p>Improved perception by women</p> <p>men in relationships</p>	<p>Believe there is no risk in emergency</p> <p>Improved perception by women</p>
ANTICIPATED PAIN	<p>Anticipated pain of procedure</p>	<p>Anticipated pain of procedure</p>	
ANTICIPATED LOSS	<p>Anticipated loss of weight</p> <p>Anticipated loss of religious observance</p>	<p>Anticipated loss of weight</p> <p>Anticipated loss of religious observance</p>	
DISTRUST	<p>Uncertainty of procedure steps & duration</p>		
UNCERTAINTY			
SHAME			





1. AUDIENCE (AND PARTNER)

TARGET OUTCOMES:

SENSE OF CONTROL OVER LOSS

ACCURATE VE EXAM SENSE OF LOSS

MORE KNOWLEDGE

INCREASED IN-CLINIC REVIEW

INCREASED SOCIAL SUPPORT FROM PARTNERS/PEER

SAVINGS BUILT

PARTNER ENGAGEMENT

MOBILIZED

TESTIMONY & WORD OF MOUTH

EXPERIENCE
MASS MEDIA

BE DILIGENT IN HEALING

PROVIDE DETAIL (MORE EXPLICIT)

LACK OF BENEFIT RELEVANCE
Influencer
Circumcised Men

INFLUENCE

LACK OF BENEFIT RELEVANCE
Channel
IPC
Interpersonal Communication

LACK OF BENEFIT RELEVANCE
Influencer
Friends

LACK OF BENEFIT RELEVANCE
Influencer
Partner

LACK OF BENEFIT RELEVANCE
Influencer
Health-Care

LACK OF BENEFIT RELEVANCE



Guidance for Future Applications of the Approach

Our experience designing and implementing interventions for VMMC using a human-centered design approach led us to several insights that we believe are relevant beyond their initial application of generating demand for VMMC. Programs seeking to change behavior in relation to other development challenges should consider these lessons.

**WE DON'T "GENERATE" DEMAND:
DEMAND EXISTS IN PEOPLE**

Demand is present, whether consciously or latently, in the forms of individuals' needs, wants, and aspirations. Demand is best met by understanding these and designing products, services, and marketing to align with and meet them.

**PEOPLE MAKE DECISIONS AND
BEHAVE WITHIN A SOCIAL AND
ENVIRONMENTAL CONTEXT**

They accept or reject options based on their own expectations and those of others in their social network. Influencing behaviors requires understanding and engaging the conscious and unconscious drivers of those behaviors.

**SUPPLY AND DEMAND ARE
INHERENTLY INTERLINKED**

Good products and services promote demand for their use. Likewise, demand prompts a supply that responds properly to people's needs and wants.

**CUSTOMERS VIEW SUPPLY AS A
SET OF POTENTIAL SOLUTIONS IN
COMPETITION TO MEET THEIR DEMAND**

They will pick the option that they feel best meets their needs at a price (in money, convenience, time, etc.) that they can afford. Understanding this helps us to position our solution as the most preferable.

TARGET POPULATIONS FOR OUR PROGRAMS SHOULD BE VIEWED AS “CLIENTS” RATHER THAN “BENEFICIARIES”

People are not passive recipients of programs: they have free will and use it to accept or reject what is offered or available, according to their needs and wants. This is as true of a health service like VMMC as it is of a consumer product or service.

APPROACH SOLUTIONS AS PORTFOLIOS, NOT AS AN INDIVIDUAL INTERVENTION

Behavioral challenges in global health are complex and need to address many aspects of a person’s life across the progress they need to make. There are no magic bullets: intervening at a single point only is unlikely to address the challenge adequately.

HUMAN-CENTERED DESIGN IS AN ENTIRE APPROACH, NOT A STEP

The principles of human-centered design should be applied across the entire project. Human-centered design isn’t a standalone task or simply a workshop – it informs the project approach from start to finish, and enables programs to design a wide range of solutions specific to their context.

AVOID CREATING AN INSIGHT-TO-ACTION GAP

Approaching research and solutions in isolation will result in the development of an “insight to action” gap. While this frustration is widely observed and discussed, the reality that we too often create it ourselves is not.

References

1. Factsheet - World AIDS Day 2018. Geneva: UNAIDS; 2018.
2. Auvert B, Taljaard D, Lagarde E, et al. (2005). Randomized, controlled intervention trial of male circumcision for reduction of HIV infection risk: the ANRS 1265 Trial. *PLoS Med.* 2(11):e298.
3. Bailey C, Moses S, Parker CB, et al. (2007). Male circumcision for HIV prevention in young men in Kisumu, Kenya: a randomized controlled trial. *Lancet.* 369:643–56.
4. Gray H, Kigozi G, Serwadda D, et al. (2007). Male circumcision for HIV prevention in young men in Rakai, Uganda: a randomized trial. *Lancet.* 369:657–66.
5. WHO/UNAIDS technical consultation on male circumcision and HIV prevention: research implications for policy and programming. Geneva: World Health Organization; 2007.
6. Njeuhmeli E, Forsythe S, Reed J, et al. (2011). Voluntary medical male circumcision: modeling the impact and cost of expanding male circumcision for HIV prevention in eastern and southern Africa. *PLoS Med.* 8:e1001132. doi:10.1371/journal.pmed.1001132.
7. WHO progress brief: voluntary medical male circumcision for HIV prevention – July 2018. Geneva: WHO; 2018.
8. <http://www.unaids.org/en/regionscountries/countries>
9. Djimeu Wouabe E (2013). Scoping report on interventions for increasing the demand for voluntary medical male circumcision. Washington, DC: International Initiative for Impact Evaluation.
10. Hatzold K, Chatora K, Taruberekera N, et al. (2017). Case study: Evidence-based demand creation and advocacy interventions for voluntary medical male circumcision scale-up in Zimbabwe. In: *Social Marketing and Public Health: Theory and Practice*; 2nd ed. Oxford, UK: Oxford University Press.
11. Hatzold K, Mavhu W, Jasi P, et al. (2014). Barriers and motivators to voluntary medical male circumcision uptake among different age groups of men in Zimbabwe: results from a mixed methods study, *PLoS ONE*, 9 (4): e85051.



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