



REPUBLIC OF ZAMBIA  
MINISTRY OF HEALTH

# COUNTRY OPERATIONAL PLAN FOR THE SCALE-UP OF VOLUNTARY MEDICAL MALE CIRCUMCISION IN ZAMBIA, 2012 – 2015



April 2012

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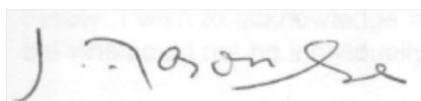
## FOREWORD

This operational plan is the result of an effort made by the Ministry of Health (MoH), in collaboration with partners, to address the need for an accelerated scale up of Voluntary Medical Male Circumcision (VMMC) as part of the MoH's comprehensive set of HIV prevention programs, and the Government of the Republic of Zambia's broader response to the country's HIV and AIDS epidemic.

Studies in other countries have shown that achieving universal coverage of VMMC can greatly reduce the rate of HIV transmission. However, existing VMMC programs in Zambia have encountered significant barriers to achieving the scale-up required to realize public health impact. As such, this operational plan was developed collaboratively by the MoH and implementing partners with the goal of aligning stakeholders, identifying best practices for VMMC implementation in Zambia, and providing a costed roadmap for achieving universal coverage by 2015.

By increasing the coverage of VMMC in Zambia, the MoH hopes to reduce the number of new HIV infections and achieve net savings in treatment-related costs. The goal of implementing the operational plan is to achieve 80% VMMC coverage among uncircumcised, HIV-negative men between the ages of 15 and 49 years by 2015 (1,864,396 circumcisions between 2012-2015).

The MoH encourages all stakeholders to continue to strengthen their commitment to the implementation of Zambia's national VMMC program over the next four years as part of the greater effort to address Zambia's HIV and AIDS epidemic.



Honorable Dr. Joseph Kasonde  
**Honorable Minister of Health**  
**Ministry of Health**

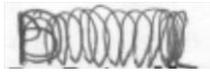


## ACKNOWLEDGEMENTS

The MoH wishes to recognize and thank the Directorate of Public Health and Research, the VMMC implementation partners, The World Health Organization (WHO), the Clinton Health Access Initiative (CHAI), and the Provincial and District Medical Offices for their strong contributions towards the development of this operational plan.

The Ministry also acknowledges with gratitude the financial support from the Bill and Melinda Gates foundation for the execution of this report.

It is the sincere hope of the MoH that the development of this report will facilitate the coordination and implementation of efficient and effective VMMC services in Zambia.



Dr. Peter Mwaba  
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## ACRONYMS

CIDRZ	Centre for Infectious Disease Research in Zambia
CHAZ	Churches Health Association of Zambia
CHAI	Clinton Health Access Initiative
DMO	District Medical Officer
HPCZ	Health Professions Council of Zambia
HMIS	Health Management Information System
MSI	Marie Stopes International
MoH	Ministry of Health
TWG	Technical Working Group
NGO	Non Governmental Organization
PEPFAR	President's Emergency Plan for AIDS Relief
PMO	Provincial Medical Officer
SFH	Society for Family Health
SCMS	Supply Chain Management Systems
USAID	United States Agency for International Development
UNAIDS	United Nations Programme on HIV/AIDS
VMMC	Voluntary Medical Male Circumcision
WHO	World Health Organization
ZPCTII	Zambia HIV Prevention, Care and Treatment II



## EXECUTIVE SUMMARY

Zambia began providing Voluntary Medical Male Circumcision (VMMC) services as a method of HIV prevention in 2007 in conjunction with the joint announcement by the WHO and UNAIDS that VMMC should be included as part of comprehensive HIV prevention and treatment programs. The National VMMC program was formally launched in 2009. Building on this foundation, this costed national operational plan will serve as a guide for significant VMMC program expansion in 2012-2015.

The rapid scale-up of male circumcision services will involve two phases: “catch-up” and “sustainability”. In the immediate “catch-up” phase, services will be ramped up to achieve VMMC coverage of 80% among HIV-negative adult men aged 15-49 years by 2015; specifically, a target of 1,949,000<sup>1</sup> VMMCs has been set for 2011-2015. While scale-up rates are increasing, there is a need for a dramatic increase in scale-up rates in order for the country to reach this goal. The target for 2012-2015 is 1,864,396 VMMCs performed on HIV-negative uncircumcised men ages 15-49 years old.

To meet this overall target the program is planning for an exponential smooth scale-up, from a target of nearly 200,000 VMMCs in 2012 rising to almost 870,000 in 2015. Reaching these targets could prevent an estimated 339,632 new HIV infections by 2025<sup>4</sup>. In the extended “sustainability” phase expected to begin in 2016, scale-up will focus on reaching male infants. The early infant male circumcision (EIMC) program aims to reach 80% of male newborn infants annually by 2020.

The roll-out of the operational plan will build upon the efforts already underway and the systems in place. As such, implementation of the operational plan will start immediately and build exponentially as the program scales up. Sustained national political leadership, advocacy, and the involvement of key stakeholders and opinion leaders will be critical to the success of the national VMMC program in Zambia. The implementation of VMMC will be aligned to the existing MoH structure, with the government taking the leadership role in coordination of the program, while leveraging the experience of implementing partners with whom there will be enhanced collaboration.

Zambia has designed its own service delivery guidelines to optimize the volume and efficiency of VMMC services within the Zambian context. The key elements of this efficiency model include: dedicated service days, accessible service locations, efficient mix of models, efficient activity scheduling, mobile services, efficient client flow, task-shifting, procedural efficiency, and VMMC commodity efficiency.

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1 Njeuhmeli E, Forsythe S, Reed J, et al. Voluntary Medical Male Circumcision: Modeling the Impact and Cost of Expanding Male Circumcision for HIV Prevention in Eastern and Southern Africa. *PLoS Med* 2011; 8(11): e1001132. doi:10.1371/journal.pmed.1001132



Without a focused strategy that is successful in creating demand among large numbers of males in the target age range to seek VMMC services, investments in VMMC infrastructure and human resources will not have the intended impact. As such, demand generation is not only a key priority for year 1, but will also be emphasized throughout all four years of the “catch-up” phase of the program, so that demand for the service remains high and targets can be met. Significant emphasis will be placed on linking service delivery with demand.

The resources required to implement the operational plan were estimated based on an analysis of the full cost required for the program and are currently projected to be USD \$196 million over 4 years. This cost estimate yields an average cost per VMMC over 4 years of \$105, including all direct and indirect costs related to the provision of VMMC.



## A. INTRODUCTION

Zambia began providing Voluntary Medical Male Circumcision (VMMC) services as a method of HIV prevention in 2007 in conjunction with the joint announcement by the WHO and UNAIDS that VMMC should be included as part of comprehensive HIV prevention and treatment programs. To date, three randomized clinical trials in Kenya<sup>2</sup>, South Africa<sup>3</sup>, and Uganda<sup>4</sup> have shown that VMMC can reduce female-to-male transmission of HIV through heterosexual intercourse by roughly 60%. Given these strong clinical results, Zambia has set an ambitious target of scaling VMMC programs to reach 80% of HIV-negative uncircumcised men 15-49 years by 2015.

The National VMMC program was formally launched in 2009 and the MoH's National Male Circumcision Strategy and Implementation Plan for 2010-2020 elevated male circumcision as a core intervention in Zambia's national HIV prevention strategy. The National AIDS Strategic Framework 2011-2015 also identified male circumcision as a core priority. Building on the foundation laid over the past five years, this operational plan will serve as a guide for significant VMMC program expansion in 2012-2015.

The rapid scale-up of VMMC services will involve two phases: "catch-up" and "sustainability". In the immediate "catch-up" phase, services will be ramped up to achieve VMMC coverage of 80% among HIV-negative adult men aged 15-49 years by 2015; specifically, a target of 1,949,000<sup>5</sup> VMMCs has been set for 2011-2015. While scale-up rates are increasing (84,604 VMMCs were performed in 2011, up from 63,604 in 2010), there is a need for a dramatic increase in scale-up rates in order for the country to reach these goals. The target for 2012-2015 is 1,864,396 VMMCs performed.

To meet this overall target the program is planning for an exponential smooth scale-up, from a target of nearly 200,000 VMMCs in 2012 rising to almost 870,000 in 2015 (Figure 1). Annual targets by districts are included in Appendix 1. Reaching these targets could prevent an estimated 339,632 new HIV infections by 2025<sup>5</sup>. In the extended "sustainability" phase expected to begin in 2016, scale-up will focus on reaching male infants. The early infant male circumcision program aims to reach 80% of male newborn infants annually by 2020.

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2 Bailey RC, Moses S, Parker CB, et al. Male circumcision for HIV prevention in young men in Kisumu, Kenya: a randomized controlled trial. *Lancet* 2007;(369):643-656

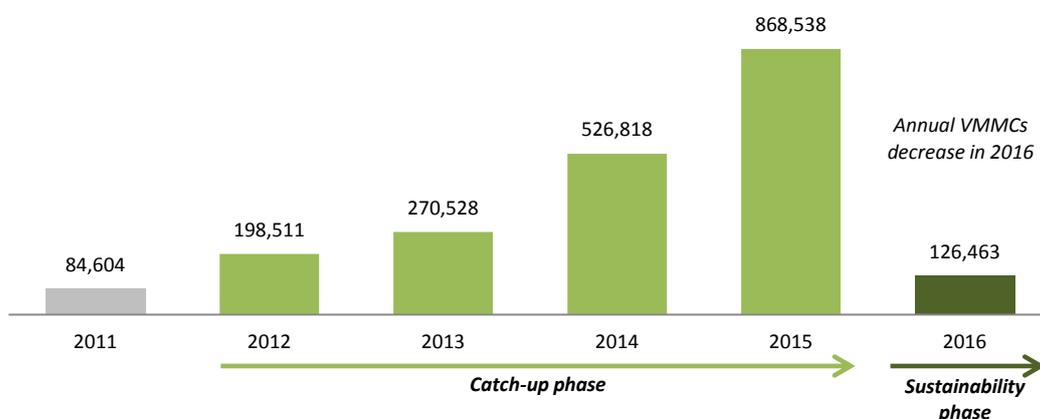
3 Auvert B, Taljaard D, Lagarde E, et al. 2005 Randomized, controlled intervention trial of male circumcision for reduction of HIV infection risk: The ANRS 1265 trial. *PLoS Med* 2005; 2(11): e298. doi:10.1371/journal.pmed.0020298

4 Gray RH, Kigozi G, Serwadda D, et al. Male circumcision for HIV prevention in men in Rakai, Uganda: a randomised trial. *Lancet* 2007; (369): 657-666

5 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* 2011; 8(11): e1001132. doi:10.1371/journal.pmed.1001132



**Figure 1: Annual VMMCs required to achieve 80% target by 2015 (with exponential scale-up)**



The targets during the “catch-up” phase represent a major increase over current annual VMMC volumes, and will require strong leadership and advocacy, as well as a clear implementation plan for both service delivery and demand creation. Communication will be prioritized along with resource mobilization, monitoring and evaluation, stakeholder coordination and accountability.



## B. CURRENT SITUATION AND GAP ANALYSIS

Since the introduction of VMMC in 2007, over 167,000 VMMCs have been performed nationally; 89% of these VMMCs have been performed in the past two years (63,604 VMMCs in 2010 and 84,604 VMMCs in 2011). Thus far, however, the number of VMMCs performed each year has fallen short of annual targets. For example, the estimated 84,604 VMMCs performed in 2011 represents only 56% of the 150,000 target. Moreover, 2011 VMMC volumes have been far lower than the 2012-2015 targets laid out in this operational plan.

There were 287 sites in Zambia providing VMMC services as of end October 2011. Service delivery and demand generation has to date been mainly partner-driven using two models: 1) a dedicated VMMC service delivery model with a hub and outreach teams sent to public and private health facilities on designated days, and 2) a non-dedicated service provided on an ad hoc basis as patients presented and as providers were available.

Current program capacity is significantly less than theoretical capacity. Over the past four years, 837 health care professionals in the country—including physicians, nurses, and clinical officers—have been trained as VMMC providers on the preferred method, dorsal slit. However, not all health care workers (HCW) trained are currently providing VMMC, and those who provide services do so anywhere between one and six days per week depending on the site, its service delivery model, demand, and availability of resources. Therefore, while the country theoretically has the capacity to complete 1,473,000<sup>6</sup> VMMCs per year, actual capacity is significantly lower given the amount of time that staff are actually dedicating to VMMC.

The provincial<sup>7</sup> VMMC targets required to achieve 80% VMMC coverage vary greatly as they account for not only population size, but also HIV prevalence, and VMMC coverage rates. The incorporation of these factors results in targets which range from over 300,000 VMMCs in Northern Province to less than 31,000 VMMCs in North Western Province over the course of program scale-up (Figure 2).

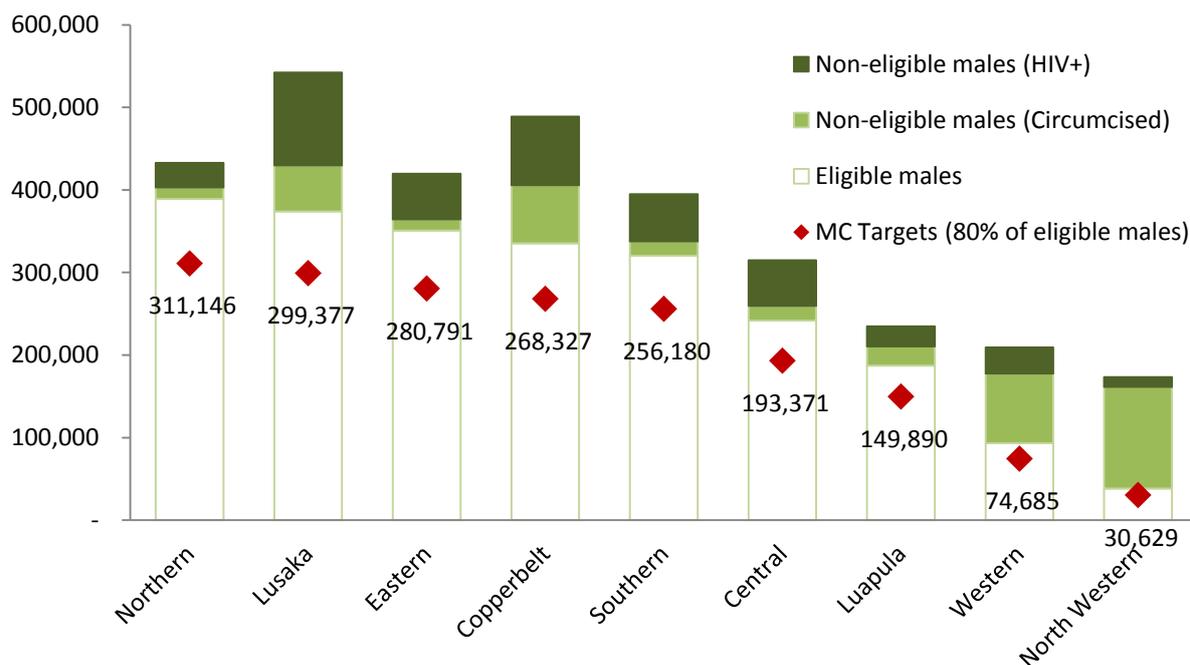
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<sup>6</sup> Estimate based on assumptions if each of the trained providers were able to complete 10 procedures per day on an estimated 176 productive working days.

<sup>7</sup> A tenth province, Muchinga Province, was announced by President Sata in October 2011, but details on population and district boundaries are not yet available. This province will constitute the northern portion of Northern Province.



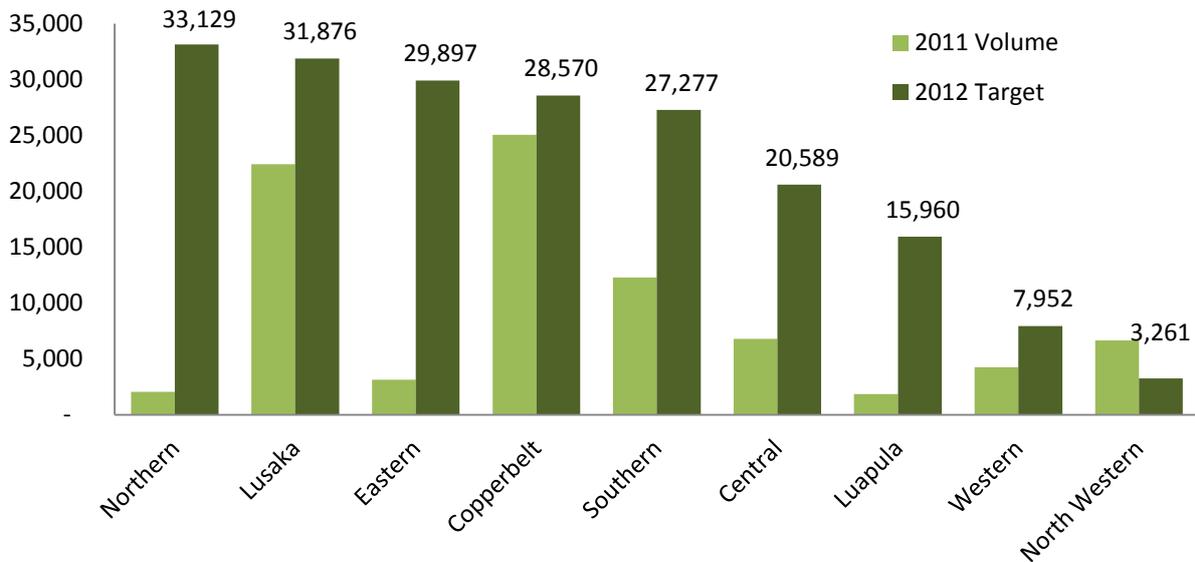
**Figure 2: VMMC eligibility among males aged 15-49 years and targets by province (2012-2015)**



The gap between current VMMC volumes and annual targets is larger in some provinces than others, as illustrated in Figure 3. These gaps, as well as the overall provincial and district targets, will be used to help guide resource allocation decisions and activity planning. VMMC scale-up in provinces with high targets and low rates of VMMC such as Eastern and Northern Provinces will require greater demand-side efforts to address cultural acceptability, as compared to others. Western and North Western Provinces have smaller population size and cultures that are already more accepting of circumcision. They may be able to scale-up faster than the others, building on their performance to date.



**Figure 3: 2011 VMMC volumes vs. 2012 targets**



This operational plan seeks to achieve universal coverage of VMMC by 2015 through addressing the barriers to uptake identified since program inception. These include:

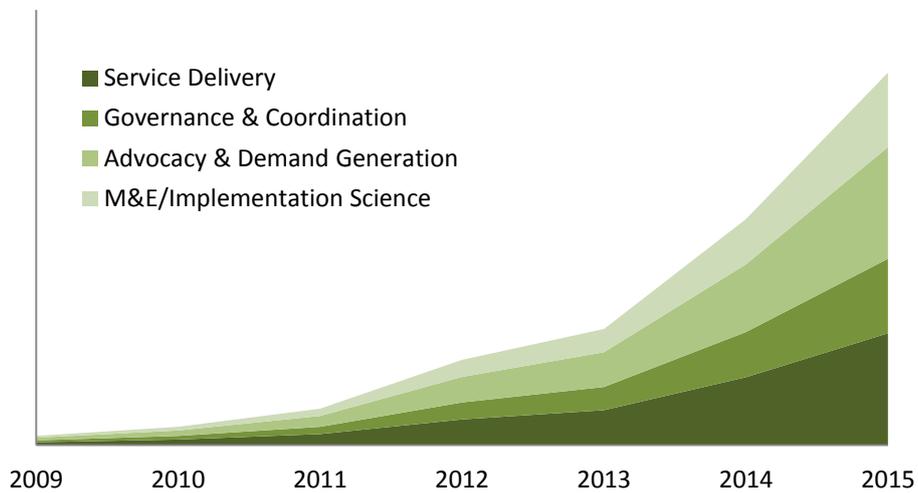
- 1) The need to generate stronger demand and to better match supply and demand;
- 2) The need to scale-up service delivery capacity;
- 3) The need to address the significant gap between resources required to achieve targets and those currently allocated to VMMC;
- 4) The need for stronger management and coordination systems to ensure targets are met; and
- 5) The need for stronger feedback between M&E and implementation science data to improve the efficiency and effectiveness of service provision.



### C. PLANNING FORWARD: 2012-2015

This operational plan will accelerate the scale-up of the VMMC national program that was officially launched by the government in 2009. The roll-out of the operational plan will build upon the efforts already underway and the systems in place. As such, implementation of the operational plan can start immediately across all pillars and build exponentially as the program scales up. Demand creation need not wait for service delivery, for example, but should concurrently scale-up. This concept is illustrated in Figure 4. Certain key investment activities will need to be prioritized in 2012 in order to achieve the rate of scale-up necessary to reach 2015 targets. These are outlined in the pillar descriptions below and are the emphasis of this operational plan.

**Figure 4: Concurrent scale-up of VMMC investment, activities and targets**



## **Pillar 1: Leadership & advocacy**

Sustained national political leadership, advocacy, and the involvement of key stakeholders and opinion leaders will be critical to the success of the national VMMC program in Zambia. Advocacy efforts for VMMC will identify and engage individuals at the national, provincial, district, and community levels. These efforts will include stakeholders from the highest levels of national government to traditional, community and religious leaders. While each stakeholder group will play a different role, the advocacy and outreach efforts of all will be important for scaling-up of VMMC nationally.

To improve and strengthen political leadership, focal point persons will be identified within the government at all levels. In particular, the MoH will be responsible for taking the lead and driving the VMMC agenda forward. Cooperating partners will play a vital role by providing technical and financial support to help strengthen the capacity of the MoH to lead program roll-out.

### ***National level***

At the national level, VMMC champions will be identified from within the broader community, including political, traditional and religious leaders, and other popular (male and female) community figures such as musicians, fashion models, athletes, and radio disc jockeys (DJs). These VMMC champions will commit to a minimum number of national media appearances, as well as a minimum number of community appearances each year<sup>8</sup>. Furthermore, to ensure that VMMC has the cross-cutting support necessary for wide-scale roll-out, collaboration will be sought between the MoH and other line ministries, as well as across branches of the MoH (e.g., Maternal and Child Health (MCH)). The VMMC agenda should be highlighted and prioritized by the existing inter-ministerial committee on HIV of the National AIDS Council (NAC), which will serve as a platform for advocacy.

The official launch of national VMMC guidance documents will be planned and attended by key stakeholders and high-level opinion leaders. A VMMC advocacy toolkit containing informational materials, frameworks, and other tools to support the dissemination of targeted (by age, gender, position, etc.) audience-appropriate VMMC messages will be developed and distributed. Materials tailored specifically for female audiences will be included in the advocacy toolkit in order to address the role women play in demand generation (i.e., in infant, adolescent and adult VMMC decision-making), and because it is vital that women themselves accurately understand the benefits of VMMC, the partial effectiveness of VMMC for men, and VMMC's lack of protection against HIV for individual women. National-level advocacy meetings designed to inform and sensitize key opinion

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<sup>8</sup>The National Male Circumcision communication strategy 2012 includes detailed strategies on messaging and key themes on VMMC.



leaders will be held including members of parliament, members of underlying ministries, traditional leaders, women's groups, religious leaders, and business leaders. Advocacy efforts directed at national media, including heads of news media agencies, will be prioritized.

### ***Provincial and district levels***

At the provincial level, advocacy activities will feed into those that occur at the district level. Provincial Medical Officers (PMOs) will distribute information to key constituencies and ensure that VMMC is regarded as a key component of the overall health program in their districts. Moreover, they will have responsibility for making sure that information provision is integrated throughout the program and is reaching women (including through MCH related services).

VMMC will be officially launched in each of Zambia's provinces; guidance for launch dates and program content will be provided at the national level. VMMC advocates will be asked to participate in provincial planning meetings as well as the launch, especially in provinces that have traditionally been resistant to VMMC uptake. Sensitization workshops with key provincial opinion leaders will be held. Training in communicating about VMMC with both males and females will be done for health promoters, two from the provincial office and two from each district.

Information regarding VMMC will flow through normal MoH channels for health-related informational materials, and will be disseminated by PMOs to the District Medical Offices (DMOs), and, then to the facility level. Each district will appoint an individual to coordinate VMMC communication efforts at the district level; this individual will advocate for the acceptance of the procedure among local headmen, key community opinion leaders, and important community based organizations (CBOs), including women's groups. This person will be responsible for identifying, engaging and coordinating the efforts of community groups. At the district level, advocacy will be largely grassroots; much of the information to be disseminated will also flow through the existing health committees. Emphasis will be placed on generating community-owned leadership in driving a gender-sensitive VMMC agenda.

In addition to playing a leadership and advocacy role within the country, Zambia's VMMC decision-makers will also advocate for VMMC scale-up at the global level, by disseminating evidence from Zambia's experiences to the global community via publications and key conferences, as appropriate.



## **Pillar 2: Governance & coordination**

MoH governance and coordination at national, provincial and district levels will be instrumental to achieving the targets and ensuring accountability at all levels. The implementation of VMMC will be aligned to the existing MoH structure. Ongoing monitoring of progress at the provincial and district levels will be critical to inform decision-making at the national and programmatic level to ensure that resources are optimized to meet national targets.

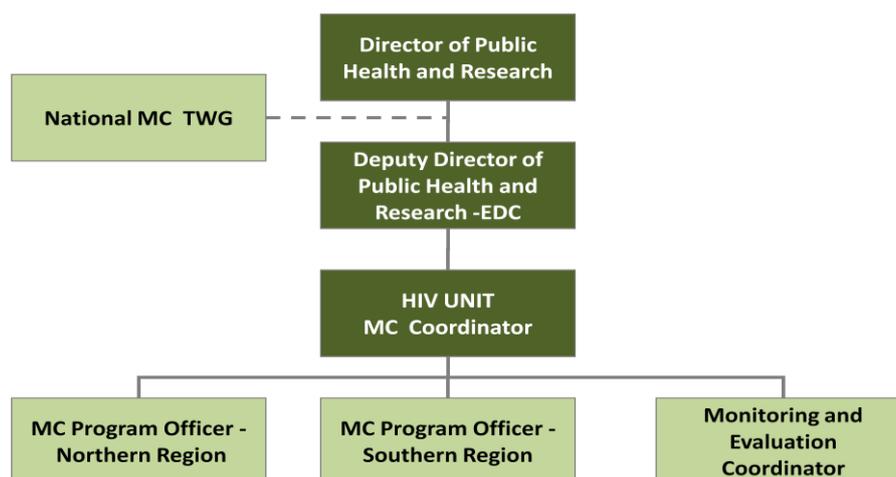
### ***National level***

The priority at the national level will be in strengthening coordination, reorganizing existing national service delivery, and improving the management of the national program in line with this operational plan. Major tasks will include orienting PMOs in planned VMMC activities, re-organizing partners to align VMMC responses to national targets and operational plan activities, and supporting provincial offices to engage in preparatory activities to set up a platform for operational plan implementation. The MoH will also be responsible for collecting and analyzing financial and program performance data to ensure that the program is on track to meet its targets and to identify any potential implementation challenges. Coordination at this level will be critical in defining the pace at which districts and provinces will be able to implement VMMC activities.

Identification of human resources to provide administrative leadership and governance at MoH headquarters, provincial and district health offices will be an immediate priority. At the national level, a core technical team will be headed by the National VMMC Coordinator under the HIV Unit in the Directorate of Public Health and Research - Epidemiology and Disease Control (EDC) (Figure 5). The other officers will include two VMMC Program Officers who will support provincial implementation in the country, sub-divided into two regions: 1) the northern region (Muchinga, Northern, Luapula, Copperbelt, North Western, and Central Provinces) and 2) the southern region (Eastern, Lusaka, Southern, and Western Provinces). One Monitoring and Evaluation (M&E) Officer will provide support to all provinces and will be responsible for supporting data collection, analysis and management.



**Figure 5: Governance structure of VMMC in Zambia (National level)**



The responsibilities of the core technical team, the National VMMC Coordinator, two VMMC Program Officers and one M&E Officer, will include:

- Coordinating and augmenting VMMC administrative structures at provincial and district levels;
- Communicating national-level VMMC targets and strategies for scale-up to stakeholders
- Providing oversight for provincial and district VMMC coordinators to ensure that VMMC targets are met;
- Supporting the development of action plans in order to ensure that VMMC services and appropriate infrastructure are included and available at all levels;
- Providing technical and administrative support;
- Ensuring that the scale-up is being implemented as per the operational plan;
- Ensuring that programs and services are including women as consumers of accurate information and as important partners in demand generation;
- Hosting TWG and quarterly implementation review meetings;
- Monitoring and evaluation of VMMC activities and developing national progress reports
- Collecting and analyzing financial and program performance data to track progress against targets;
- Rapidly identifying any potential implementation challenges and engaging key stakeholders to overcome them; and
- Identifying best practices and ensuring that they are being shared and utilized across the country.

This core VMMC team will assume day-to-day administrative functions related to VMMC programming in Zambia, executing decisions on behalf of the MoH. All major decisions



regarding VMMC will be made by the MoH in consultation with the national VMMC Technical Working Group (TWG).

Partner organizations will engage in VMMC programming through the national VMMC TWG, which will be called and chaired by the Department of Public Health and Research - EDC. The national TWG will comprise of four sub-committees—Service Delivery, Quality Assurance and Training, Communication and Demand Creation, and M&E and Research. These subcommittees will also play a leading role in the roll-out of VMMC, and will continue to provide guidance for all involved in VMMC throughout the ranks. The VMMC TWG subcommittees will make recommendations on the scale-up of VMMC services at the national level, which will then inform the decisions of the national VMMC TWG.

All partners will be accountable to the MoH to align their VMMC programming to the requirements of the operational plan. All partners will be expected to work closely with the national VMMC core technical team and the TWG through the National VMMC Coordinator in implementing VMMC activities, which will be expected to conform to existing systems of accountability at the district, provincial and national levels.

### ***Provincial level***

At the provincial level, an officer will be assigned to coordinate VMMC services. Coordination will be done by the Clinical Care Specialist. The duties of this officer will include:

- Working with coordinators at the district level to conduct facility assessments to inform decisions regarding VMMC sites, both present and future;
- Conducting technical supportive supervision;
- Ensuring VMMC is included in Provincial Technical Committee Meetings;
- Being responsible for the inclusion of VMMC in provincial-level action plans;
- Facilitating collaboration between provinces and partners;
- Aggregating and analyzing VMMC outputs collected at the district-level on a monthly/ quarterly/ annual basis;
- Identifying programmatic gaps and adjusting work plans and budgets accordingly; and
- Providing extra support to districts not meeting targets.

At the provincial level, the VMMC program will be overseen by the PMO reporting to the Regional Coordinator supporting the province (Figure 6). All VMMC responses will be coordinated by the Provincial Coordinator assigned to VMMC activities. Provincial Medical Offices will be tasked with providing technical supervision to districts within their respective provinces. Partner organizations will engage in VMMC programming at the provincial level



through the provincial partner meeting forum and will be accountable to the PMO. Partners will align targets to the MoH provincial targets in liaison with the PMO.

**Figure 6: Governance structure of VMMC in Zambia (Provincial level)**



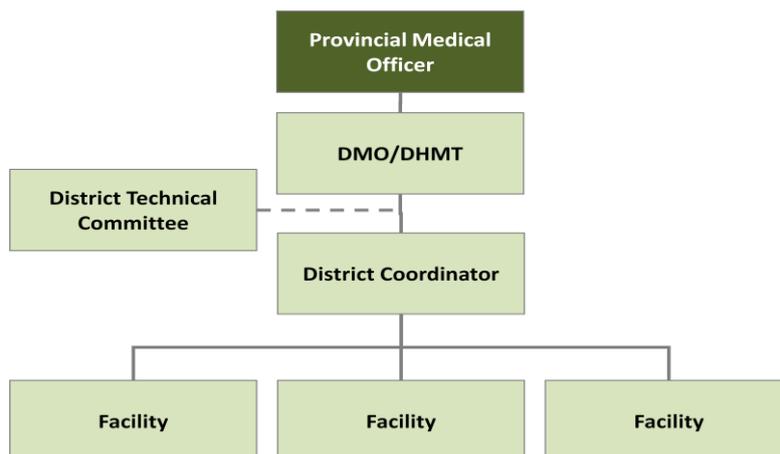
### ***District level***

A District VMMC Coordinator, assigned by the DMO, will be responsible for coordinating VMMC activities at the district level. The duties of this Coordinator will include:

- Including VMMC services in the action plans at district and facility level;
- Working with coordinators at the provincial level to conduct facility assessments that will inform decisions regarding VMMC sites, both present and future;
- Conducting technical supportive supervision;
- Facilitating collaboration between the district and partners;
- Ensuring VMMC is included in district technical committee meetings;
- Aggregating and analyzing VMMC outputs collected at the facility-level on a monthly, quarterly and annual basis;
- Identifying programmatic gaps and adjusting work plans and budgets accordingly;
- Supporting facilities not meeting targets;
- Orienting site facility managers on VMMC;
- Developing VMMC outreach and activity calendars based on targets;
- Identifying key community level opinion leaders and groups and engaging them to develop and implement demand generation activities;
- Coordinating VMMC providers in outreach efforts;
- Working with VMMC champion(s) to promote demand generation activities; and
- Ensuring activities are designed to reach women with accurate and complete information on VMMC.



**Figure 7: Governance structure of VMMC in Zambia (District level)**



At the district level, the VMMC program will be anchored under the DMO reporting to the PMO. All VMMC responses will be coordinated by the District Coordinator assigned to VMMC activities. All partners implementing VMMC activities will be accountable to the DMO and will actively participate in the district technical committee meeting. The district technical committee will report to the DMO for final decisions on implementation. The DMO will be accountable to the province for all VMMC activities implemented in their district. All partners will align to MoH district-level targets in liaison with the DMO.

### **Pillar 3: Service delivery of VMMC**

#### ***Linking services with demand***

A priority for Zambia’s VMMC program is to link service delivery with demand generation. Given that district targets vary significantly, careful planning will be used to ensure that resources made available to each district match the district’s level of demand, and that service delivery models are selected based on the district’s defining characteristics. These include the district-level target population of adult HIV-negative uncircumcised men, number and type of existing facilities, urban or rural profile, proximity to nearby resources, number of HCWs, as well as the number of trained VMMC providers. As part of the operational plan roll-out, each district will develop its own costed implementation plan tailored to this set of key defining characteristics.

#### ***VMMC coordination and service delivery models***

All VMMC service delivery activities in Zambia will be coordinated at the district level. In response to the diffuse distribution of the population and the acute shortage of public health workers in certain settings, outreach services will form an important part of VMMC scale-up in Zambia. Strong coordination around the movement of human resources and supplies will be needed to ensure that all VMMC services offered within each district include a complete and comprehensive service package that meets the established guidelines, even



in remote settings. The VMMC Coordinator will be assigned by the DMO at each District Health Office to oversee all scheduling and logistics for service delivery.

Public health facilities offering the standard VMMC package will be categorized into four service levels (Level A, Level B, Level C, and Level D) according to the facility type, availability of human resources, and the amount of support needed. Technical and financial support from collaborating partners will be focused on assisting facilities within each district to take ownership of the seven core VMMC-specific service delivery responsibilities: 1) community-level demand generation, 2) clinical service provision, 3) infection prevention, 4) behavioral counseling, 5) quality assurance, 6) data management, and 7) supply-chain management.

The four service levels are further described below:

- **Level A:** Usually a district or general hospital equivalent, health facilities in Level A will take on full responsibility for all seven core VMMC service delivery responsibilities and will also provide additional support to surrounding lower-level clinics through outreach activities coordinated by the VMMC Coordinator. Level A facilities will be expected to provide dedicated VMMC services several days of the week. Level A facilities will also need to serve as clinical training hubs for the district, with sufficient infrastructure to support a 2-3 table operating team. Level A facilities will also typically house an in-house medical officer to provide technical support for the district, and will serve as a referral hub for any adverse events requiring specialized attention.
- **Level B:** Usually a zonal health center equivalent, Level B facilities will also take on full responsibility for all seven core VMMC service delivery responsibilities, with sufficient staff to offer dedicated VMMC services on a regular basis. Level B facilities will be expected to provide dedicated VMMC services between 1-12 days per month. On days when VMMC services are offered, facility staff time and clinic space will be dedicated to VMMC ideally using 2-3 table operating teams. In some cases, Level B facilities will also serve as a referral hub for any adverse events requiring specialized attention.
- **Level C:** Usually a health center equivalent, Level C facilities will rely partially on external assistance from Level A or B facilities, through the district VMMC Coordinator, to offer dedicated VMMC services. Level C facilities may not be able to take on all seven core VMMC service delivery responsibilities initially, but will be responsible for coordinating all necessary demand creation activities to ensure sufficient numbers of eligible clients present on designated service days. They will offer sufficient infrastructure so that the minimum package of services can be offered using an outreach approach. Level C facilities will be expected to involve any



available health care providers from the facility during VMMC outreach service days. The number of operating tables as well as the frequency of service days (weekly, monthly, quarterly or bi-annually) will be established according to the needs of the catchment population. The use of medical tents or other temporary structures may be used to increase capacity where infrastructure is lacking.

- **Level D:** Usually a health post equivalent, Level D facilities will rely entirely on external assistance from Level A, B or C facilities, through the VMMC Coordinator, to offer dedicated VMMC services on specific days. Level D facilities may not offer any human resources or sufficient infrastructure for the minimum package of services, and will often require the use of medical tents or other temporary structures to increase capacity. Services provided at Level D sites will often be implemented as part of “mini-campaigns”, usually only a few times per year, and/or during special occasions. These “mini-campaigns” will usually last for several consecutive days and will offer dedicated services to large numbers of clients.

The estimated number of VMMC service days as well as expected output per year varies by facility type (Table 1). In the example below, a district’s target is 10,440 VMMCs in one year. Using the assumption that each operating table can offer an average of 10 VMMCs per dedicated service day, Table 1 illustrates the number of dedicated service days for VMMC in this district (390), and the number of VMMCs that could be planned in each level. However, as outlined below, opportunities exist for further increasing efficiency through the adoption of devices and the use of electrocautery. These opportunities will be pursued as available in order to increase the average number of VMMCs per service day.

**Table 1: Potential VMMC output in a district by facility type**

<b>Facility Type</b>	<b>Average # Operating Tables per Facility per Service Day</b>	<b>Estimated # Service Days per Year</b>	<b>Estimated # VMMCs per Year</b>
Level A	3	260	7,800
Level B	2	110	2,200
Level C	1	12	120
Level D	4	8	320
<b>Total:</b>		<b>390</b>	<b>10,440</b>



## *Zambian model for optimizing the volume and efficiency of VMMC services*

The following efficiency guidelines are designed to optimize the volume and efficiency of VMMC services within the Zambian context:

- 1) **Dedicated service days:** As an elective procedure, VMMC services will be most efficiently scaled-up if scheduled for specific days when multiple clients can be attended to by a dedicated team of providers. In keeping with the MoH's approach to the delivery of other services such as antenatal care, under-five pediatric care and antiretroviral therapy, VMMC services will be offered in public clinics on pre-scheduled days.
- 2) **Accessible service locations:** Experience to date in Zambia underscore the importance of bringing VMMC services within walking distance of as many beneficiaries as possible and employing effective community-based communication strategies in order to create consistent demand.
- 3) **Efficient mix of models:** Each district in Zambia will require a unique combination of higher and lower volume service delivery models in order to align supply and demand. The capacity and constraints of each VMMC service location must be properly assessed in order to inform cost-efficient planning.
- 4) **Efficient activity scheduling:** The frequency of VMMC service days will be determined according to facility capacity and the size of the beneficiary population within the catchment area. Daily, weekly, monthly, or quarterly VMMC service schedules for each facility should be established in advance and communicated clearly to beneficiary communities.
- 5) **Mobile services:** VMMC services must be flexible enough to provisionally increase service capacity at various service locations to meet demand in an efficient and targeted manner. Routine outreach services will be needed to supplement facility capacity and to improve access to VMMC services in remote areas.
- 6) **Efficient client flow:** VMMC clients should be managed in an efficient way to maximize provider time and productivity of dedicated VMMC service days. Wherever possible, clients should be offered group education and HIV counseling and testing services in advance.
- 7) **Task-shifting:** As a relatively simple procedure, VMMC will be offered by trained HCWs including nurses and clinical officers. Where appropriate, HIV counseling and testing and any other non-clinical tasks should be undertaken by qualified non-clinical personnel.
- 8) **Procedural efficiency:** Wherever possible, innovations should be utilized to increase the number of procedures that can be safely performed during the VMMC service day, including electrocautery for adult VMMC homeostasis during surgery or the use of approved VMMC devices.



- 9) **VMMC commodity efficiency:** Pre-packaged VMMC consumable kits and re-useable equipment sets should be used.

### **Devices**

In addition to the efficiencies currently being achieved, there are opportunities for additional efficiencies through the use of electrocautery and devices. Zambia will plan, implement, and adapt advocacy strategies to support the introduction and adoption of new technologies to accelerate VMMC scale-up. These devices are expected to improve service efficiency, maximize safety and effectiveness, decrease cost, and encourage greater demand for VMMC services. When new devices are available, communication strategies will be used to educate clients about the device and generate demand.

### **Human resource requirements**

Zambia is among the countries with the most severe human resources for health crisis, with only 1.24 HCWs per population of 1,000. Although Zambia does not require a surgeon to perform VMMC, there is still concern about the strain that rapid scale-up of VMMC could have on the health system. With a goal of almost 200,000 in 2012 and more than 800,000 in 2015, reaching these targets will only be possible if human resource efficiencies are maximized.

Three or more tables are recommended for optimizing HR efficiency using the dorsal slit surgical method of VMMC. With three VMMC tables at one site, one HCW can be assigned to physically examine clients on the three tables while the trained VMMC provider and oriented HCW attend to one table together. Classified employees are used to assist with non-patient contact related tasks such as autoclaving the surgical instruments and preparing the room. The shaded areas in Table 2 represent opportunities for efficiencies. High efficiency models can also be implemented in relatively small spaces, with more than one table per room. Tables can be separated by partitions in order to provide for patient privacy. Output efficiency increases as the number of tables increases, whilst the number of HCWs performing the physical exam stays the same.

**Table 2: Opportunities for efficiency: VMMC output for increased table numbers**

# Tables	HCW (Physical Exam)	Staffing Scenario				Output	
		HCW (Trained Provider)	HCW (Assistant to Provider)	Counselor	Classified Employee	# VMMCs per day	# VMMC per HCW per day
1	1	1	1	1	1	10	3.3
2	1	2	2	1	1	20	4
3	1	3	3	2	1	30	4.3



Another opportunity for efficiency is the use of electrocautery, which increases the average number of VMMCs performed per table per day from 10 to 15 and thereby reduces the number of HCWs required to meet the same targets (Table 3).

**Table 3: Opportunities for efficiency: VMMC output for increased table numbers and electrocautery**

# Tables	HCW (Physical Exam)	Staffing Scenario				Output	
		HCW (Trained Provider)	HCW (Assistant to Provider)	Counselor	Classified Employee	# VMMCs per day	# VMMC per HCW per day
1	1	1	1	1	1	15	5
2	1	2	2	1	1	30	6
3	1	3	3	2	1	45	6.4

Using a device could more than quadruple the VMMC output of each VMMC table from 10 to 40 VMMCs, as it will cut down the procedure time from an average of 45 minutes to an average of less than 10 minutes. Since a HCW assistant is not required when a device is used, the output per HCW would be increased by a factor of almost seven from the 3-table model using the dorsal slit (Table 4).

**Table 4: Opportunities for efficiency: VMMC output for increased table numbers and the use of a device**

# Tables	HCW (Physical Exam)	Staffing Scenario				Output	
		HCW (Trained VMMC Provider)	HCW (Assistant to Provider)	Counselor	Classified Employee	# VMMCs per day	# VMMC per HCW per day
1	1	1	0	1	1	40	20
2	1	2	0	1	1	80	26.7
3	1	3	0	2	1	120	30

### **Training requirements**

Inclusion of VMMC provider training in pre-service curricula for nurses and clinical officers will be the cornerstone for building VMMC provider competency in the long term. This will be achieved through use of an addendum for VMMC surgical components of the clinical curricula. In the interim, in-service training of existing HCWs will be used to meet training demands.

While there were 837 trained VMMC providers in Zambia as of October 2011, many areas do not have enough providers to meet demand. The number of additional VMMC service providers to be trained will be based on the existing service delivery models and district level calculations of need. Training of recent graduates that are being deployed to areas in



need of VMMC providers will be prioritized in the interim until pre-service training has been incorporated.

### ***Quality assurance***

Quality assurance will be implemented in two categories that cut across all domains of service delivery in the provision of VMMC services: 1) assessment and accreditation and 2) monitoring of adverse events. All facilities will be assessed and accredited ahead of the implementation of VMMC services. Site assessment and accreditation will be conducted in line with the Health Profession Council of Zambia (HPCZ) accreditation guidelines for VMMC-ready and compliant sites. Through routine monitoring, the number of adverse events will be recorded to measure the quality of service provided. This will help to identify areas where quality will need to be improved.

### ***Supply chain management***

To perform the dorsal slit procedure, two primary components are needed: 1) a consumable kit (1 kit per 1 VMMC), and 2) a reusable instrument set (1 set per 150 VMMCs). For a list of items included in the VMMC consumable kit and instrument set, as well as other related items, see Appendix 2.

The MoH and partners will collaborate to quantify national need at bi-annual forecasting meetings. VMMC commodity forecasting will be based on logistics, service statistics, and morbidity/demographic forecasts. The Supply Chain Management Systems (SCMS) program is currently the largest procurement and distribution agent for VMMC kits and equipment in Zambia. SCMS is expected to continue to play this role during the catch-up phase. Depending on availability and lead time, additional kits and equipment sets may need to be procured locally to ensure stock-outs do not impede scale-up.

It is expected that the role of SCMS will be transferred to the MoH as the program transitions to the sustainability phase and focuses on EIMC. At this point, products will be stored at and distributed by Medical Stores Limited (MSL), which manages the central warehouse and supply chain systems for medicines, laboratory and other general supplies that are distributed through the government health system.

### ***Equipment management***

For sites that do not have an autoclave, reusable instrument sets will need to be sent to an external facility, usually a district or higher-level hospital, with an autoclave. This process will also typically require additional supplies and personnel to manage storage and logistics for the newly sterile equipment. Facilities and districts with limited autoclaving capacity will be supplied with additional instrument sets in order to ensure that this does not create a



barrier to facility service delivery or meeting the demand for VMMC during outreach activities.

### ***Waste management***

Disposal of biomedical waste must be performed according to existing guidelines. In the event that a facility does not have a functioning incinerator, waste will be brought to the nearest health facility where an incinerator is available. Disposal of other materials such as used gauze will follow the same procedure.

### ***Site readiness***

As of end October 2011, there were 287 sites in Zambia providing VMMC. Many additional facilities have the space to provide VMMC services, but require additional investment in equipment such as couches, tables, lamps, and dividers to make them ready to provide the service. Expanding the reach of VMMC during the catch-up phase will require the use of mobile equipment, such as tents, to supplement the space available at the rural health center and health post level.

### ***District-level planning***

As part of planning at district level, the coordinating team will determine the combination of the four service levels that will be most appropriate for generating demand and delivering VMMC in each district. Assuming an average of 10 VMMCs are performed per table, per day, and that output may increase as efficiencies are realized, the coordinating team will assess the availability of existing resources (both facilities and staff) in their area to carry out dedicated VMMC clinics. This type of planning in each district has already begun and has informed the costing of the operational plan. Using district-level VMMC targets over the four years from 2012-2015, MoH staff in each district has worked to make decisions regarding service delivery and demand creation in order to determine the most feasible and efficient approach.

Table 5 illustrates the example of a district with a target of 10,000 VMMCs in 2012. During its planning process, this sample district chose to use its one district hospital (Level A) to offer dedicated VMMC services two days a week for 50 weeks out of the year, with 3 tables available on each day of service. Collectively, this facility can provide 300 dedicated days of VMMC services, or 3000 VMMCs per year. Three full-time equivalent (FTE) VMMC-trained healthcare workers will need to be available for the procedure itself: Three health care workers will be needed to assist with the procedure at each table (two counselors, a health care worker to do the physical examinations and a classified employee to serve as a hygiene assistant). One urban health center (Level B) in this district will have three tables and provide VMMC services once a week, 50 weeks a year, resulting in 1500 VMMCs.



Out of the 25 health centers (Level C) in this district, 15 will offer 2-day VMMC services every three months (4 times a year). Demand will be generated before the visit by the VMMC team. When the service is offered, a 3 table model will be used. These facilities will aim to offer the service to 3,600 men in 2012. There are 11 health posts (Level D) that will each run a 2-day mini-campaign three times per year, using 3 beds a day. This will result in about 1,980 VMMCs performed. In this example, there is a fairly even distribution of output across levels, with the majority coming from outreach activities to Level C health centers.

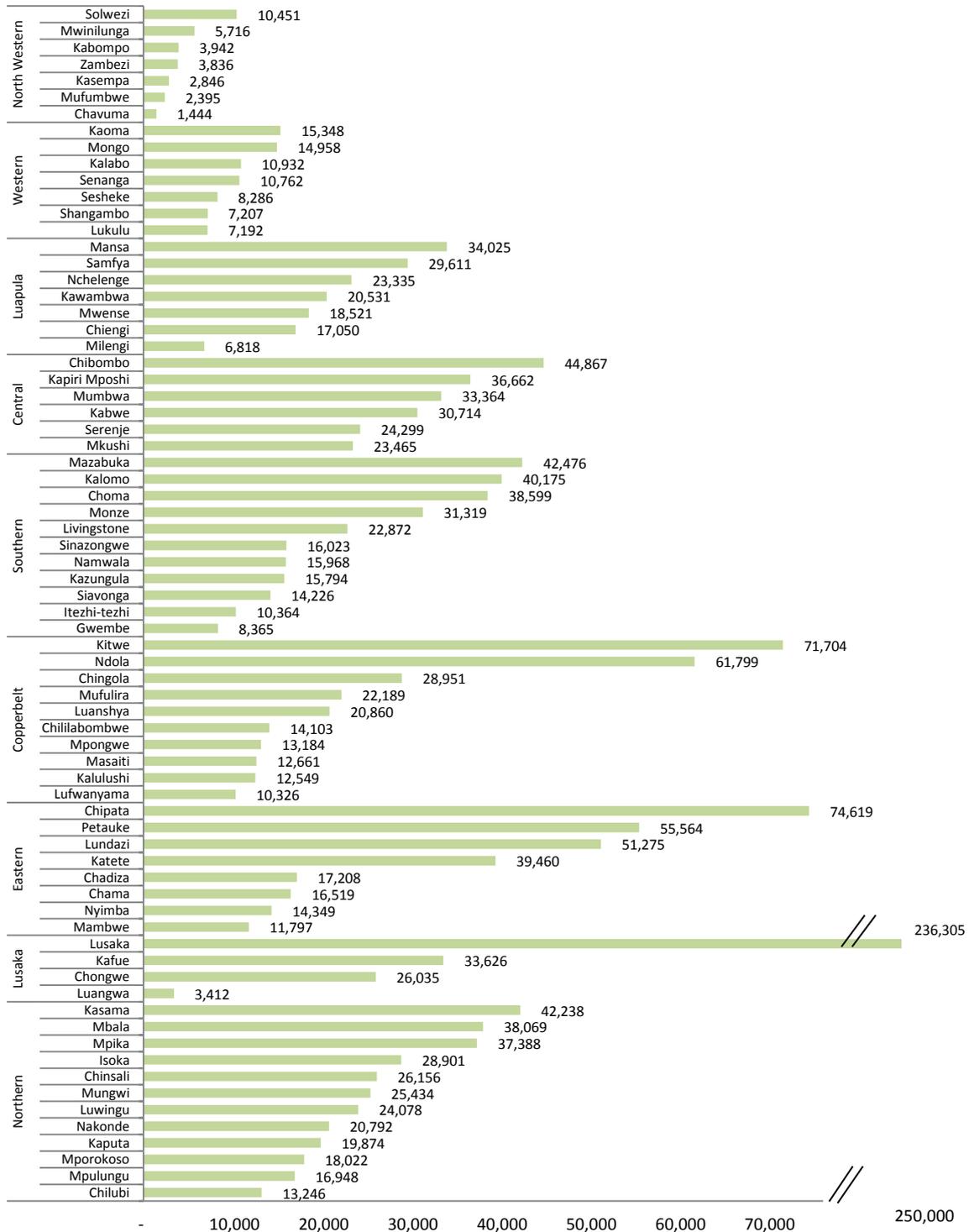
To reach their 2012 target, this district would need 6 full-time equivalent VMMC providers (10,000/ (10\*176)). They would need to assess the amount of time each of the currently trained providers is able to dedicate to VMMC, and conduct additional training to meet the VMMC provider requirements. They will also need to assess the availability of the additional health care worker staff, counselors and classified employees, and address any gaps in available staff.

**Table 5: District-level planning example (year 1 only)**

	#Facilities	#Tables	#VMMCs/ Table/Day	# Days/ Week	# Weeks/ Year	#VMMCs/ Year	% VMMCs from this level
Level A	1	3	10	2	50	3,000	30%
Level B	1	3	10	1	50	1,500	15%
				# Days/ Visit	# Visits/ Year		
Level C	15	3	10	2	4	3,600	36%
Level D	11	3	15	2	3	1,980	20%
					<b>Total:</b>	<b>10,080</b>	<b>100%</b>



Figure 8: Total VMMC target (2012-2015) by district



## **Pillar 4: Communication & demand generation**

The development of a well-coordinated, comprehensive demand generation strategy that considers the distinct informational needs of males and females is a crucial part of Zambia's national VMMC scale-up plan. Without a focused strategy that is successful in convincing large numbers of males in the target age range to seek VMMC services, investments in VMMC infrastructure and human resources will not have the intended impact. As such, demand generation is not only a key priority for year 1, but will also be emphasized throughout all four years of the catch-up phase of the program, so that demand for the service remains high and targets can be met.

All demand creation activities will utilize the messages detailed in the National VMMC Communications and Advocacy Strategy, which has been created by the communications subcommittee of the VMCC TWG, and was reviewed to ensure attention to inequality in relationships and women's distinct needs. This document serves to identify target audiences and create VMMC messaging for each group that ties their behaviors to the desired behavioral outcomes, and links them with the appropriate channels of communication. Demand generation messages are medically accurate, evidence-based, and consider the cultural sensitivities of the local population. Information needs for women about the benefits and limits of VMMC and importance of continued condom use and VCT will be integrated into demand creation and communication materials for females.

National-level VMMC media coverage will be implemented in 2012, and will be sustained through the end of 2015. This large, national effort will address key behavioral determinants for VMMC uptake and will require a number of key activities. Each of these components will serve to increase overall demand for VMMC:

- A press conference sensitizing journalists and news broadcasters on the purpose of the national VMMC program and key messages related to its scale-up;
- Sustained, radio and TV spots addressing key determinants of VMMC uptake using messages from the National VMMC Communications and Advocacy Strategy;
- Creation of an informed national dialogue on VMMC via mass media channels, including phone-in shows, talk shows and interviews involving VMMC champions, VMMC experts and VMMC clients, female partners, and their families;
- Media appearances for well-known sports figures and musicians designated as VMMC champions;
- Engagement of national newspapers to publicize VMMC through press releases and news articles, including articles regarding women and VMMC;
- Use of the existing 990 Health Talkline for VMMC to answer questions from the public (male and females) on the procedure and local VMMC service delivery schedules in local languages;



- Development and distribution of direct-to-consumer VMMC informational and promotional materials in line with nationally-approved VMMC messages, including promotional leaflets and informational booklets for potential clients and their parents and female partners, and other promotional items, such as “chitenge” (cloth) and t-shirts;
- Development of informational take-home booklets for VMMC clients, detailing information about wound care and risk mitigation, and educating clients on EIMC (see Pillar 8), and separate booklets designed expressly for their female partners about post-surgery care and abstinence, supporting their partner post-surgery, partial protection of VMMC for men, and lack of protection against HIV for women at the individual level;
- Utilization of social media channels, such as Facebook groups, to provide information about VMMC promotional activities, accurate information regarding VMMC, facility-level service provision schedules, and the provision of a platform for VMMC clients to share their experiences; and
- Development of protocols for schedule changes and cancellations, including updating national VMMC on-line service schedule.

VMMC demand generation will also be a key priority at the provincial level, with the partner-supported focal point person at each provincial health office taking the lead for supervising demand generation efforts for the province. These activities should include:

- The identification of well-respected local VMMC champions to promote the service at both the provincial and district levels;
- The development of a gender-sensitive demand generation campaign connected with each provincial VMMC launch, and spearheaded by these local VMMC champions;
- The use of community radio stations to convey key VMMC messages, including:
  - Pre-recorded VMMC client testimonials, interviews, segments on ‘what women want to know’ led by well known / trusted women, radio profiles and mini radio documentaries; and
  - Phone-in shows (for males, females, and mixed-sex) led by local DJs covering range of VMMC-related topics on radio stations with high youth (male and female) listenership.



### ***Mid-media***

District-level VMMC focal point people will identify and follow-up with community-level advocates and gatekeepers who can create opportunities for grass-roots demand creation activities involving larger groups of community members and potential VMMC clients. These activities will include presentations and other informative and interactive activities performed for large groups of individuals with the support of VMMC champions, satisfied clients from the community, as well as experts such as service providers and health facility personnel. These may take place in churches, work places, tertiary institutions, schools and at other community gatherings or traditional festivals. Key VMMC messages, including local service schedules, may also be conveyed at the community-level through announcements using loud-speakers.

### ***Inter-Personal Communications (IPC)***

IPC makes up the cornerstone of VMMC demand generation activities at the local level, as it has been found to be one of the most effective means of creating demand for VMMC thus far in Zambia. To generate the demand required to reach targets, large numbers of dedicated IPC agents, or health promoters, are needed to engage potential VMMC clients and convince them to come for the service. As female partners are an important influence in the VMMC decision-making process, health promoters will also be trained to reach out to women with accurate and complete information about VMMC. The health promoter position will be partner-funded, and thus will not fall within the MoH payroll establishment.

### ***Coordination***

A VMMC focal point person should be appointed for each district to coordinate all demand generation efforts. This individual will be responsible for coordinating all recruitment, training, and monitoring related to inter-personal communication activities for participating facilities, including quality (accuracy, completeness, and clarity) of information provided regarding VMMC. The position will be partner-funded, may be part-time, and will report to the provincial VMMC focal person.

The number of VMMC health promoters needed for each district and facility will vary according to the volume of clients allocated to each facility annually (Table 6). For Level A and B facilities, which largely require a steady stream of 20 or more clients per service day, additional dedicated teams of VMMC health promoters are needed. For Level C and D facilities, which offer services less frequently, existing community and facility-based health promotion structures may be able to achieve the desired mobilization results. The National VMMC Communication and Advocacy Strategy offers specific guidance for gearing these activities around places and times where potential VMMC clients are likely to be found. This requires that health promoters be an active part of each community so that they can



conduct promotional activities in the catchment area of their assigned health facility. VMMC demand creation activities at the inter-personal level should involve a combination of one-to-one and small-group sessions, and can be very labor-intensive. Health promoters will need to be active in the community each day, talking to target males about the benefits and limits of HIV protection through VMMC for males and females. Each site should have approximately three health promoters for every 10 VMMCs a site is tasked with performing each day. The following table offers guidance to districts for calculating the number of VMMC health promoters that may be needed for each facility by type.

**Table 6: VMMC health promoters needed per district**

Level	VMMC service days per year	VMMC clients per service day*	Eligible men to be reached through IPC/year**	Days of health promoter time needed/year***	Full-time health promoters needed/year****
Level A	250 (5x/wk)	30	75,000	1,875	9
Level B	100 (2x/wk)	20	20,000	500	2
Level C	24 (2x/mo)	20	4,800	120	N/A
Level D	8 (2x 4-day campaigns)	40	3,200	80	N/A

\*Assumes ten VMMC clients per operating table per day (three tables in Level A facilities; two tables in Level B & Level C facilities; and three tables working extended hours during rural outreach campaigns).

\*\*Assumes an average uptake of 10% among eligible men reached through effective IPC.

\*\*\*Assumes that each full-time health promoter is able to effectively reach 40 eligible clients per working day.

\*\*\*\*Assumes that each full-time health promoter works a total of 220 days per year.

### ***VMMC promotions training and orientation***

Provincial-level trainings will be organized for district-level VMMC health promotion trainers; two or more VMMC health promotion trainers will need to be identified from each district. These trainers will be responsible for organizing bi-annual trainings for that district's VMMC health promoters so that they may respond accordingly to the needs of each participating health facility. A standardized training curriculum for VMMC health promoters will be established at the national level to be used at each training session. Orientation packages will also be compiled for use within existing community structures, including neighborhood health committees, safe mothers action groups, traditional leaders and other community leaders at Level B and C facilities. The following list offers guidance on the activities which health promoters should be trained to perform:

- Working with neighborhood health committees and local opinion leaders, to devise locally tailored, effective demand creation activities incorporating key messages laid out in communications strategy;
- Making presentations to large groups of people at businesses, schools, churches, and meetings called by local headmen;
- Collaborating with local CBOs to reach out to their networks and generate enthusiasm in the target population and those close to target populations; and



- Delivering VMMC promotional messaging broadcast on loudspeakers via Zambia News and Information Services (ZANIS).

For participating Level C and D facilities, local demand generation efforts will be spearheaded by members of the community, and linked to district-allocated facility targets. Facility managers at these levels will be oriented on demand generation strategies at the local level and will be provided with a comprehensive VMMC communications orientation package, which will help to guide them in their demand generation activities. Quality control (i.e., ensuring messages are accurate, complete and clear, and address the effects of VMMC on women) will be important at this level as well.

Another critical aspect of demand generation is the development of a schedule for the provision of VMMC services. Frequency of services and predictability is imperative in generating demand, as efforts can be focused around each upcoming day of service provision, particularly for Level C and D facilities. These schedules should be driven by local input regarding best times during the year for service delivery. If service provision schedules must be changed, appropriate notice must be given to potential clients to ensure that they do not appear on days when the service is not being provided.

### ***Recruitment & selection***

Health facilities will be responsible for ensuring that effective health promoters are recruited and in place at all Level A and Level B service sites. Facility staff are encouraged to solicit the help of neighborhood health committees and CBOs from within the catchment area to assist with the recruitment of potential VMMC health promoters for each VMMC site, while facility in-charges will have the responsibility of interviewing and making final selection of health promoters, with support from the DMO and any NGO partners who are financing the health promoters. Facility in-charges are encouraged to require health promoters to make a formal application and to conduct interviews for these positions. The ideal profile of VMMC health promoters, based on experience to date, should include the following:

- Represents the target community;
- Circumcised as adults;
- Very articulate and able to speak in public;
- Minimum level of education; able to read and write (urban especially);
- Highly motivated to work to promote VMMC for HIV prevention;
- Experience conducting community-based health education and health promotion; and
- Ability to effectively communicate accurate and nuanced information on VMMC and HIV/STIs in relation to males and to females.



Some good sources for identifying potential VMMC health promoters include neighborhood health committees (NHCs), existing youth groups, church groups, and satisfied VMMC clients.

### ***Monitoring***

Facility in-charges will be responsible for ensuring that the health promoters have the required materials, that they are providing accurate and complete information, and that they are working as effectively as possible to meet the program targets. In-charges will also need to designate someone to ensure that health promoters are conveying correct messages and following program guidelines in terms of voluntary recruitment. District coordinators should join health promoters in the field regularly to assess and document their performance.

### ***Ongoing technical support***

Facility in-charges are responsible for meeting with all health promoters on a regular basis, ideally once per month, to allow them to share experiences and to update them on the service schedule and the priorities for targeted demand creation. Health promoters should receive basic technical trainings at least twice per year. Health promoters should be familiar with the following information and procedures:

- **Key Messages about VMMC:** Should demonstrate proficiency with regards to the key messages about VMMC, as outlined in the National Communication & Advocacy Strategy, including the fact that VMMC provides partial protection for men, and no protection against HIV for women;
- **Referrals:** Should know how and when to refer potential clients; either to go to the clinic or to call 990, when they have questions the health promoters cannot answer;
- **Community Mapping:** Should be familiar with how to identify key stakeholders and gatekeepers within the community; and
- **Social Networking:** Should be familiar with basic principles of social networking, including how to identify peer opinion leaders, and how to penetrate diverse social networks.



## **Pillar 5: Monitoring & evaluation**

The M&E framework for VMMC has been developed with the goal of reporting on key achievements and evaluating the effectiveness of the male circumcision intervention as part of Zambia's overall HIV prevention strategy. Monitoring and evaluation mechanisms will, to the extent possible, be linked to mutual accountability mechanisms between the Government and cooperating partners. It will be linked to the overall MoH HMIS at the health facility and community level. Partner efforts will support national ownership and capacity building of sub-national institutions in order to reduce duplication and fragmentation.

The MoH has harmonized existing M&E tools for VMMC data collection and reporting. National level summary indicators have been developed and will be compiled by the HMIS unit at MoH. The four national summary indicators (HIA 2 indicators) incorporated in the MoH HMIS which will be used to assess program impact and improve the quality and efficiency of services are:

- Population coverage of VMMC: Proportion of males who have been circumcised;
- HIV status: Number of circumcised male who are HIV positive, HIV negative and unknown status;
- Adverse Events (AE): Proportion of moderate AE and severe AE among circumcised males; and
- Follow-up: Proportion of circumcised males with at least one post circumcision visit.

The M&E framework includes broader outcome and impact indicators on adverse events and behavior with specific targets (e.g., post operative abstinence, condom use, and multiple partners). When aggregated to the district level, this data will also inform any revisions to work plans and budgets as determined by the DMO.

### ***Monitoring***

Monitoring program implementation will be conducted by the government through HMIS and supported by cooperating partners. The monitoring arrangements will enable a participatory approach and will be based on the use of a selected number of indicators agreed upon by the MoH and partners. The data monitored by partners will include and build on national indicators.

Annual progress reviews will be carried out and brief reports will be produced by the VMMC national technical working group's M&E sub-committee in order to make any mid-course corrections as part of programme management.



Routine service data will be registered at the facility level using standard tools developed for the VMMC program. Patient data on the provision of VMMC is contained in the client information record form (intake form and follow up/review form) and registers at the facility level. Facilities will compile this data monthly using summary sheets which have been designed for this purpose. Data will then be sent to the District Health Information Officer (DHIO) as part of the current HMIS reporting schedule. Partners supporting implementation at the facility level will submit VMMC reporting to both the facility and respective district in a timely fashion in order to support incorporation in monthly reporting.

The following specific tasks will be prioritized:

- **Incorporation of revised M&E tools and indicators in HMIS:** The national M&E framework, indicators, and updated tools will be incorporated in the revised national HMIS summary.
- **Piloting the already developed M&E tools (registers and client intake forms):** Newly developed M&E tools shall be piloted in selected facilities by MoH and feedbacks shall be incorporated to finalize the data collection and summary tools.
- **Dissemination of the M&E framework and tools:** The national M&E framework will be disseminated to all provincial and district health offices. Subsequently, staff at all facilities providing VMMC services will be oriented on how to use the tools and reporting forms.
- **Provision of data audit visits to health facilities:** After initiation of M&E tools utilization by all facilities, bi-annual data audit visits by MoH and respective provincial M&E focal persons will be conducted focusing on facilities reporting inconsistent or not reporting regularly to improve data quality.

### ***Evaluation***

Strategic information will support continuous and systematic reviews of intervention effectiveness and implementation progress. It is critical to informing advocacy, policy development, strategic planning, M&E and donor reporting. Strategic information can be used to better understand how well VMMC interventions are working and what, if any, changes are required. To institute routine review of strategic information, the following meetings will be held each year:

- **Quarterly provincial level performance reviews:** Each provincial health office will hold quarterly status review of VMMC program implementation where all coordinators will attend to review their performance.
- **Quarterly national VMMC program performance review:** The MoH in collaboration with the VMMC TWG will review data quarterly to target follow-up with provinces throughout the year accordingly.



- **Annual national VMMC program performance review:** MoH in collaboration with all partners will facilitate a national meeting at end of the year to review program performance and share best practices. All provincial health offices will be represented and all scientific as well as operational research findings will be discussed.

The implementation of this operational plan will be reviewed at two points in the implementation cycle. There will be a mid-term review/evaluation at the end of 2013, and an end-of-cycle evaluation in 2015. The annual and mid-term reviews will be used as building blocks for the joint Health Sector Strategic Plan (HSSP) review processes.

## **Pillar 6: Implementation science**

Implementation science (IS) is a framework that attempts to improve the execution of programs by translating research findings and evidence into practice at scale. IS is expected to be a key component of the scale-up of VMCC services in Zambia. The role of IS in the Zambian program will be to inform MoH and partner organizations about best practices in service delivery, resource utilization, demand creation, behavioral change and utilization of technological solutions. IS has four component strategies that can be used individually and in conjunction to inform the VMMC program: a) utilization of monitoring and evaluation data b) operations research c) impact evaluation and d) cost-effectiveness estimation. The use of these methodological tools will provide a rigorous evidence-base to inform national policies and procedures in order to improve VMMC program performance and outcomes. Implementing partners and the MoH will work together to set a research agenda that best fits the program.

### ***Research prioritization***

For the Zambian program to efficiently use limited resources and to improve outcome effectiveness, research priorities which can contribute significantly to the success of the program must be identified. The focus should be on areas representing potential bottlenecks or barriers to reaching national targets for providing safe and effective VMMC services. This includes optimal methods for improving program efficiency and quality, effective demand generation models, models of services integration that reinforce VMMC service outcomes, supply chain management tools and methods for reducing costs and program impact assessments. Table 7 provides a general overview of priority areas, specific examples of research and evaluation topics, as well as a prioritization of needs based on the Zambian program context. Also, Table 7 indicates whether the source of information regarding best practices is mostly likely to be found in studies and practices in the region or within Zambia.



**Table 7: Implementation science prioritization**

Area	Example topics	Prioritization	Information Source
Efficiency	VMMC Surgical methods, VMMC devices, task shifting, task sharing, provider retention	High	Regional, Zambia
Demand creation	Community based, IPC models, referral systems, reaching out to women	High	Zambia, Regional
Quality	Adverse events, client satisfaction, client follow-up, CT rates, counseling services, client and female partner understanding of VMMC's effects	High	Zambia, Regional
Service integration	VMMC linkages with RH, FP and HIV services	Moderate	Regional, Zambia,
Commodities and supplies	Human resources, VMMC kits, VMMC devices	Moderate	Zambia, Regional
Impact	HIV incidence, health systems, economic productivity, behavioral	Lower	Regional, Zambia

### *Obtaining information for evidence-based decision making*

MoH will work in collaboration with implementing partners to frame research and evaluation priorities and ensure the incorporation of evidence into program practice. Given the goal of rapid program scale up from 2012-2015, research projects and impact evaluations that require longer time lines and more rigorous study designs will be unlikely to inform program scale-up in the immediate-term. This conclusion reflects the longer timeline generally required for complex study designs, including protocol development, ethical review, study implementation, analysis and dissemination of key findings. Therefore other approaches for collecting evidence, as well as IS tools should be utilized in conjunction with evidence generated from more complex research and evaluation projects.

### *Operations research*

Below is a selection of operations research topics that have particular relevance and importance for the Zambia VMCC program in the immediate term. The topics reflect the current needs of the program: to reach national targets, increase efficiency and safety and to assure the long-term effectiveness of the VMCC intervention. The following list is indicative, but by no means exhaustive.

- **VMMC Devices:** Studies will be conducted on the acceptability, safety, efficacy, and program integration of VMMC devices in Zambia. There is a strong expectation that a VMMC device will improve service efficiency, increase safety, decrease cost, and encourage greater demand for VMMC services. Preliminary assessments will be conducted and plans developed that facilitate uptake and utilization of a device when applicable WHO recommendations are made to assure rapid and smooth transition to device utilization.
- **Methods for improving efficiency of services:** Priorities have to be determined and set regarding best practices for surgery and services to promote efficiency and lower



per-VMMC costs. The Zambia country program will determine and implement its own approach for high-volume, high-quality service provision.

- **Increasing demand for VMMC services using referrals to VMMC:** Given the broad strategy for VMMC demand generation, IS will be used to understand the relative impact of communication strategies (e.g., media campaigns compared to interpersonal communication), to ensure resources are used most effectively. IS research will also be used to increase the use and efficiency of family planning, reproductive health and HIV prevention and treatment services as a referral for VMMC services. Assessments of effective referral and client follow-up, as well as potential client incentives will be evaluated.
- **Risk compensation:** Risk compensation is characterized as the increase in sexual risk behavior due to a belief that VMCC significantly reduces or eliminates one's risk of acquiring HIV. Well-designed prospective evaluations are expected to be key sources of information to assure that risk compensation does not offset the benefits of VMMC on HIV in Zambia. Further, interventions that maximize positive behavior change should be assessed and will be integrated into the VMCC program to maximize the beneficial impact on the epidemic.

**Synthesizing existing research and evaluation:** Significant implementation science research and evaluation on VMMC programs has been conducted to date regionally and within Zambia. Applicable and practical recommendations from such studies will be systematically analyzed, synthesized, disseminated, and utilized in program decision making.

Examples of program issues for which data can be synthesized and applied include:

- VMMC Devices – evaluation of device safety from field studies and regional studies;
- Effective counseling and informed consent procedures – evaluations of best practices; and
- Improving VCT testing rates – impact evaluations of specific interventions to improve uptake.

**Collating and analyzing M&E data:** Monitoring and evaluation data will be collated from public health facilities and partner organizations to inform the VMMC program (see Pillar 5: Monitoring & evaluation). Such data can be used not only to track program targets, but strategically used to improve the efficiency and quality of services. Tracking systems can provide real time and trend data for program decisions and modifications. Also, when aggregated to the district level, the VMCC program, health systems and other service data can be used to answer specific questions about the impact of the VMMC program.

Examples of specific topics where M&E systems can inform programs:

- Adverse events – tracking AEs by facility type, provider, and client characteristics;



- Behavioral data – assess risk factors of VMMC clients and relationship to VCT uptake;
- Service uptake tracking – adjusting communication models given demand seasonality; and
- Impact of VMCC on health systems – assessing impact of VMCC on provision of other services.

**Rapid targeted assessments:** Information and data may not readily exist or may not be locally applicable to answer all relevant questions that may arise during program implementation. Rapid assessments and streamlined evaluations can be useful tools for filling information gaps.

Examples of rapid assessments:

- Community-based interviews to assess acceptability of VMMC devices;
- Trends in the acceptability and demand for VMMC among sub-populations; and
- Interviews to assess and track provider satisfaction and retention.

**Process evaluation and documentation of practices:** The successes and failures of program implementation will be systemically gathered, analyzed and used to produce recommendations for mid-course corrections and program adaptations. Key quantitative process indicators will be incorporated in the M&E system and utilized to summarize program development and progress. Emphasis should be placed on process narratives that focus on prioritized research areas and topics (Table 7).

Examples of process evaluation objectives include:

- Narratives of program evolution;
- Documentation of program failures and reasons target objectives were missed;
- Delineate program performance scores to quantify success; and
- Documentation of program investments and costs.

### ***Dissemination and utilization of IS evidence***

For IS to be effective, evidence needs to be disseminated to ministry, partners and stakeholders and utilized for program decision making. The VMCC TWG, as well as the M&E sub-committee of the TWG are natural venues for the prioritization of implementation science topics and for providing updates on assessments and evaluations. In addition, bi-annual implementation science dissemination meetings should be held to inform program development during the critical implementation phases. The bi-annual meeting should be coordinated by the MoH, and be focused on evidence to improve program practice and outcomes with representation from national, provincial and district level officials. To ensure evidence becomes practice, the MoH is committed to using it to inform policy, and facilitating standardization of practices and monitoring progress on program changes.



Donors and partners are expected to play a significant role in providing resources and support for IS in key priority areas by supporting IS dissemination meetings, cooperating with the MoH in collecting information and implementing national policy.

## **Pillar 7: Resource mobilization**

As noted in the introduction of this document, the goal of the operational plan is to achieve 80% coverage of VMMC for uncircumcised, HIV-negative men in Zambia by 2015. The estimated 1,864,396 VMMCs required over 4 years to achieve this goal necessitates a dramatic increase in VMMC volumes over the 84,604 performed in 2011. While the service delivery models and scale-up plans outlined in this document are expected to improve the efficiency of resources directed towards VMMC, significant additional resources will be required to meet the stated targets.

### **Required resources**

The resources required to implement the operational plan were estimated based on an analysis of the full cost required for the program and are currently projected to be \$196.4 million over 4 years (Table 8).

**Table 8: Total cost of operational plan (2012-2015), USD million**

	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>Total</b>
Service delivery	\$23.3	\$18.4	\$45.3	\$73.9	\$160.8
Governance & coordination	\$4.2	\$4.0	\$4.3	\$4.4	\$16.9
Advocacy & demand generation	\$2.8	\$2.3	\$3.5	\$5.0	\$13.7
M&E/Implementation science	\$1.6	\$1.0	\$1.1	\$1.3	\$5.0
<b>Total</b>	<b>\$31.9</b>	<b>\$25.6</b>	<b>\$54.2</b>	<b>\$84.5</b>	<b>\$196.4</b>

This cost estimate yields an average cost per VMMC over 4 years of \$105, including all direct and indirect costs related to the provision of VMMC.

### **Government resources**

The government is committed to mobilizing the resources necessary to make the program a success and to achieve public health impact. Of the total costs, it is expected that the government will contribute USD \$3.8 million in the first year and USD \$29.9 million over the 4 year plan. The government contribution will be primarily focused on governance & coordination and service delivery activities where they can increase the level of existing MoH staff, equipment and infrastructure that will be dedicated to VMMC. It is estimated that the government contribution will support approximately 17% of the \$177.7 million required for governance & coordination and service delivery.



## Funding gap

Given a total cost of USD \$196.4 million over four years and government resources of approximately \$29.9 million, an additional USD \$166.5 million in funding will be required to fund the operational plan. The largest contributions are expected to come from the United States Government, through PEPFAR. PEPFAR has committed \$5 million in Fiscal Year (FY) 2011 and \$16 million in FY2012 funding, which is expected to be disbursed in 2012 and 2013 respectively<sup>9</sup>. For the purposes of this gap analysis, it has been assumed that PEPFAR funding remains at FY2012 levels through the end of the calendar year 2015. It is expected that additional funds will be re-programmed for VMMC from an existing Global Fund grant. This reprogramming is expected to provide between \$500 thousand to \$1 million per year in additional resources, for an average of USD \$3 million over the four years. The Bill and Melinda Gates Foundation has been one of the largest contributors of financial support to VMMC scale-up in Zambia. Their contributions are expected to continue, although the annual figures have not yet been determined, and are not included below.

**Table 9: VMMC operational plan resource envelope, USD million**

	2012	2013	2014	2015	Total
<b>Required resources</b>	<b>\$31.9</b>	<b>\$25.6</b>	<b>\$54.2</b>	<b>\$84.5</b>	<b>\$196.4</b>
<b>Available resources</b>					
GRZ	\$3.9	\$4.8	\$8.2	\$13.0	\$29.9
USG	\$5.0	\$16.0	\$16.0	\$16.0	\$53.0
Global Fund	\$0.8	\$0.8	\$0.8	\$0.8	\$3.0
<b>Total</b>	<b>\$9.7</b>	<b>\$21.6</b>	<b>\$25.0</b>	<b>\$29.8</b>	<b>\$85.9</b>
<b>Funding Gap</b>	<b>\$22.2</b>	<b>\$4.0</b>	<b>\$29.2</b>	<b>\$54.7</b>	<b>\$110.5</b>

At the time of printing, partner funding commitments for VMMC in 2012-2015 were still being finalized. The assumptions used in this analysis reflect information provided during initial discussions, however, it is expected that the finalization of this operational plan will facilitate a dialogue between the government and partners which will mobilize additional resources to close the current funding gap.

<sup>9</sup> The USG financial year runs from November 1<sup>st</sup> through October 31<sup>st</sup>, implying that FY2011 is November 1<sup>st</sup>, 2011-October 1<sup>st</sup>, 2012. As such FY2011 contributions will be most applicable to 2012 costs.



## **Pillar 8: Early infant male circumcision (EIMC)**

Early infant male circumcision (EIMC) for infants aged 0-60 days was introduced in Zambia with the launch of a Public Health Evaluation (PHE) in the beginning of 2008. This evaluation was undertaken by the University of Zambia Medical School, with all procedures conducted at the University Teaching Hospital (UTH) in Lusaka, and two other local clinics (Matero Ref and Kanyama) and concluded in March 2011. Following the conclusion of this evaluation, USG funding was provided to the Centre for Infectious Disease Research in Zambia (CIDRZ) through CDC to spearhead the scale-up of EIMC. To date, more than 2,000 neonates have been circumcised. The program has demonstrated the feasibility of EIMC in Zambia, yet the scale-up of the program has been slower than anticipated. The challenges facing the uptake of EIMC are similar to that of VMMC, but also include a lack of awareness among parents about the existence and benefits of EIMC.

There are a total of seven Level A and B facilities currently offering EIMC services, all located in Lusaka district. There are currently 35 trained EIMC providers in the country, and an additional 11 are currently undergoing training. Trained providers include doctors (surgeons, urologists, pediatricians, obstetricians, JRMOs), nurses (general nurses and midwives), and clinical officers. Other trained staff include 25 counselors, 3 theatre assistants, 1 peer supervisor, and 121 staff trained in the dissemination of EIMC information.

### ***Governance & coordination***

Governance structures will be similar to adult VMMC, but EIMC will continue to be coordinated by CDC and CIDRZ for the near future. However, because EIMC is a long-term program, leadership of the program and its staffing will be transferred to the MoH as EIMC becomes increasingly integrated into the list of available medical services.

### ***Service delivery***

EIMC implementing partners have developed an EIMC roll-out plan (2011-2013) that is currently pending approval by the MoH. While EIMC will be rolled out in all 10 provinces before 2020, scale-up efforts between 2012 and 2013 will focus on extending EIMC services in Lusaka Province and rolling out EIMC services to Eastern and Copperbelt Provinces. Initially, services provided at facilities outside of Lusaka District will be provided on an outreach basis, first extending to a number of Level A and B facilities in Kafue and Chongwe districts, and then to a number of Level A and B facilities in Eastern and Copperbelt Provinces. Plans for future roll-out may also be extended through Level C and D facilities, depending on demand for the procedure.



EIMC is performed using a surgical instrument kit and a single-use consumables pack. However, it requires a device called a Mogen clamp to complete the procedure which is not required for adult VMMC. A detailed list of surgical instruments, consumables and other supplies required for EIMC is included in Appendix 3. Decisions around supply chain management, including forecasting, procurement, distribution, and storage, will need to be determined at MoH TWG meetings as the program scales up.

### ***Advocacy & demand creation***

While there will be a range of national demand creation efforts similar to that of adult VMMC, the majority of the demand creation for EIMC will occur at the facility level. Information dissemination will be coordinated by antenatal and post natal staff, flow through antenatal and postnatal activities, and be supported by health promoters going out into the community. Information about the procedure will also be communicated through brochures and posters, radio, and talk shows.

Although the roll-out of EIMC will be subsequent to that of VMMC, initial demand generation for the procedure will be implemented through demand generation efforts for its adult counterpart. Specifically, a small amount of information regarding EIMC will be provided to VMMC clients as a part of their post-surgery educational information, so that they may learn more about the procedure and its benefits, and consider the procedure for their future male babies. As the majority of adult clients are either of childbearing age, or entering their productive years, educating them on EIMC will support the success of the program in the long-term.

### ***Monitoring & evaluation/Implementation science***

Additional indicators will need to be added to M&E registers for EIMC in advance of national roll-out. These indicators will be based on the M&E framework currently being used by CIDRZ. This data will be collected in the same manner of that of VMMC, and will be reported through standard MoH M&E reporting structures. IS requirements and priorities for the EIMC program will be assessed during the development of EIMC-specific scale-up documents.

### ***Resource mobilization***

EIMC has been incorporated into comprehensive national HIV prevention strategies and integrated into other national frameworks, including health sector strategies, poverty reduction strategies, maternal, child, and reproductive health strategies, and multi-sectoral HIV strategies and plans. The total funding secured from the USG for EIMC in 2012 is \$300,000, and is expected to continue. Additional funds will be mobilized in advance of 2016, when the program priority will shift towards EIMC.



## D. COST OF VMMC SCALE-UP

Implementation of the “catch-up” phase (2012-2015) of the operational plan has been costed from the perspective of public sector and partner providers in order to ensure that providers are able to budget appropriately for scale-up. A Microsoft Excel-based costing model was developed in order to estimate total resource needs, identify gaps, and mobilize the additional funding required to achieve program targets. The process of costing the operational plan allowed for discussions with all stakeholders on the most cost-effective approaches to meeting targets in different settings, and tracking the allocation of resources over the course of the program.

As this is an incremental cost analysis, costs of already existing items have not been included, such as infrastructure and equipment in already existing facilities. In addition, as scale up is expected to utilize existing resources such as space in public facilities, rent for these facilities was not costed. However, personnel costs were included and calculated based on the number of person days that will be spent on VMMC, since the volume of VMMCs required for scale-up far exceeds current volumes. Similarly, the portion of recurring facility costs such as maintenance, utilities and support staff that is attributable to VMMC services was estimated and included.

The structure of the costing model was based on four key activity areas, each of which has distinct cost drivers. The total cost to implement the operational plan is expected to be USD \$196.4 million (Table 10).

**Table 10: Total cost of operational plan (2012-2015), USD million**

	2012	2013	2014	2015	Total
Service delivery	\$23.3	\$18.4	\$45.3	\$73.9	\$160.8
Governance & coordination	\$4.2	\$4.0	\$4.3	\$4.4	\$16.9
Advocacy & demand generation	\$2.8	\$2.3	\$3.5	\$5.0	\$13.7
M&E/Implementation science	\$1.6	\$1.0	\$1.1	\$1.3	\$5.0
<b>Total</b>	<b>\$31.9</b>	<b>\$25.6</b>	<b>\$54.2</b>	<b>\$84.5</b>	<b>\$196.4</b>

### Service delivery

The unit cost of VMMC in Zambia is driven by the appropriate model for service delivery in a given area, which is dependent on existing infrastructure (e.g., roads and health facilities) and staff availability at the district level. As discussed under Pillar 3: Service delivery of VMMC, health facilities offering the standard VMMC package can be categorized into four service levels (Level A, Level B, Level C, and Level D) according to the facility type, and the availability of human resources. We further classified Level C facilities for costing purposes as either “short-distance” or “long-distance” according to how urban or rural they are. The



reason for this is the large difference in transport costs and staff time for health centers close to district hubs compared to health centers far from the district hub. Three districts – Lusaka, Ndola, and Kitwe – were assumed to have 90% short-distance Level C facilities and 10% long-distance. Nine districts – Chililabombwe, Chingola, Chipata, Kabwe, Kalulushi, Livingstone, Luanshya, Mansa, and Mufulira - were assumed to have 70% short-distance Level C facilities and 30% long-distance facilities. The rest were assumed to have an even split between short- and long-distance facilities.

For the purpose of costing, district level data was collected on the number of available facilities at each level, the number of potential tables per facility, and the average number of days per week or year that VMMC services could be provided. Using this data, the most appropriate mix of service delivery models was selected for each district and costing assumptions were developed (Table 11).

**Table 11: Key service delivery and cost assumptions by facility level**

Facility Type	Description	Service delivery model	Personnel count	Equipment investment	Travel/fuel and other running costs
A	District, General, or Tertiary Hospitals	VMMC performed by facility staff	Facility staff estimated based on table count (1-3) and HCW salaries	Electrocautery machines, furniture, and other required investments included based on table count	Surgery equipment and supplies
B	Zonal Hospitals	VMMC performed by facility staff			
C - Short distance	Health Centers	VMMC performed partially by staff at facility and partially by visiting VMMC teams, 1-3 tables	Facility staff estimated based on table count (1-3) and HCW salary and allowances for travel outside of duty station	Based on the number of teams required in each district, teams are equipped with tents, surgical equipment and electrocautery (for places where there is electricity)	Day-long trips required to transport outreach staff
C - Long distance	Health Centers	VMMC performed partially by staff at facility and partially by visiting VMMC teams, 1-3 tables	Outreach staff estimated based on table count (1-3) and HCW salary and allowances for travel outside of duty station		3-Day trips required to transport outreach staff
D	Health Posts	VMMC performed entirely by outreach teams, no reliance on health post staff to conduct VMMCs	Outreach staff based on 3 table teams HCW salary and allowances for travel outside of duty station		4-Day trips required to transport outreach staff

Based on the district level data collected and the assumptions above, the unit cost of service delivery and VMMC output for 2012-2015 were calculated for each level of facility. As illustrated in Table 12, the service delivery component varies significantly by facility level



due to the high personnel and vehicle costs of conducting outreach in rural areas. Districts will need to weigh the trade-off between a less expensive cost per VMMC at Level A facilities, with the need to provide services that are accessible to people, particularly in rural areas.

Moreover, as cooperating partners perform a significant portion of current VMMC volumes, an estimate of partner overhead costs associated with VMMC service delivery was included. For costing purposes, it was assumed that partners perform 65% of circumcisions and incur operating costs equal to 15% of the service delivery costs.

**Table 12: Unit cost of VMMC Service Delivery by facility level**

	Level A	Level B	Level C	Level D	Average*
Personnel	\$19.28	\$23.44	\$57.27	\$86.46	\$46.03
Running costs	\$9.09	\$7.06	\$5.00	\$2.57	\$6.09
Capital and infrastructure	\$5.03	\$10.26	\$4.95	\$4.95	\$5.60
Vehicles	\$-	\$-	\$13.34	\$13.34	\$8.20
<i>Level dependant costs</i>	<i>\$33.40</i>	<i>\$40.76</i>	<i>\$80.56</i>	<i>\$107.33</i>	<i>\$65.92</i>
Kits consumables	\$12.67	\$12.67	\$12.67	\$12.67	\$12.67
Partner operating costs	\$7.66	\$7.66	\$7.66	\$7.66	\$7.66
<i>Static costs</i>	<i>\$20.33</i>	<i>\$20.33</i>	<i>\$20.33</i>	<i>\$20.33</i>	<i>\$20.33</i>
<b>Service delivery total</b>	<b>\$53.73</b>	<b>\$61.09</b>	<b>\$100.89</b>	<b>\$127.66</b>	<b>\$86.25</b>

\*Note: Average is weighted by volume across the four levels.

**Table 13: Total unit cost of VMMC by facility level**

	Level A	Level B	Level C	Level D	Average*
Service delivery	\$53.73	\$61.09	\$100.89	\$127.66	\$86.25
Governance & coordination	\$9.04	\$9.04	\$9.04	\$9.04	\$9.04
Advocacy & demand generation	\$7.36	\$7.36	\$7.36	\$7.36	\$7.36
M&E/Implementation science	\$2.67	\$2.67	\$2.67	\$2.67	\$2.67
<b>Total unit cost</b>	<b>\$72.80</b>	<b>\$80.16</b>	<b>\$119.95</b>	<b>\$146.72</b>	<b>\$105.32</b>
<i>Estimated # of VMMCs</i>	<i>498,671</i>	<i>220,291</i>	<i>958,842</i>	<i>186,593</i>	<i>1,864,396</i>
<i>Estimated % of VMMCs</i>	<i>27%</i>	<i>12%</i>	<i>51%</i>	<i>10%</i>	<i>100%</i>

\*Note: Average is weighted by volume across the four levels.



## Governance & coordination

Governance and coordination costs were estimated centrally for each level of oversight and are not differentiated by region. This includes the cost of both MoH and partner personnel required for coordination and oversight of VMMC scale-up, as well as the logistical costs of supervision.

At the national level, personnel costs include the salary and benefits for 3 dedicated central staff at the MoH as depicted in Figure 5 above. Capital and investment costs include the purchase and maintenance cost of 1 vehicle for each of the 3 coordinators. Meetings and travel costs include annual oversight visits for national and regional coordinators assuming a 2-person team making 4-day and 7-day visits respectively. Provincial personnel costs include the salary of 1 provincial coordinator, while meetings and travel costs are driven by bi-annual 2-day PMO oversight visits to all districts. Personnel costs at the district level account for 50% of 1 FTE for a district level coordinator for every district, and district level capital costs include the provision of 1 laptop computer to each district every 2 years.

**Table 14: Governance & coordination costs (2012-2015), USD**

<b>Level &amp; cost category</b>	<b>Total cost</b>
<b>National</b>	<b>\$1,350,073</b>
Personnel (program management)	\$769,537
Meetings & Travel	\$361,848
Capital & Investment	\$218,688
<b>Provincial</b>	<b>\$1,381,712</b>
Meetings & Travel	\$1,017,600
Personnel (program management)	\$191,248
Admin & Running Costs	\$172,864
<b>District</b>	<b>\$7,829,962</b>
Personnel (program management)	\$7,078,122
Capital & Investment	\$414,400
Admin & Running Costs	\$337,440
<b>Partner</b>	<b>\$6,300,000</b>
Personnel (program management)	\$6,300,000
<b>Total</b>	<b>\$16,861,747</b>



## Advocacy & demand generation

As illustrated by the low VMMC rates in the majority of Zambian provinces, a major determinant of districts' ability to reach universal coverage will be their ability to run effective advocacy and demand generation campaigns. These campaigns will be delivered through two main methods: mass media and stakeholder meetings.

The mass media campaign will be managed centrally and incorporate billboards and television advocacy in English as well as radio spots in Zambia's four main languages (Table 15). It is also expected that the MoH will require partner support for the development and implementation of demand generation campaigns. As such, an additional 20% (\$769,634) was added to media campaign costs below to account for the cost of technical assistance.

**Table 15: VMMC mass media campaign costs (2012-2015)**

Item	Unit cost	Quantity	Total cost	Assumptions
Advertisement Design	\$3,000	1	\$3,000	
National radio advert production	\$1,000	5	\$5,000	
TV Spot Production	\$10,000	3	\$30,000	
Billboard Production & installation	\$2,000	12	\$24,000	
Billboard Rentals	\$1,000	72	\$72,000	
National Radio Adverts	\$38	18,000	\$684,000	500/month, 12months
TV Spot Dissemination	\$360	1,872	\$672,984	3 stations x 4/week x 39 weeks/year
MC IEC Materials	\$0.15	11,301,376	\$1,739,206	Assume 6 x target
Provincial radio advert production	\$200	20	\$4,000	5 messages x 4 languages
Provincial Radio Adverts	\$10	58,968	\$589,680	18 stations x 3/day x 39 weeks/year
Radio Talk Show	\$304	80	\$24,300	
<b>Total</b>			<b>\$3,848,170</b>	
			<i>Estimated cost of technical assistance (20%)</i>	<i>\$769,634</i>
<b>Grand total</b>			<b>\$4,617,804</b>	

Advocacy and demand generation meetings will be held at all levels: national, provincial, district, and facility (Table 16). At the national and provincial levels, advocacy meetings will be held for key groups of community leaders. These efforts will be managed centrally and concentrated in the early years of implementation. In addition to these efforts, additional funding will be provided to districts to conduct local advocacy meetings. At the facility level, demand generation will be done through community sensitizations. These sensitization-related activities will be lead by dedicated health promoters at Level A and B facilities and will be done as part of outreach at Levels C and D. The required number of community members sensitized to generate 1 VMMC was assumed to vary by facility level, assuming that harder to reach areas will require more demand generation efforts. For example, at Levels A and B it was assumed that 3 meeting attendees would be required to generate 1



VMMC. In Level C facilities it was increased to 4 attendees, and in Level D the cost was further increased to assume that 5 community members would need to attend a meeting in order to generate 1 VMMC. As meetings at Level C and D will be community-based and in rural areas, meeting costs reflect only the purchase of refreshments with the required IEC materials already accounted for in the media campaign budget.

In addition to the costs below, \$681,792 was included to hire approximately 142 health promoters at Level A and B facilities for 200 days per year, at an estimated \$6/day. Moreover, \$280,000 was included for the estimated cost to support CBOs in demand generation.

**Table 16: Demand generation meeting costs (2012-2015), USD**

		Days/ meeting	Attendees/ meeting	Meetings /campaign	Cost/person/ day	Cost/ campaign	Campaigns	Total cost	Assumptions
National	Business leaders	1	15	1	\$977	\$14,652	1	\$14,652	\$583 per person in travel
	Church leaders	1	15	1	\$977	\$14,652	1	\$14,652	
	Ministry leaders	1	10	1	\$139	\$1,390	16	\$22,240	\$583 per person in travel
	Paramount chiefs	2	222	1	\$387	\$171,715	1	\$171,715	\$583 per person in travel
Provincial	Business leaders	2	15	10	\$163	\$48,800	1	\$48,800	
	Church leaders	2	15	10	\$193	\$57,800	1	\$57,800	
	Other Gov't Ministry eaders	1	20	10	\$89	\$17,800	16	\$284,800	
	Traditional leaders	2	15	10	\$497	\$149,000	1	\$149,000	2 travel days + 1 driver
	Training for health promoters	5	24	10	\$118	\$142,040	4	\$568,160	
District	General advocacy meetings	1	15	74	\$228	\$252,710	4	\$1,010,840	
Facility/ Community	Level A&B, health promoter training	1	20	34	\$25	\$17,044	4	\$68,175	1 meeting, 20 people per 3 VMMCs
	Level C, meetings	1	20	239,710	\$1	\$4,794,208	1	\$4,794,208	1 meeting, 20 people per 4 VMMCs
	Level D, meetings	1	50	18,659	\$1	\$932,963	1	\$932,963	1 meeting, 50 people per 10 VMMCs
<b>Total</b>								<b>\$8,138,004</b>	
<i>Health Promoter, Salaries</i>								<i>\$ 681,792</i>	
<i>Contract partners for CBO demand generation</i>								<i>\$ 280,000</i>	
<b>Grand total</b>								<b>\$9,099,796</b>	



## Monitoring & evaluation/Implementation science

Monthly monitoring and evaluation for the scale-up of VMMC will be implemented through the existing HMIS reporting such that additional dedicated staff at the district level will not be required. As such, while a portion of district staff salaries has been included in the costing of this plan, the majority of incremental costs associated with M&E relate to the printing of tools, periodic program review meetings and technical assistance from partners on the use of implementation science to guide program decisions. A summary of M&E costs is provided in Table 17 below.

**Table 17: Operational plan M&E costs (2012-2015), USD**

<b>Cost category</b>	<b>Total Cost</b>
<b>Admin &amp; Running Costs</b>	<b>\$ 1,639,138</b>
Printing	\$ 1,019,138
Data collection	\$ 540,000
Supplies	\$ 80,000
<b>Meetings &amp; Travel</b>	<b>\$2,041,288</b>
Program Performance Review	\$1,037,594
M&E Tool Training & Dissemination	\$684,230
Data audit/validation visits to facilities	\$206,688
Meetings for IS dissemination	\$112,776
<b>Personnel (program management)</b>	<b>\$1,289,132</b>
Benefits	\$ 112,000
Salary	\$1,177,132
<b>Total</b>	<b>\$4,969,558</b>

Administration and running costs are driven by the printing costs of producing 1 intake form and 1 review form for all VMMC patients. Also included is the estimated data collection cost of operational research projects and supplies for annual M&E meeting materials.

Meeting and travel costs include quarterly provincial-level performance reviews which were costed at \$1,037,594 assuming 2-day meetings with 2 representatives from each district. The cost of initial training and dissemination of VMMC M&E tools was estimated at \$425,870 assuming 15 people per district attend a 2-day training at the district level; an additional \$258,360 was included for supportive supervision for a total cost of \$684,230. The cost of bi-annual data audit visits to 10% of facilities was projected at \$206,688. Lastly, \$112,776 was included for implementation science dissemination meetings.

Personnel costs include \$900,000 in support to collaborating partners for technical assistance and operational research. In addition, \$389,132 was included to account for 5% of the cost of a data clerk in each of the 74 districts.



## Appendix 1: ANNUAL VMMC TARGETS BY DISTRICT

Province	District	2012	2013	2014	2015	Total*
<b>Northern</b>		<b>33,129</b>	<b>45,148</b>	<b>87,920</b>	<b>144,949</b>	<b>311,146</b>
	Chilubi	1,410	1,922	3,743	6,171	13,246
	Mpulungu	1,805	2,459	4,789	7,895	16,948
	Mporokoso	1,919	2,615	5,092	8,396	18,022
	Kaputa	2,116	2,884	5,616	9,259	19,874
	Nakonde	2,214	3,017	5,875	9,686	20,792
	Luwingu	2,564	3,494	6,804	11,217	24,078
	Mungwi	2,708	3,691	7,187	11,849	25,434
	Chinsali	2,785	3,795	7,391	12,185	26,156
	Isoka	3,077	4,194	8,167	13,464	28,901
	Mpika	3,981	5,425	10,565	17,417	37,388
	Mbala	4,053	5,524	10,757	17,734	38,069
	Kasama	4,497	6,129	11,935	19,677	42,238
<b>Lusaka</b>		<b>31,876</b>	<b>43,440</b>	<b>84,594</b>	<b>139,466</b>	<b>299,377</b>
	Luangwa	363	495	964	1,589	3,412
	Chongwe	2,772	3,778	7,357	12,129	26,035
	Kafue	3,580	4,879	9,502	15,665	33,626
	Lusaka	25,160	34,288	66,772	110,084	236,305
<b>Eastern</b>		<b>29,897</b>	<b>40,743</b>	<b>79,342</b>	<b>130,808</b>	<b>280,791</b>
	Mambwe	1,256	1,712	3,333	5,496	11,797
	Nyimba	1,528	2,082	4,054	6,684	14,349
	Chama	1,759	2,397	4,668	7,695	16,519
	Chadiza	1,832	2,497	4,863	8,017	17,208
	Katete	4,201	5,726	11,150	18,383	39,460
	Lundazi	5,460	7,440	14,489	23,887	51,275
	Petauke	5,916	8,062	15,701	25,885	55,564
	Chipata	7,945	10,827	21,085	34,762	74,619
<b>Copperbelt</b>		<b>28,570</b>	<b>38,935</b>	<b>75,821</b>	<b>125,002</b>	<b>268,327</b>
	Lufwanyama	1,099	1,498	2,918	4,810	10,326
	Kalulushi	1,336	1,821	3,546	5,846	12,549
	Masaiti	1,348	1,837	3,578	5,898	12,661
	Mpongwe	1,404	1,913	3,725	6,142	13,184
	Chililabombwe	1,502	2,046	3,985	6,570	14,103
	Luanshya	2,221	3,027	5,894	9,718	20,860
	Mufulira	2,363	3,220	6,270	10,337	22,189
	Chingola	3,083	4,201	8,181	13,487	28,951
	Ndola	6,580	8,967	17,462	28,789	61,799
	Kitwe	7,635	10,404	20,261	33,404	71,704

Note: Minor discrepancies in totals were caused by rounding of targets at the district level.



Province	District	2012	2013	2014	2015	Total*
<b>Southern</b>		<b>27,277</b>	<b>37,172</b>	<b>72,388</b>	<b>119,343</b>	<b>256,180</b>
	Gwembe	891	1,214	2,364	3,897	8,365
	Itezhi-tezhi	1,103	1,504	2,929	4,828	10,364
	Siavonga	1,515	2,064	4,020	6,627	14,226
	Kazungula	1,682	2,292	4,463	7,358	15,794
	Namwala	1,700	2,317	4,512	7,439	15,968
	Sinazongwe	1,706	2,325	4,528	7,465	16,023
	Livingstone	2,435	3,319	6,463	10,655	22,872
	Monze	3,335	4,545	8,850	14,590	31,319
	Choma	4,110	5,601	10,907	17,981	38,599
	Kalomo	4,278	5,829	11,352	18,716	40,175
	Mazabuka	4,523	6,163	12,002	19,787	42,476
<b>Central</b>		<b>20,589</b>	<b>28,059</b>	<b>54,640</b>	<b>90,083</b>	<b>193,371</b>
	Mkushi	2,498	3,405	6,631	10,931	23,465
	Serenje	2,587	3,526	6,866	11,320	24,299
	Kabwe	3,270	4,457	8,679	14,308	30,714
	Mumbwa	3,552	4,841	9,428	15,543	33,364
	Kapiri Mposhi	3,904	5,320	10,360	17,079	36,662
	Chibombo	4,777	6,510	12,678	20,901	44,867
<b>Luapula</b>		<b>15,960</b>	<b>21,749</b>	<b>42,354</b>	<b>69,827</b>	<b>149,890</b>
	Milengi	726	989	1,927	3,176	6,818
	Chiengi	1,815	2,474	4,818	7,943	17,050
	Mwense	1,972	2,687	5,233	8,628	18,521
	Kawambwa	2,186	2,979	5,802	9,565	20,531
	Nchelenge	2,485	3,386	6,594	10,871	23,335
	Samfya	3,153	4,297	8,367	13,794	29,611
	Mansa	3,623	4,937	9,614	15,851	34,025
<b>Western</b>		<b>7,952</b>	<b>10,837</b>	<b>21,104</b>	<b>34,793</b>	<b>74,685</b>
	Lukulu	766	1,044	2,032	3,350	7,192
	Shangambo	767	1,046	2,037	3,358	7,207
	Sesheke	882	1,202	2,341	3,860	8,286
	Senanga	1,146	1,562	3,041	5,014	10,762
	Kalabo	1,164	1,586	3,089	5,093	10,932
	Mongo	1,593	2,170	4,227	6,968	14,958
	Kaoma	1,634	2,227	4,337	7,150	15,348
<b>North Western</b>		<b>3,261</b>	<b>4,444</b>	<b>8,655</b>	<b>14,268</b>	<b>30,629</b>
	Chavuma	154	209	408	673	1,444
	Mufumbwe	255	347	677	1,116	2,395
	Kasempa	303	413	804	1,326	2,846
	Zambezi	408	557	1,084	1,787	3,836
	Kabompo	420	572	1,114	1,837	3,942
	Mwinilunga	609	829	1,615	2,663	5,716
	Solwezi	1,113	1,516	2,953	4,869	10,451
<b>Total</b>		<b>198,511</b>	<b>270,528</b>	<b>526,818</b>	<b>868,538</b>	<b>1,864,396</b>



## Appendix 2: VMMC EQUIPMENT SET AND CONSUMABLE KIT CONTENTS

### Surgical instruments set content for dorsal slit

Product	Description	#
Autoclave storage box	Estimated dimensions approximately: 5"W x 10"L x 2"H	1
Dissection dissecting scissors	13-15 cm	1
Combination needle-holder/suture scissors	13-15 cm, working surface approximately 20mm	1
Needle-holder/ driver	Needle-holder (12-14 cm, working surface 20mm)	1
Suture scissors	Suture scissor (12-15 cm)	1
Toothed tissue forceps	Total length 13 cm, working surface 15 mm serrated	1
Mosquito clamp straight	Total length 12-14 cm	4
Mosquito clamp curve	Total length 12-14 cm, working surface 20-30 mm	1
Haemostatic clamps	Total length 13-15 cm, working surface 40 mm	2

Source: SCMS MC core list, October 2011 ([http://scms.pfscm.org/scms/docs/papers/MC\\_Handout\\_13\\_OCT\\_2011.pdf](http://scms.pfscm.org/scms/docs/papers/MC_Handout_13_OCT_2011.pdf))

### Consumables kit contents

Product	Description	#
Multipurpose container tray	Stable plastic recycle tray to conduct procedure, minimum 700 micron virgin plastic, with 3 compartments (Compartment 1 = 13X26, compartment 2 = 5X8, compartment 3 = 5X5, compartment 4 = 5X13 and the total size of the Tray is 26X18).	1
O-drape	Disposable 100 cm X 75 cm (one side absorbable and one side impermeable. The two different sides are fused together and not lint applied.)	1
Scalpel blade w/handle	Disposable, retractable and lockable; blade type 23; total length 11cm	1
Gauze, plain	Gauze swabs 100X100mm (12ply)	20
Gauze, petroleum jelly impregnated	Paranet gauze 10cmX10cm (1 ply)	1
Syringe	Syringe 10 ml	1
Injection needles	One each of 21g and 23g, 1.5 inch	2
Suture, 3/0	Polyglycolic acid suture, 75 cm, on reverse cutting needle 26 mm	2
Braided/absorbable surgical gloves	Sterile, one each of size 8 and 7 1/2	2
Apron, disposable	Plastic, trash bag quality	2
Alcohol swabs	1 1/4" x 2 1/2", isopropyl alcohol 70%	2
Surgical paper tape	Micropore 12 mm, 1-3 meter in Length	1
Sterile prep gloves	Examination glove large	1

Source: SCMS MC core list, October 2011 ([http://scms.pfscm.org/scms/docs/papers/MC\\_Handout\\_13\\_OCT\\_2011.pdf](http://scms.pfscm.org/scms/docs/papers/MC_Handout_13_OCT_2011.pdf))



### Other items needed for VMMC

Product	Description	#
Lidocaine HCl 1%, injection	Single 20 ml vial	1
Gloves, size 8	Sterile surgical, latex, powdered, size 8, 50 pairs	1
Gloves, size 7	Sterile surgical, latex, powdered, size 7.5, 50 pairs	1
Suture	75cm, absorbable, coated, braided undyed, 3/0, 26mm, 3/8 circle reverse cutting needle, 12 pcs	1
Compression bandage sterile gauze	Box of 50, 4.5 meters long x 5 cm	1
Gauze pads	Sterile, 4 x 4 in 12-ply, 100 pcs	1



## Appendix 3: EIMC EQUIPMENT SET AND CONSUMABLE KIT CONTENTS

### EIMC Surgical Instrument Set Contents

Product	Description	#
Autoclave storage box	Estimated dimensions approximately: 5"W x 10"L x 2"H	1
Mogen Clamp	Multiple use EIMC device	1
Straight artery forceps	Small size	2
Curved artery forceps	Small size	2
Probe		1
Scissors		1
Surgical blade holder		1
Rectangular Tray		1
Gallipot		2

Source: CIDRZ

### EIMC Consumables Kit Contents

Product	Description	#
O-Drape	Disposable 40cm x40cm	1
Scalpel Blade		1
Gauze, Plain	Gauze Swabs 100X100mm (12ply)	5
Gauze, Petroleum Jelly Impregnated	Paraffin Gauze 10cmX10cm (1 ply)	1
Syringe	Syringe 1 ml (Insulin syringe) or Syringe 2 ml	1
Injection Needles	One each of 21g, 23g, 27g	2
Surgical Gloves	Sterile, one each of size 8 and 7 1/2	2
Glucose tablet	Single wrapped tablet, 1g	1

Source: CIDRZ

### Other Items Needed for EIMC

Product	Description	#
Lignocaine 1% (no epinephrine), injection	Single 20 ml vial	1
Povidone iodine	50ml bottle	1
Suture	Vicril rapid 4.0	1
Disposable baby nappy	Size dependent on size of baby, size 1 or 2	1
Lifebuoy soap	25g bar for patient to carry	1
Vaseline	2g Single-use plastic/foil packet for patient to carry	1

