Zimbabwe Voluntary Male Medical Circumcision (VMMC) System Evaluation

Findings and Recommendations of the Redesigned Logistics System

August 2015

SCMS

Providing quality medicines for people living with and affected by HIV and AIDS

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Zimbabwe Voluntary Male Medical Circumcision (VMMC) Evaluation

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July 2015

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About SCMS

The Supply Chain Management System (SCMS) was established to enable the unprecedented scale-up of HIV/AIDS prevention, care and treatment programs in the developing world. SCMS procures and distributes essential medicines and health supplies, works to strengthen existing supply chains in the field, and facilitates collaboration and the exchange of information among key donors and other service providers. SCMS is an international team of 13 organizations funded by the US President's Emergency Plan for AIDS Relief (PEPFAR). The project is managed by the US Agency for International Development.

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Acronyms

ARV	Antiretrovirals
CDC	Centers for Disease Control and Prevention
C/R Form	Consumption/Requisition Form
DMO	District Medical Office
DPS	Directorate of Pharmacy Services
DTTU	Delivery Team Topping Up
ICS	Inventory control system
IP	Implementing Partner
ITECH	International Training & Education Center for Health
JSI	John Snow, Inc.
LMIS	Logistics management information system
LU	Logistics unit
max/min	Maximum/minimum inventory control system
MC	Male circumcision
MOHCC	Ministry of Health and Child Care
NAC	National AIDS Council
OJT	On- the-job training
PMD	Provincial Medical Directorate
PSI	Population Services International
SCMS	Supply Chain Management System
SOP	Standard operating procedures
SOW	Statement of work
STI	Sexually transmitted infections
STTA	Short-term technical assistance
TOT	training of trainers
VMMC	voluntary medical male circumcision
UNDP	United Nations Development Program
UNFPA	United Nations Population Fund

USAID	United States Agency for International Development
WHO	World Health Organization
ZACH	Zimbabwe association of church hospitals
ZADS	Zimbabwe ARVs Distribution System
ZAZIC	Consortium between ZACH and ZiCHIRe
ZEDAP	Zimbabwe essential drugs Program
ZiCHIRe	Zimbabwe Community Health Intervention Research Project

Executive Summary

In 2009, the Zimbabwe MOHCC (Ministry of Health and Child Care) decided to start actively promoting Voluntary Medical Male circumcision (VMMC) as a measure to prevent HIV infections. As of today, the Zimbabwe's VMMC program has evolved significantly since the VMMC ordering and distribution system was first implemented from five VMMC static sites to approximately 90 sites in 2014. A VMMC system assessment in 2012 recommended a redesign of the VMMC logistics system. In 2013, the logistics system was redesigned, and in January 2014, it was rolled out to all VMMC sites. In July 2014, the system was made fully operational, with all VMMC sites using the redesigned logistics system. As of April 2015, four distribution runs using the redesigned system had been completed.

The purpose of the VMMC logistics system evaluation was to assist the MOHCC AIDS and TB Program and Directorate of Pharmacy Services (DPS) to evaluate the redesigned system used to manage VMMC commodities to better understand how it was operating. A two-pronged approach was used to conduct the evaluation including both in-depth interviews and quantitative evaluation of sample VMMC sites. The first part included meetings with the central level stakeholders and partners including: AIDS & TB Program, Directorate of Pharmacy Services (DPS), National AIDS Council (NAC), NatPharm -Harare, Population Services International (PSI), ZAZIC, Centers for Disease Control and Prevention (CDC), United States Agency for International Development (USAID), United Nations Development Program (UNDP) and United Nations Population Fund (UNFPA). For the second part of the evaluation, a random sample of VMMC sites which included both reporting and non-reporting sites along with a mix of sites supported by PSI and ZAZIC were selected. A total of 36 VMMC sites, with 18 supported from PSI and another 18 supported by ZAZIC were evaluated. A total of six tracer VMMC commodities were assessed for availability and stock status at VMMC sites. These include: single use forceps guided kits, lignocaine, paracetamol 500mg, cohesive bandage, PrePex sizing plate, and adrenaline. Availability of beds, diathermy machines, and pulse oxymeter equipment used for VMMC procedures was also verified.

During the visits it was found that sites perform an average of 223 VMMC procedures during a two-month reporting period. Use of forceps guided procedures is almost universal, with the other two methods, dorsal slit and PrePex being used by less than 70 percent of the sites. About half of the sites reported conducting outreaches weekly, which translates to a large number of procedures being performed outside of the static sites. However, only 18 percent of sites reported using the outreach reconciliation form, which should be used by all outreach teams for managing stock when conducting outreach.

For reporting and ordering commodities, it was found that 42 percent of the sites submitted the C/R form on time during the month of March. Staff at two-thirds of the sites mentioned that it takes more than five hours to complete the C/R form. This includes the time required to gather all information as well as the time spent actually completing the form.

Storage of commodities at the sites is one of the largest problems in the system with only eight percent of the sites having sufficient storage space for products and planned program expansion. With the exception of adrenaline which is used for emergency procedures, the majority of the VMMC sites had VMMC commodities available on the day of the visit. However, VMMC sites have a major overstock of MC kits, with an average of 19.8 months of stock available per site.

Based on these findings, the team proposed various recommendations to improve the effectiveness of the national VMMC system. At the central level it is necessary to do a comprehensive analysis of the storage space at NatPharm Bulawayo as soon as possible to supplement the limited current storage space in Natpharm Harare. To further strengthen coordination, both DPS and Provincial Medical Directorate (PMDs) should play a more active role in VMMC commodity management. Closer collaboration with implementing partners should be fostered by documenting and operationalizing a formal procedure for sharing information. Additional information sharing procedures regarding stock availability at NatPharm should be proposed to inform all relevant stakeholders. It is also important to develop an alternative feedback mechanism to VMMC sites until automated feedback reporting system is operational. Furthermore, it is important to disseminate disposal guidelines for VMMC commodities, obsolete products and biomedical waste as well as consult with the identified smelting company that handles the metal waste to determine their coverage area for pickup.

At the site level it is important to reassess the current MC kits stock situation at sites and consider redistribution through the system to avoid overstocks, wastage, and expiries. In addition to this, the incentives for VMMC procedures should be aligned with submissions of monthly reports and C/R forms. There are two main changes proposed to the current forms: the addition of PrePex and dorsal slit commodities to the list of frequently used items in the C/R form and the elimination of the outreach reconciliation form. The latter one is not believed to impact the reporting rates between the sites and the program since that data has been captured in C/R forms accurately in the past. It is important for all stakeholders involved to make sure that all staff is aware that STI commodities and antibiotics are managed along with other essential medicines instead of the VMMC logistics system. This would help prevent any stockouts of these products. Additional staff should be trained in VMMC logistics to support sites in VMMC commodity management. Per VMMC program guidelines, VMMC sites should continue using single use instruments for the short and medium term. , given the recommendation from the VMMC program.

Background

Background on the VMMC Program in Zimbabwe

According to the World Health Organization (WHO), VMMC reduces the risk of female-to-male sexual transmission of HIV by approximately 60 percent. In 2009, the Zimbabwe MOHCC (Ministry of Health and Child Care) decided to start actively promoting Voluntary Medical Male circumcision (VMMC) as a measure to prevent HIV infections. As of today, the Zimbabwe's VMMC program has evolved significantly since the VMMC ordering and distribution system was first implemented in 2009, from five VMMC static sites in 2009 to approximately 90 sites in 2014. The majority of procedures are still being performed by outreach teams which are affiliated with static sites. A VMMC system assessment in 2012 recommended a redesign of the VMMC logistics system. In 2013, the logistics system was redesigned, and in January 2014, it was rolled out to all VMMC sites.

Some of the key highlights from the redesigned system include the following :

- All sites report in the same months (even months); the VMMC program has its own distribution system.
- Storage and distribution of VMMC commodities is done by NatPharm Harare and Bulawayo (note: as of May 2015, NatPharm Bulawayo was still not being used to store and distribute VMMC commodities).
- SOPs include job descriptions and clarity of staff roles and responsibilities at all levels.
- The C/R form was amended to include more commodities, if required, including PrePex devices and PrePex sizing plate. This was done by the addition of blank rows.
- Continued use of existing storekeeping and transaction records including the revised and simplified Outreach Reconciliation Form, previously known as the Outreach Voucher.
- Two inventory control systems were developed. These include the following:
    - Frequently used commodities (e.g. MC kits, anesthesia, paracetamol, gloves, sodium hypochlorite) use the forced ordering pull system with bimonthly ordering and reporting system , and a maximum-minimum of five and three months, respectively.
    - Equipment and non-frequently used items (e.g. kidney dish, stethoscope, emergency items) order based on a pull system to maintain inventory to the original allocated quantity.

In July 2014, the system was made fully operational, with all VMMC sites using the redesigned logistics system. As of April 2015, four distribution runs using the redesigned system had been completed. Table 1 below shows the reporting rates for the last four distribution runs. Based on the Consumption/Requisition (C/R) forms received from the sites at the Logistics Unit (LU), only half of the VMMC sites report on time. The reporting rates average around 46 percent, lower than expected.

Table 1. C/R form reporting rates from July 2014 – February 2015

July-August 2014	September-October 2014	November-December 2014	January-February 2015
47%	41%	50%	47%

As of December 2014, approximately 411,946 VMMC procedures have been performed using one of the following three methods : surgical forceps guided, surgical dorsal slit (for boys 14 years of age or younger) or PrePex (for adults 18 or over).

Flow of Commodities and Information

Movement of VMMC commodities: The VMMC is a pull, forced ordering maximum-minimum inventory control system, with two levels: central (Harare and Bulawayo) and static facilities; and the total length of the in-country pipeline is 13 months. The maximum stock level for frequently used commodities at NatPharm and the facility is eight and five months, respectively, while the minimum stock level is five and three months, respectively. Both the review period, and the lead time for the central level is three months, while the safety stock is two months. For the facility level, the review period is two months, while both the lead time and safety stock is 1.5 months. Emergency order point for the facility level is one month.

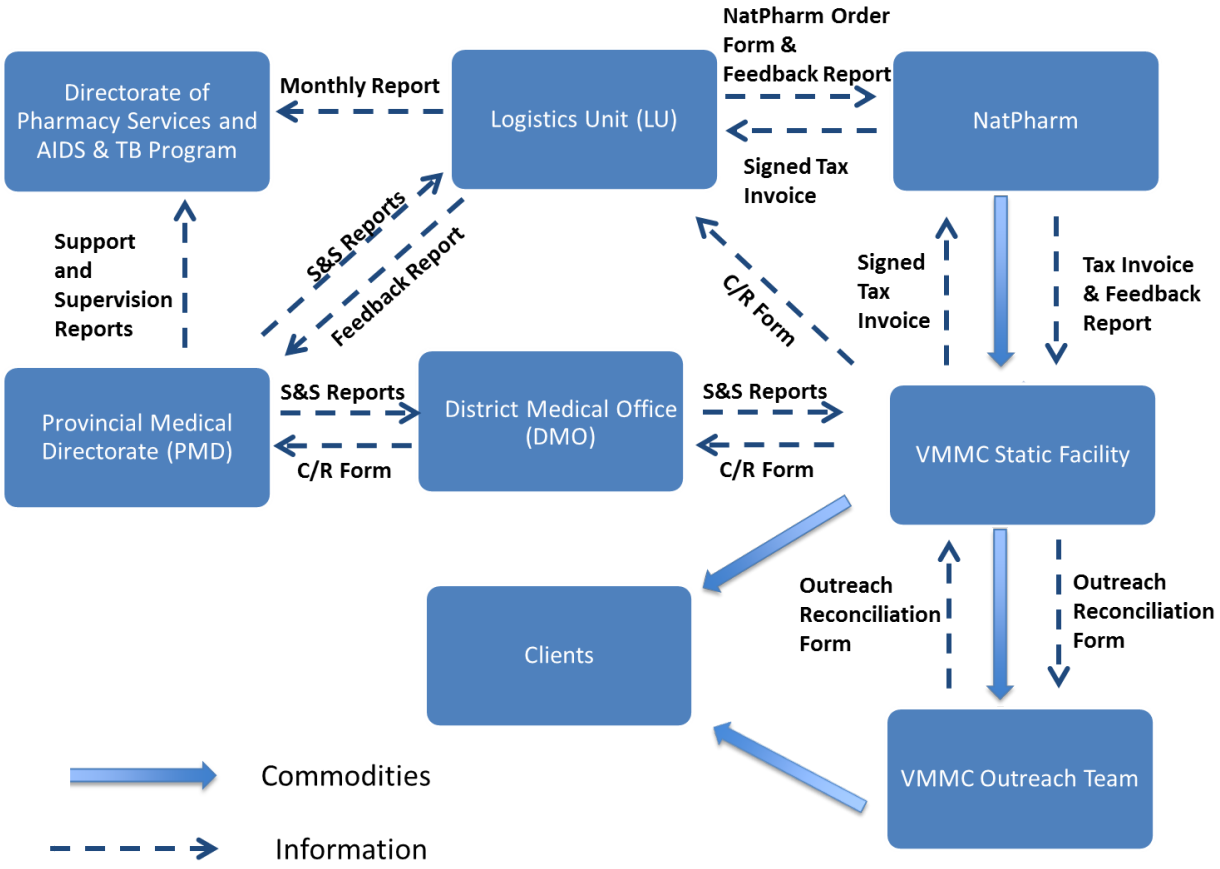
Commodities flow from NatPharm to the static sites, and when needed, during the time of outreach, are issued from the static site to the outreach teams. All unused commodities at the outreach site are returned to the static site. MC procedures are conducted at the MC service delivery points, which include both the static and the outreach sites.

Movement of Information: In terms of gathering and reporting data, logistics data is collected using various forms which are part of the logistics management information system (LMIS). Stock cards are used at the facility level to keep track of quantities issued, received, stock on hand, and losses and adjustments. Outreach teams complete an Outreach Reconciliation Form to request and reconcile MC commodities. This form is sent to the MC static sites, where data from the form is incorporated into the C/R Form, and sent to the MOHCC DPS Logistics Unit for processing. NatPharm Order Form and Feedback Reports are generated within the LU and sent back to the MC static site along with the resupplies from NatPharm. Upon receipt of commodities, MC sites sign and return a copy of the tax invoice to NatPharm as proof of delivery for documentation. Another copy of the signed tax invoice is sent to the LU. LU submits a copy of the Feedback Reports to the Provincial Medical Directorate (PMD). A copy of the Support and Supervision Reports is sent from the PMD to the district who then forwards it to the MC site, while the MC sites submits a copy of

the C/R form to the district and the provincial offices for information sharing purposes. The Directorate of Pharmacy Services and the AIDS and TB program also receive a monthly report from the LU and Support and Supervision Reports from the PMD.

The figure 1 below shows the flow of information and VMMC commodities.

Figure 1. Flow of VMMC commodities and information



Purpose and Objectives

The purpose of the VMMC logistics system evaluation is to assist the MOHCC AIDS and TB Program and Directorate of Pharmacy Services (DPS) to evaluate the redesigned system used to manage VMMC commodities to better understand how the redesigned system is operating, highlight system strengths, challenges, recommendations for the way forward, and track changes over time in order to adjust strategies as appropriate.

Objectives for the Evaluation

The main objectives for this evaluation are the following:

1. Conduct **in-depth interviews** with personnel from DPS-LU, NatPharm-Harare, MOHCC AIDS & TB Program, Directorate of Pharmacy Services (DPS), National AIDS Council (NAC), Population Services International (PSI), ZAZIC, partners, and donors to:
    - Assess the various components of the VMMC logistics system including:
        - Organizational support and staffing
        - Logistics Management Information System
        - Inventory control procedures
        - Warehousing and storage
        - Transportation and distribution
    - Identify strengths and challenges, and provide recommendations for improving and strengthening the VMMC logistics system

2. Conduct a **quantitative** evaluation at the VMMC sites:
    - Assess overall functioning of the redesigned VMMC logistics system including:
        - Ordering and reporting, maintenance of logistics records and reports, distribution, storage conditions, training and supervision
    - Assess availability and stock status of six VMMC commodities and select equipment

Evaluation Methodology

A two-pronged approach was used to conduct the evaluation including both in-depth interviews and quantitative evaluation of sample VMMC sites.

Part one of the evaluation included conducting a document review of the past assessment reports, Standard Operating Procedures (SOPs) for the redesigned logistics system and the 2012 VMMC logistics system assessment among other documents. In addition, the assessment team also conducted in-depth interviews with the central level stakeholders and partners including: AIDS & TB Program, DPS, NAC, NatPharm -Harare, PSI, ZAZIC, CDC, USAID, UNDP and UNFPA.

The second part of the evaluation was comprised of a quantitative survey conducted at sample VMMC sites. A one-day training for data collectors was administered to review and finalize the evaluation tool. The tool was also shared prior to the consultants' arrival in country with in-country staff and DPS to solicit feedback. Data collectors for the survey included staff from DPS and SCMS and they both provided extensive input in the finalization of the evaluation tool.

An Excel-based data entry tool was developed to facilitate data entry and analysis. SCMS staff on each team were provided with the Excel version of the tool to complete data entry for all the sites they visited.

Sampling Frame

All 10 provinces were included in the sample; a representative sample of reporting and non-reporting sites, supported by both PSI and ZAZIC was included in the sampling frame. A total of 36 VMMC sites, with 18 supported from PSI and another 18 supported by ZAZIC were evaluated. Figure 2 below shows the location of all 36 VMMC sites visited.

Data Collection

In-depth interviews with key partners and stakeholders were conducted from April 13 – April 17, 2015. The following week was used for data collection at the selected VMMC sites, from April 20-April 24, 2015. A total of four teams, comprised of 12 data collectors, from DPS and SCMS visited each province to collect data from the selected VMMC sites.

Figure 2. Sites selected for the evaluation

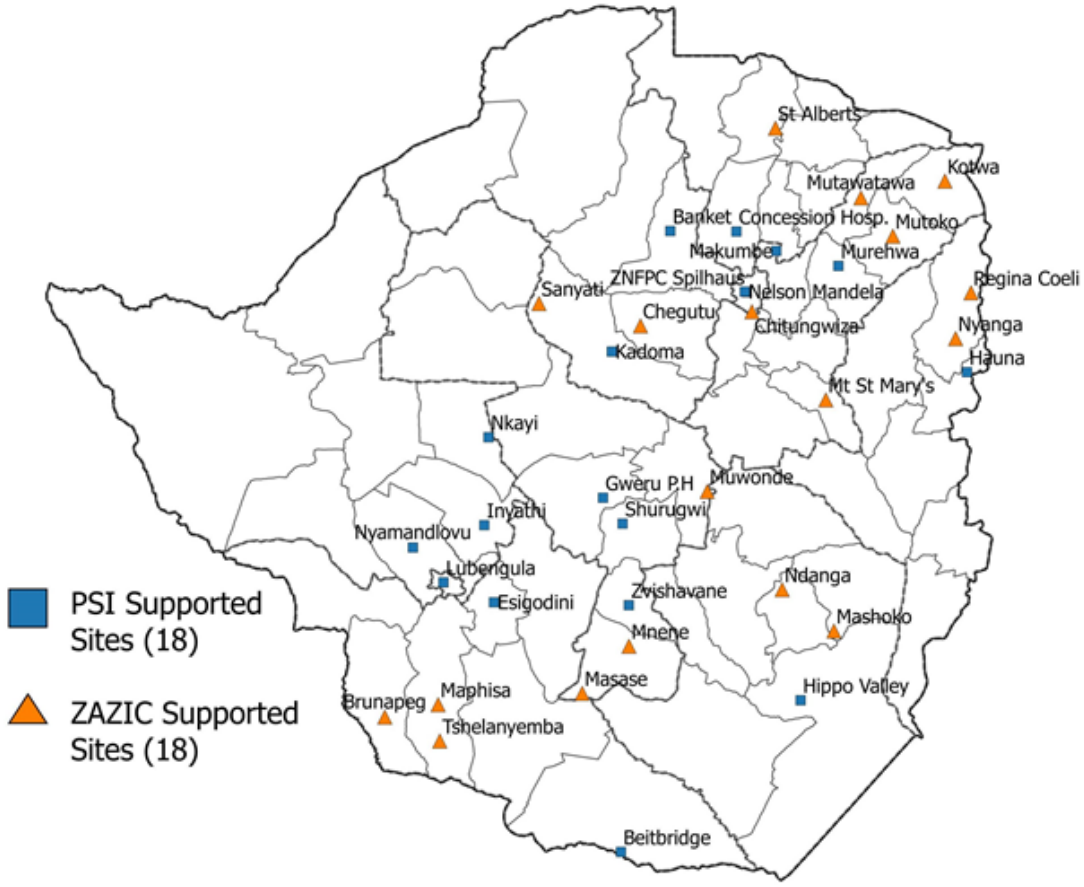


Table 2. Percentage of facilities visited by facility level

Facility Level	Percentage of Facilities Visited
Central Hospital	3%
Provincial Hospital	3%
District Hospital	57%
Mission Hospital	29%
Other	9%

Commodities Assessed

A total of six tracer VMMC commodities were assessed for availability and stock status at VMMC sites. Availability of select equipment used for VMMC procedures was also verified. Table 3 below lists all the commodities assessed during data collection at VMMC sites.

Table 3. VMMC commodities assessed

VMMC Commodities – Availability and Stock Status	Equipment – Availability
Single use forceps guided MC Kits	Diathermy machine
Lignocaine 2% injection	Pulse oximeter
Cohesive bandage	Operating table
Paracetamol 500mg tablets	
PrePex sizing plate	
Adrenaline Injection	

Key Findings

The findings below are a synthesis of the key findings from both the qualitative and the quantitative evaluation. The in-depth interviews represent the viewpoint of the partners and stakeholders acting within the system. The interviews provided an overview of the current situation with respect to the VMMC logistics system in Zimbabwe and are used to validate and complement the findings from the quantitative survey. The findings from the VMMC sites surveyed include information on commodity availability such as stock status, reporting and ordering, use of the LMIS, training, supervision, transportation and compliance with the storage conditions. Together, both sets of findings provide a comprehensive analysis of the VMMC logistics system in Zimbabwe.

VMMC Program Information

PSI and ZAZIC are the two implementing partners (IPs) that support the VMMC program in Zimbabwe. PSI supports a total of 62 sites in 21 districts, and ZAZIC supports 33 sites, most of them Mission hospitals in 21 districts.

Figure 3 below shows the breakdown of procedures reported per facility visited. During the last reporting period, from January 1 – February 28, an average of 223 procedures were performed per site, ranging from two sites, Masase Mission Hospital and Inyathi District Hospital where no VMMC procedures were reported to 784 procedures at Nelson Mandela in Harare.

Figure 3. Number of procedures performed from January 1 – February 28

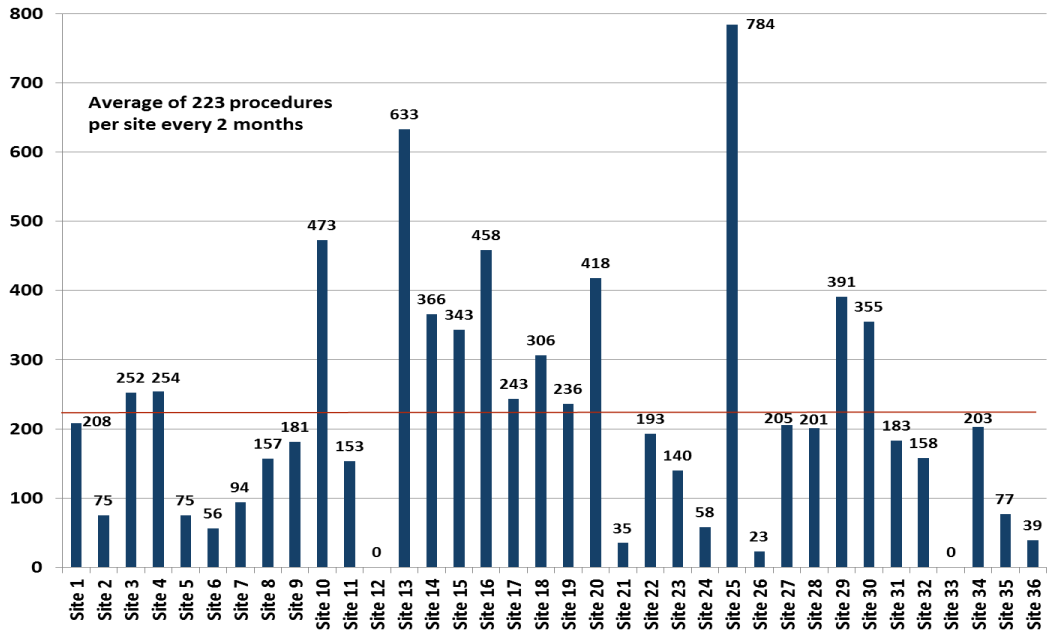
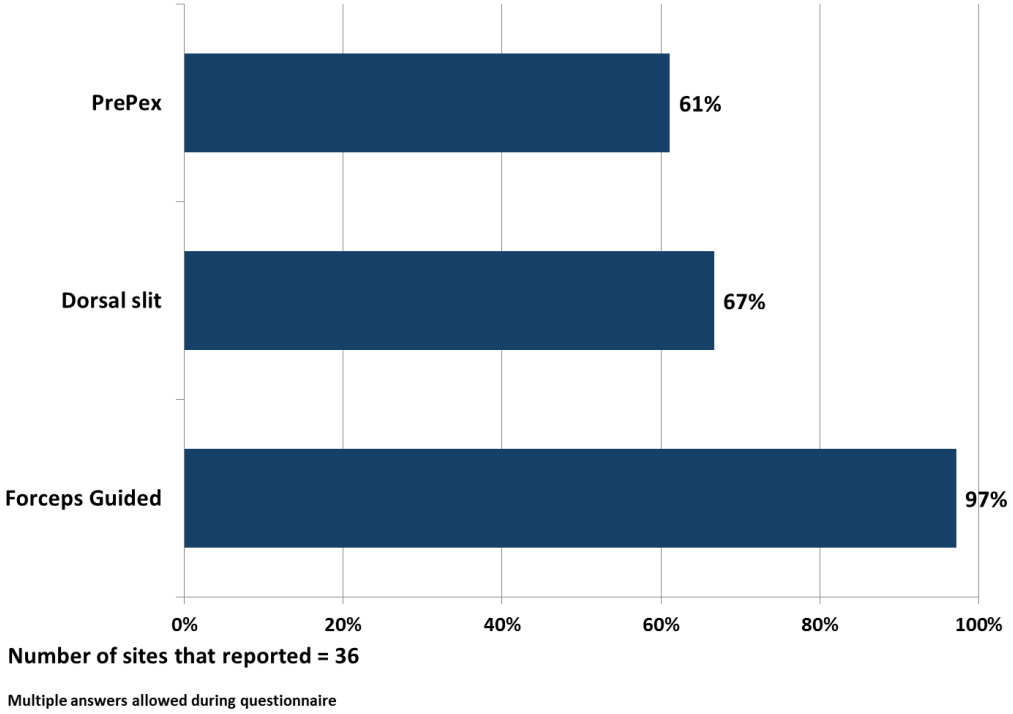


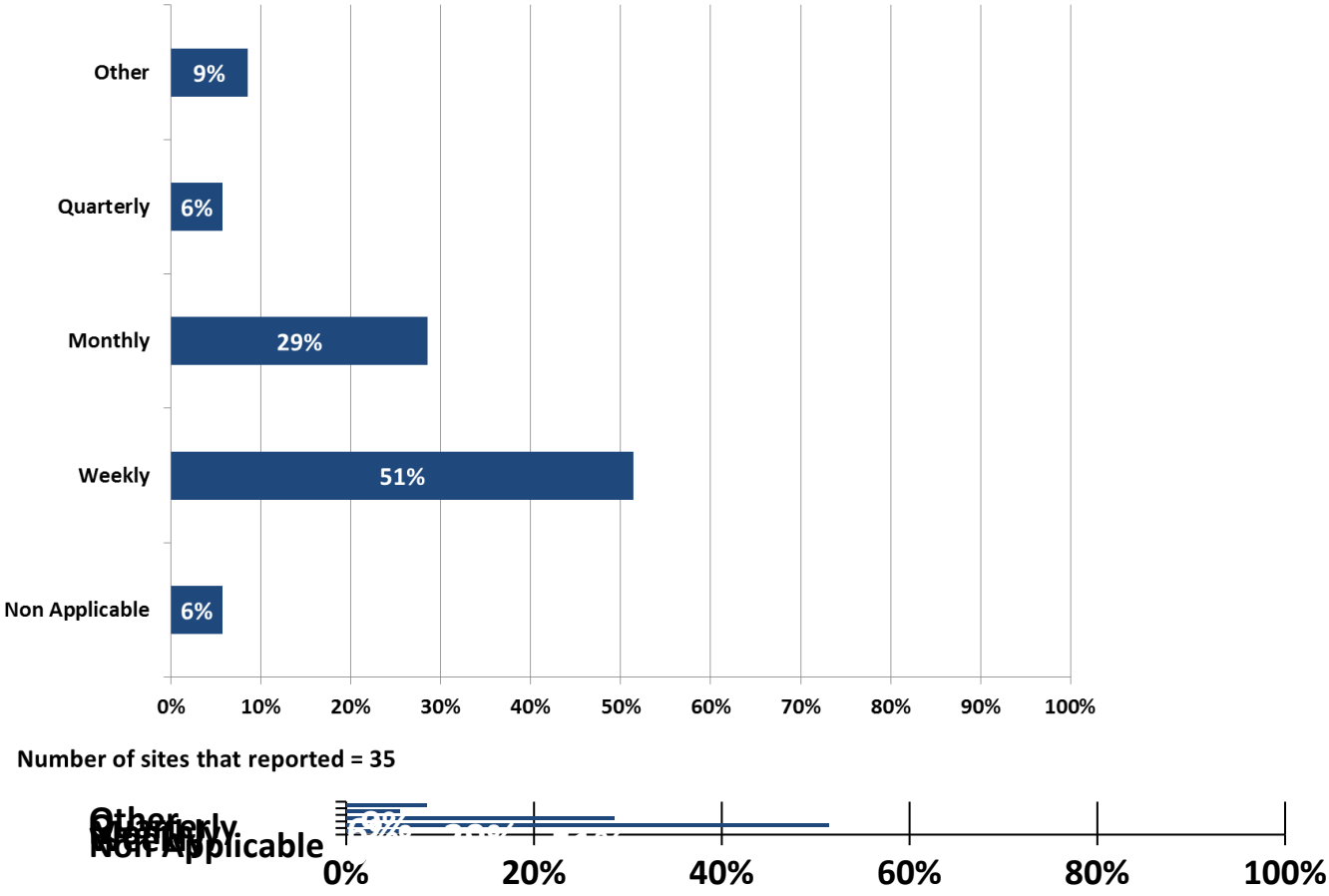
Figure 4 below shows the breakdown of different methods used at sites for VMMC. Most sites used more than one procedure for VMMC. All but one site (97 percent) used forceps guided as the primary method for VMMC, 67 percent also use dorsal slit followed by 61 percent that use PrePex. It is important to note that each site could use one or more methods for VMMC. As a result, the total percent below adds up to more than 100 percent.

Figure 4. Different methods used at sites for VMMC procedures



There is no standard frequency with which static sites conduct outreach. Figure 5 shows the breakdown of frequency; half of the sites (51 percent) conduct outreach on a weekly basis, while 29 percent conduct it monthly. During outreach, an overwhelming majority (88 percent) of the sites reported not leaving VMMC commodities at outreach points, per system design.

Figure 5. Frequency of outreach conducted by VMMC static sites



Product Quality

As part of the evaluation, sites were asked questions regarding product quality. Of the 36 sites evaluated, 83 percent reported experiencing quality problems with VMMC commodities and equipment. Poor grip on the forceps was the most commonly reported quality issue. Implementing partners during the interviews also mentioned that some of the sites they support had reported problems with product quality. However, it is important to note that product quality indicator is often subjective, based on user preferences and not always indicative of actual product quality issues. Breakdown of the most common product quality issues is shown in figure 6.

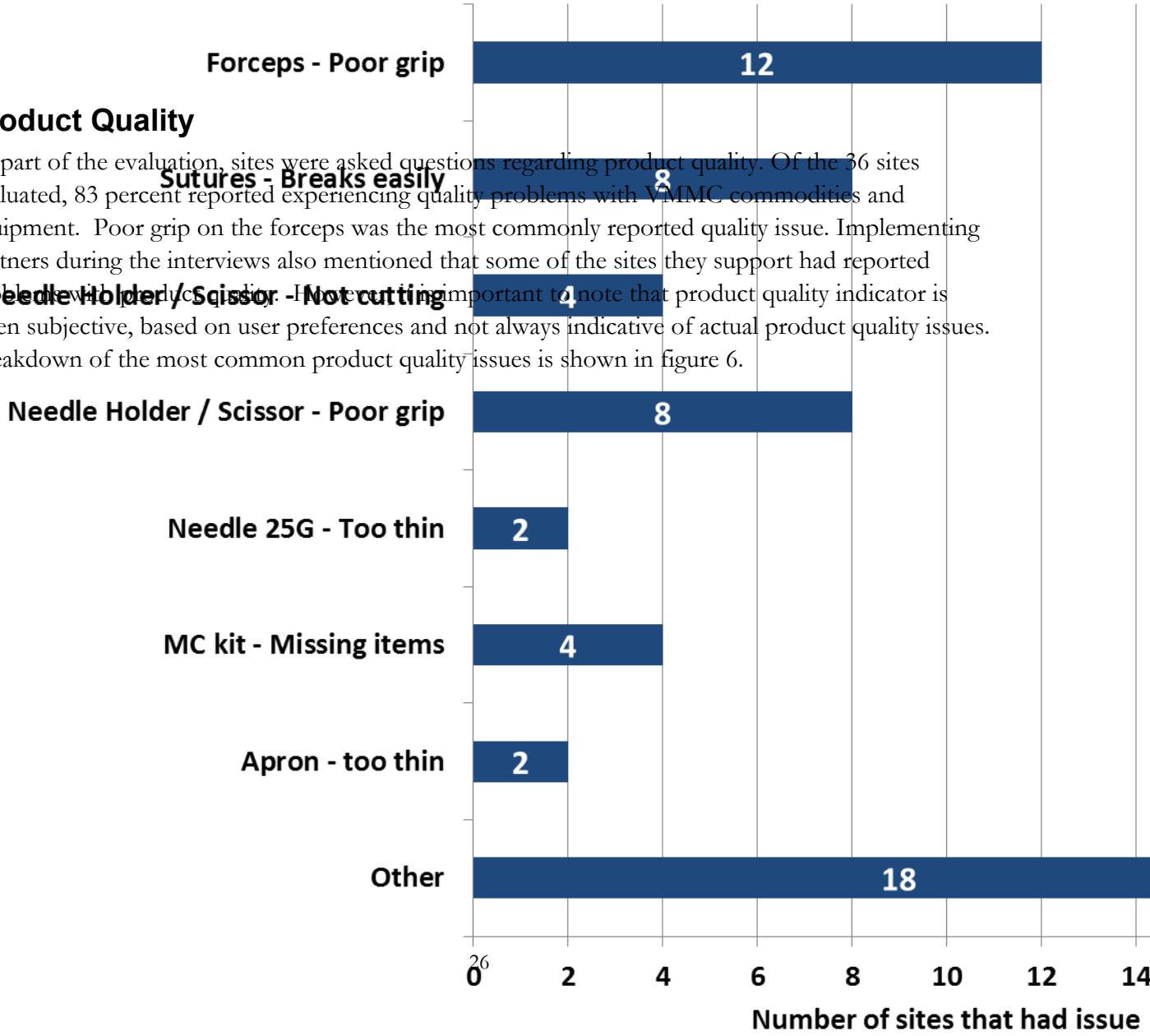
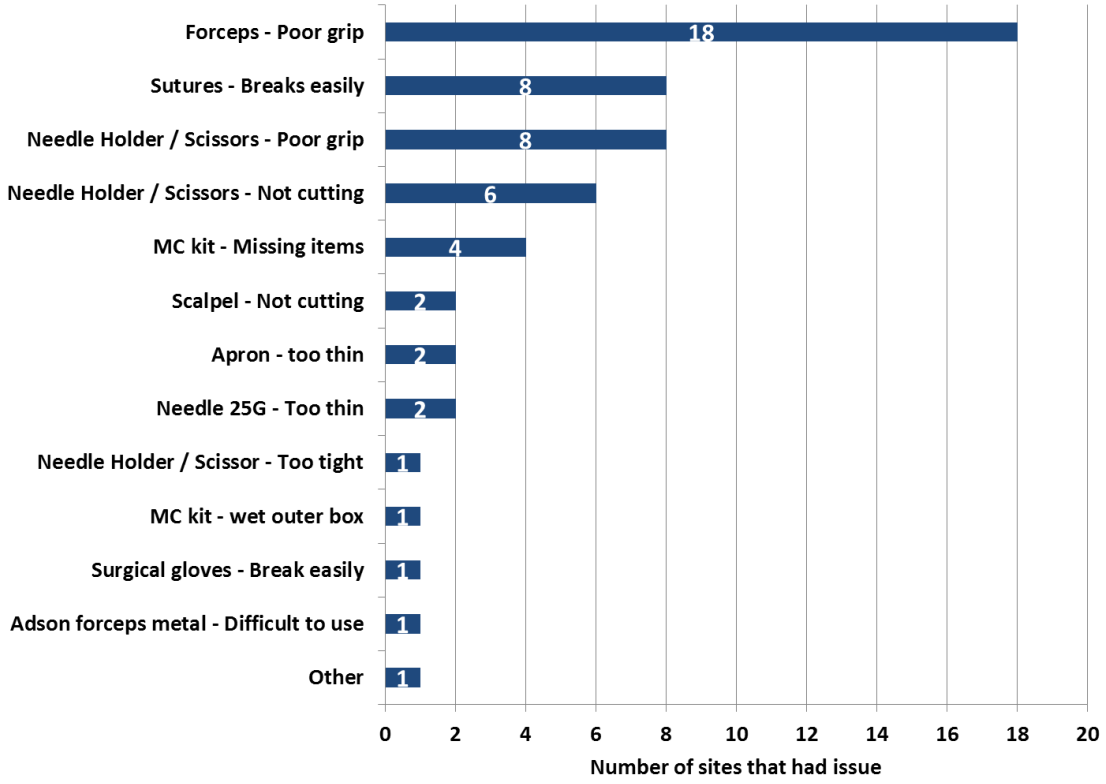


Figure 6. Common quality issues reported by sites



Organizational Support for Logistics System

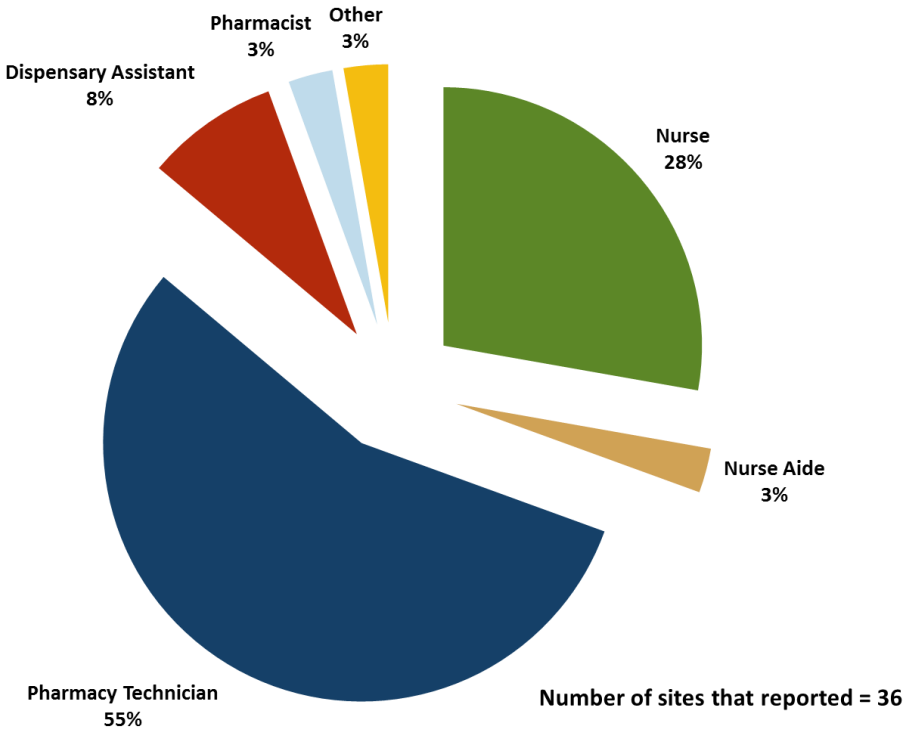
The DPS (LU) serves as a coordinating body for the management of all supply chain functions. Similar to other health programs, they are responsible for ensuring VMMC commodities are available at the VMMC sites. The DPS (LU) also plays a key role in building capacity at health facilities, and ensuring data visibility. Technical Working Group (TWG) meetings are held quarterly where DPS (LU) provides updates on issues related to the VMMC program including a stock status update on VMMC commodities.

IPs, which includes PSI and ZAZIC, liaise with DPS (LU) regarding the VMMC program, and support VMMC sites in providing quality services, and training on VMMC service delivery.

At the site level, management of all commodities is the responsibility of pharmacy staff. They are held accountable for movement of drugs from the pharmacy while clinical staff are generally responsible for service delivery. Figure 7 shows the person that has the primary responsibility for managing VMMC commodities at the site. At approximately half of the sites evaluated (55 percent), the pharmacy technician is the primary person responsible for VMMC management, followed by a nurse at 28 percent of the sites. At 83 percent of the sties, the primary person responsible for VMMC commodity management was trained in the VMMC logistics system. On average, there are three staff members per site involved in VMMC logistics. However, many sites reported not having

adequate staff due to high turnover rate and competing priorities for management of other program areas, such as ARVs.

Figure 7. Primary person responsible for managing VMMC commodities



Training and Supervision

It is expected that staff members who receive training on how to complete reporting and ordering forms are more likely to maintain proper records and reports. All facility staff that attended VMMC SOP training received copies of the Standard Operating Procedures (SOPs) and LMIS forms. Figure 8 shows that at 83 percent of the sites visited, at least two or more staff were trained in the VMMC logistics system. Staff were also asked if the training they received prepared them to manage VMMC commodities; 79 percent reported that the training they received adequately prepared them for VMMC commodity management, and approximately 70 percent reported the workload to manage VMMC commodities along with their other responsibilities as "about right". Interviews with IPs and other stakeholders further validate these findings; the sites they support have provided positive feedback on the VMMC commodity management training they received.

Figure 9 shows that 82 percent of the health facility staff learned about VMMC commodity management during VMMC logistics training, 26 percent through on-the-job training (OJT) and another 12 percent though a logistics workshop, not specific to VMMC. Table 4 shows the breakdown of staff responsible for VMMC commodity management. Results show an almost even

breakdown between the percentage of pharmacy and nursing staff trained in VMMC logistics management (46 and 49 percent, respectively).

Figure 8. Number of health facility staff trained in VMMC logistics

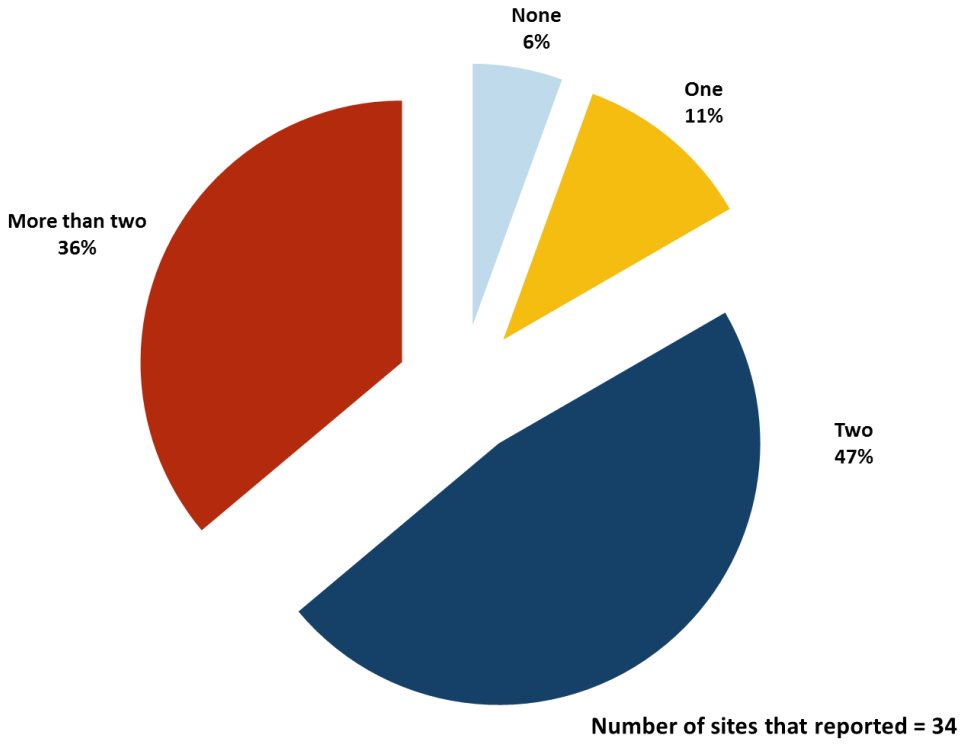


Figure 9. How health facility staff learned about VMMC commodity management

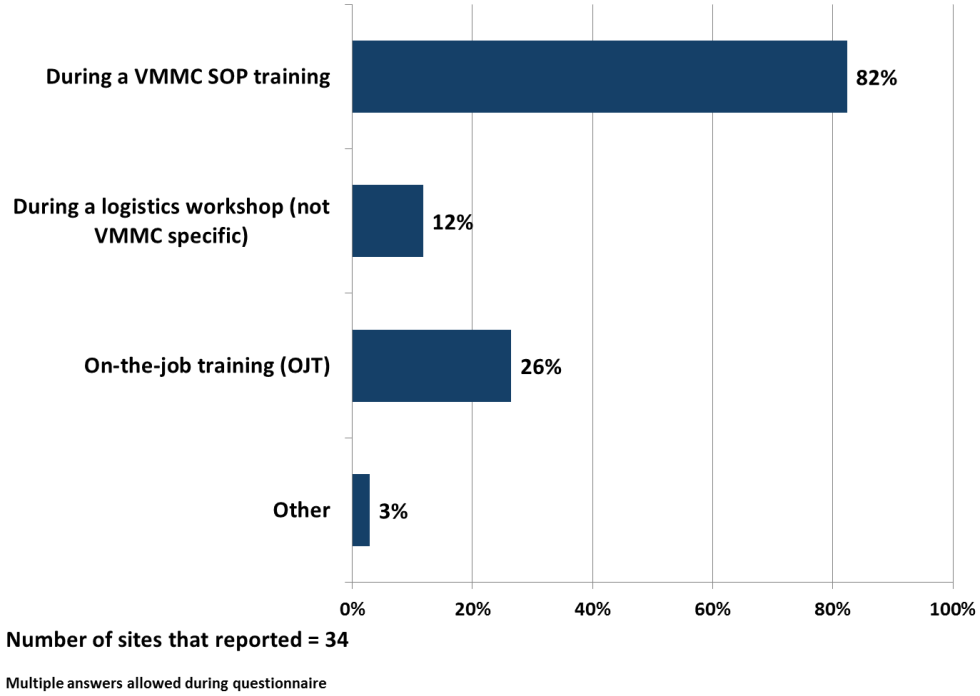


Table 4. Job titles of staff trained in VMMC logistics management

Title	Percent
Nurse	46%
Nurse Aide	3%
Pharmacy Technician	31%
Dispensary Assistant	12%
Pharmacist	3%
Other	6%

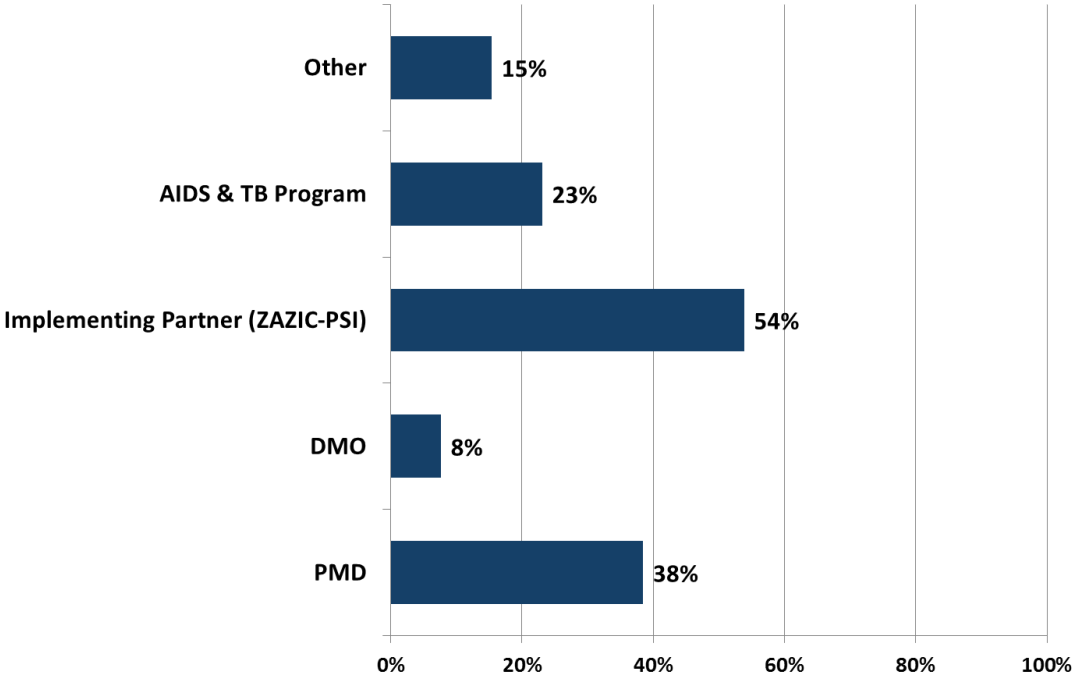
Number of sites reported = 34

Supervision is an important element of quality assurance for the performance of any logistics system, and is related to all aspects of logistics management. Supervision helps to improve individual and system performance and can alert managers to potential problems such as stock outs, poor storage conditions, and products near their expiry dates. The frequency of supervision visits is a useful indicator in assessing the potential quality of supervision and its effect on system performance. Supervision also presents an opportunity to reinforce new systems and forms, as in the case of the VMMC logistics system.

Supervision visits to VMMC sites should be coordinated by the Provincial Medical Directorate (PMD) with the support of the District Medical Office (DMO). An integrated supervision checklist is used to conduct supervision. Figure 10 shows that only 38 percent of the sites received

supervision from the PMD in the last six months. The majority (54 percent) of the supervision visits were conducted by the implementing partner (IP). Figure 11 shows that a large portion of sites visited (45 percent) reported not receiving a supportive supervision visit in the last six months. VMMC sites do not receive feedback reports from the DPS (LU) on the accuracy and quality of the data submitted. The proposed system for generating automated feedback reports is not currently operational.

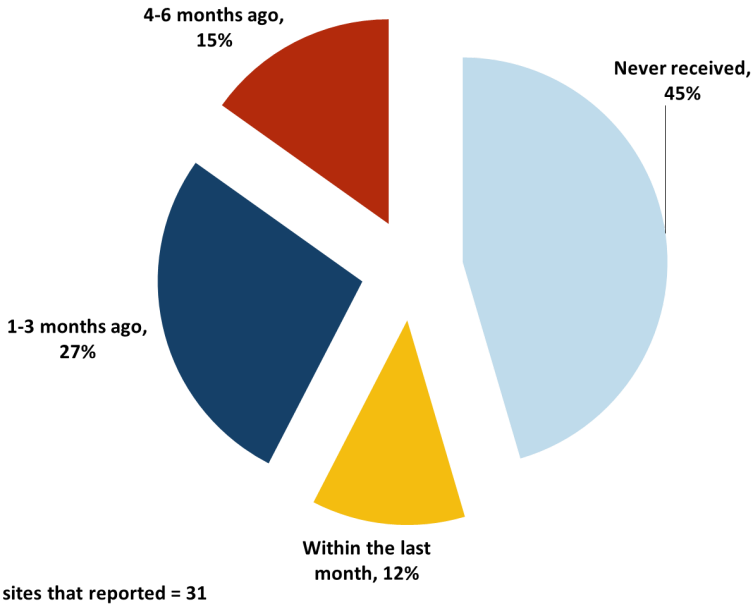
Figure 10. Organizations that provided supportive supervision visits in the last six months



Number of sites that reported = 26

Multiple answers allowed during questionnaire

Figure 11. Time of the most recent supervision visit



Number of sites that reported = 31

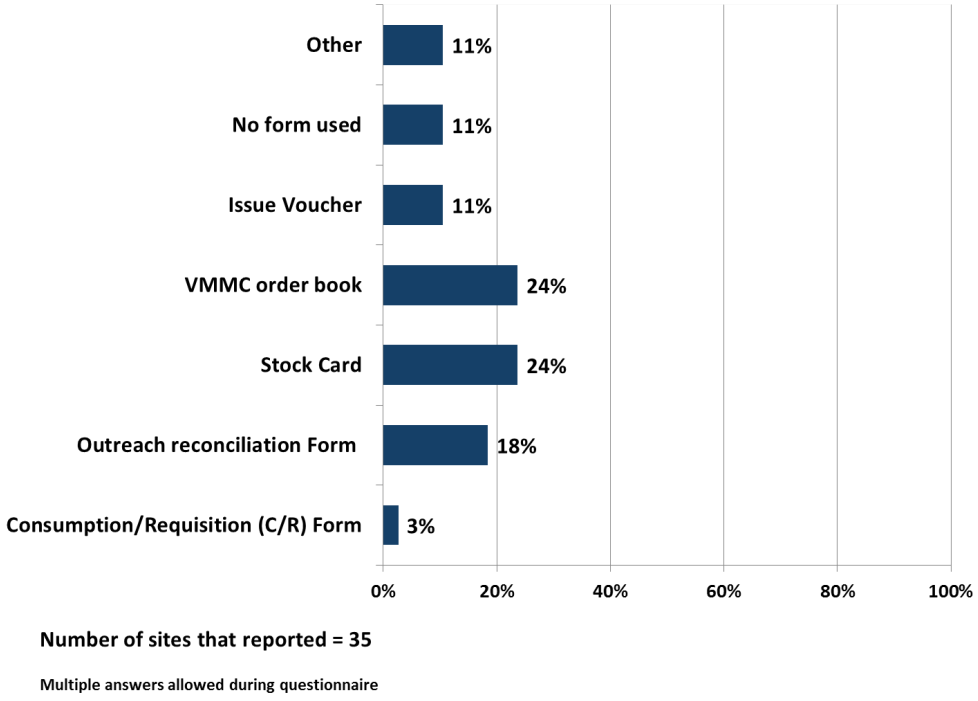
Logistics Management Information System (LMIS)

Recordkeeping and Reporting

Almost all (94 percent) of the 36 sites visited use the stock card for managing inventory of VMMC commodities. Similarly, all sites report use the C/R form for ordering and reporting of VMMC commodities to the DPS (LU). IPs interviewed also mentioned the sites they support find the C/R form easy to use.

Per the system design, sites should use the Outreach Reconciliation Form to reconcile commodities used during an outreach. However, based on the results, only 18 percent of the sites use the Outreach Reconciliation Form. Another 24 percent use a VMMC order book, while 11 percent don't use any forms. Staff interviewed at sites reported outreach staff asked for the commodities they needed instead of completing the Outreach Reconciliation Form. A complete breakdown of the different forms used can be seen in figure 12 below.

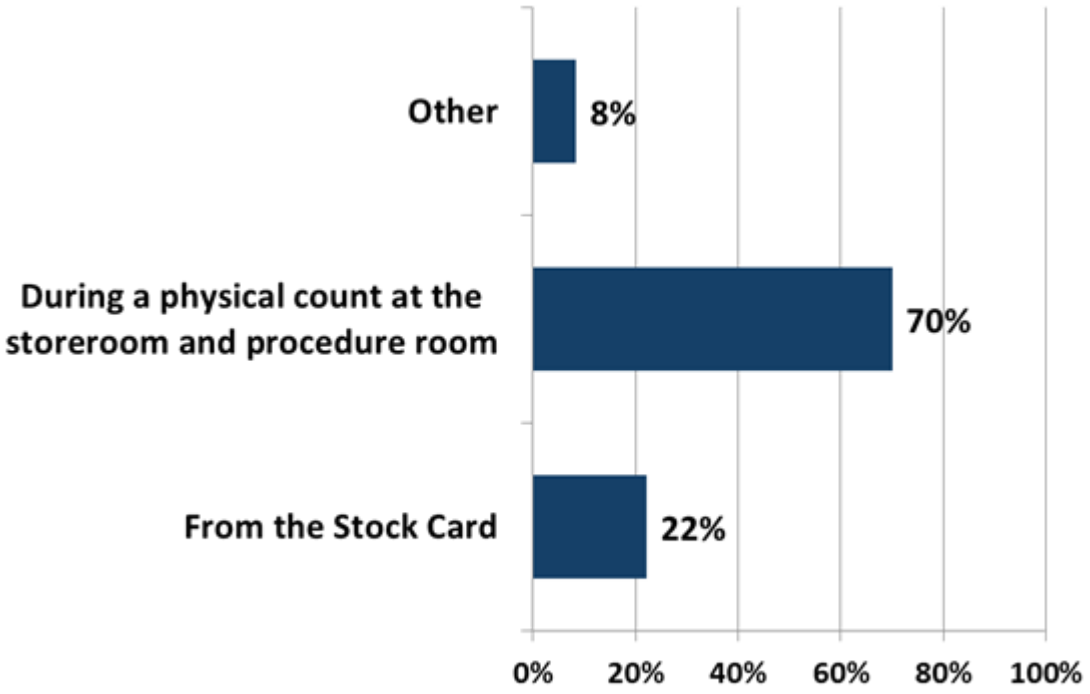
Figure12. Types of forms used to record movement of commodities during outreach



Per the system design, sites should conduct a physical inventory prior to entering data on the C/R form. This gives them the opportunity to correct any errors on the stock card and enter accurate stock data on the C/R form. Figure 13 below shows that 70 percent of the sites capture stock on hand data during the physical count at the storeroom and the procedure room, while 22 percent directly capture data from the stock card instead of doing a physical inventory at the time of

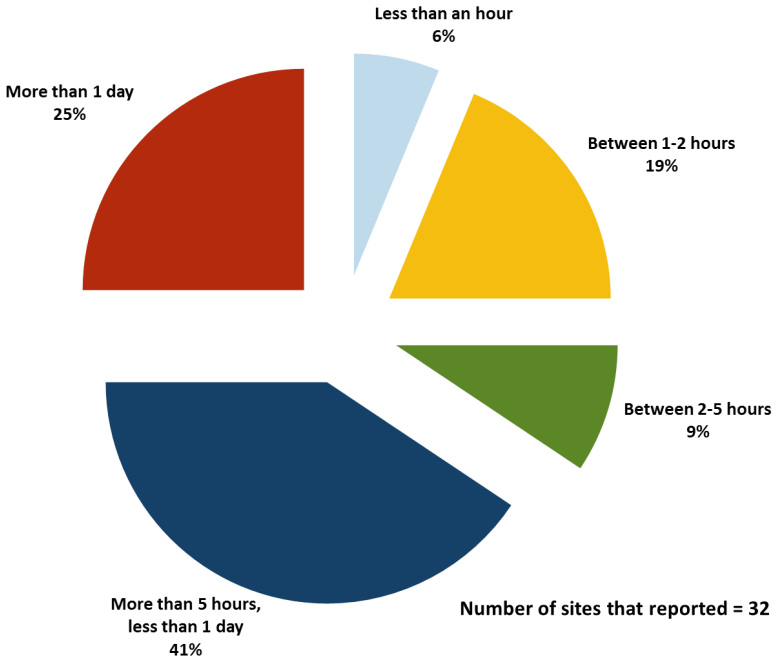
reporting. Approximately 86 percent of the sites reported that they should submit their C/R forms by the 7th of the next month, although actual reporting rates from the last three reporting cycles show an average of 50 percent adhering to this deadline. All sites evaluated stated that they include quantities consumed during outreach and total number of procedures performed in their C/R form.

Figure13. Where sites capture stock on hand data for reporting on C/R form



Most staff that manage VMMC commodities also have other job responsibilities and competing priorities. On average, 41 percent of the staff mentioned needing approximately five hours to complete the C/R form, while 25 percent of sites reported needing more than a day to complete the C/R form. See figure 14 below for the total breakdown of time spent to complete the C/R form.

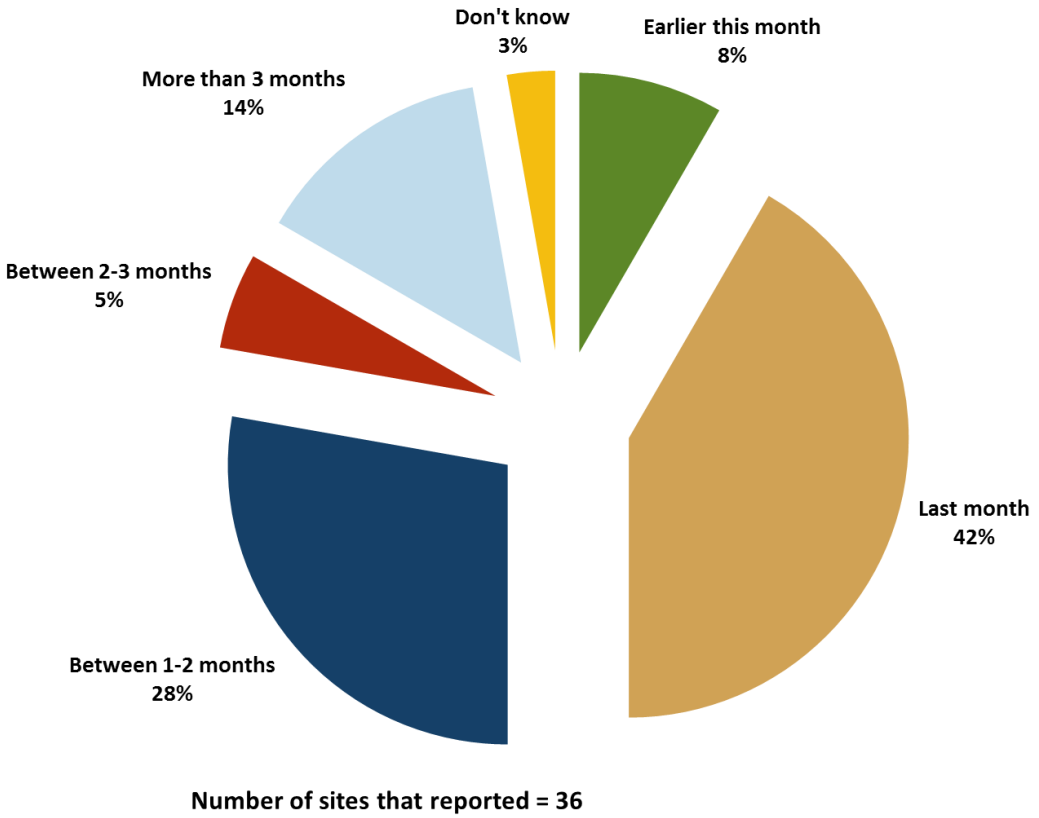
Figure 14. Average time it takes to complete C/R form



Based on the interview with the DPS (LU) staff, many sites are submitting the C/R form only when they need commodities and not when the reports are due. Other possible reasons suggested include: problems with staff retention, pharmacy staff not getting adequate incentives, and the VMMC program not being a priority for facility staff.

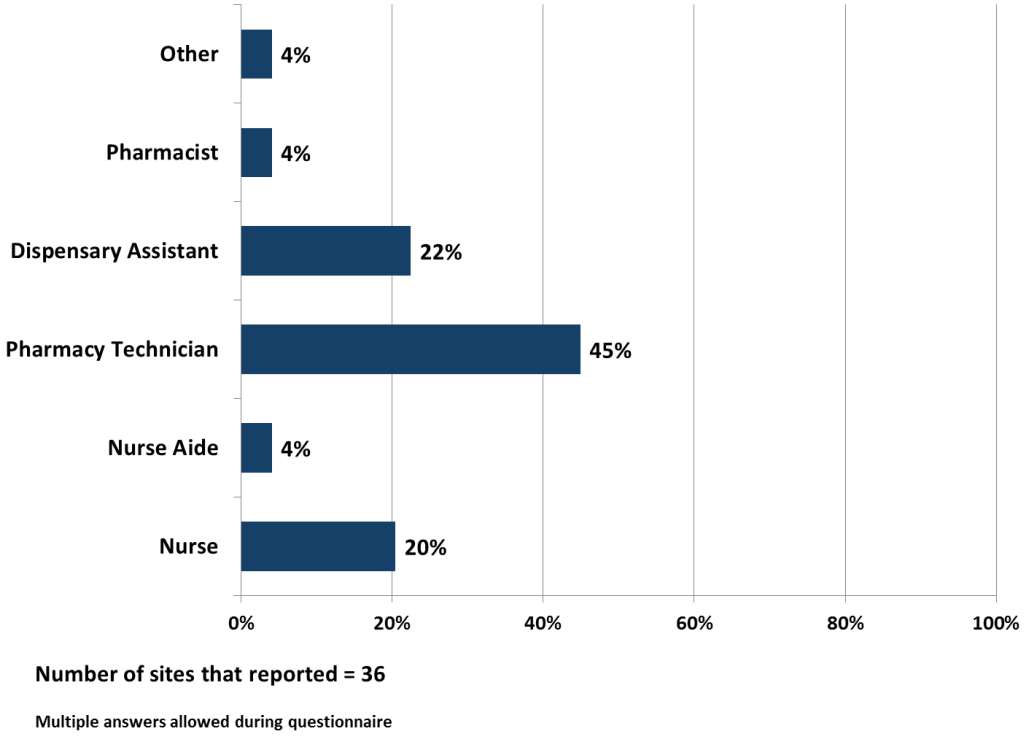
Ninety two percent of the sites stated that they submit CR forms bimonthly to report logistics data to DPS (LU). The remaining eight percent that didn't submit their forms on time reported having other competing priorities, or limited human resources as some of the reasons for not reporting on time. Figure 15 below shows the breakdown by the last time sites completed and submitted the C/R form. Per the system design, all sites should have submitted their C/R form within the last month at the time of the evaluation; however, only 42 percent of sites reported submitting their C/R form on time. Another 28 percent submitted their C/R form within the last 1-2 months, while 14 percent of the sites submitted their reports more than three months ago.

Figure 15. Last time sites submitted C/R form



Prior to the VMMC system redesign, nursing staff were completing C/R forms. During the SOP rollout sites were informed that pharmacy staff should have the primary responsibility for commodity management. Figure 16 shows the breakdown by persons responsible for completing the C/R form. At the majority of the sites, pharmacy staff such as pharmacy technicians, dispensary assistants, and pharmacists are responsible for completing the C/R form, at 45, 22 and 4 percent, respectively. Only 24 percent of the sites reported nurses and nurse aides as the persons responsible for completing the C/R form.

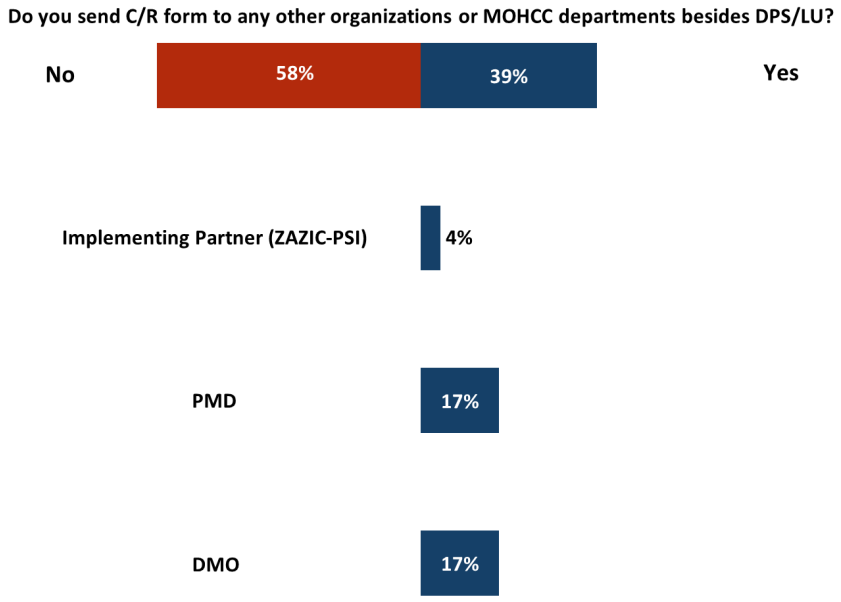
Figure 16. Person responsible for completing the C/R form



Sites were also asked how C/R forms are submitted to the higher level. Approximately 60 **p**ercent of the sites reported hand delivering their completed C/R form to the DPS-LU, while 22 percent send it by email and another 17% by a courier service. Besides sending the C/R form for reporting and obtaining resupplies to the LU, commodity information should also flow from the sites to the DMO and the PMD. Figure 17 shows that the majority of the sites (58 percent) do not send the form to any other organization besides the MOHCC (DPS). Only 17 percent of the sites reported sending the C/R form to both the PMD and the DMO. Only four percent of the sites share the C/R form with the implementing partner. One of the concerns expressed by the IPs was not receiving information on how the sites they support are performing. IPs do not have access to the C/R forms submitted. They have to officially submit a request for information through the (MOHCC) AIDS and TB Directorate

During data collection some of the sites reported ordering STI and antibiotics through the VMMC C/R form. These products are not included in the VMMC system and should be ordered through the Essential Medicines Pull System (EMPS).

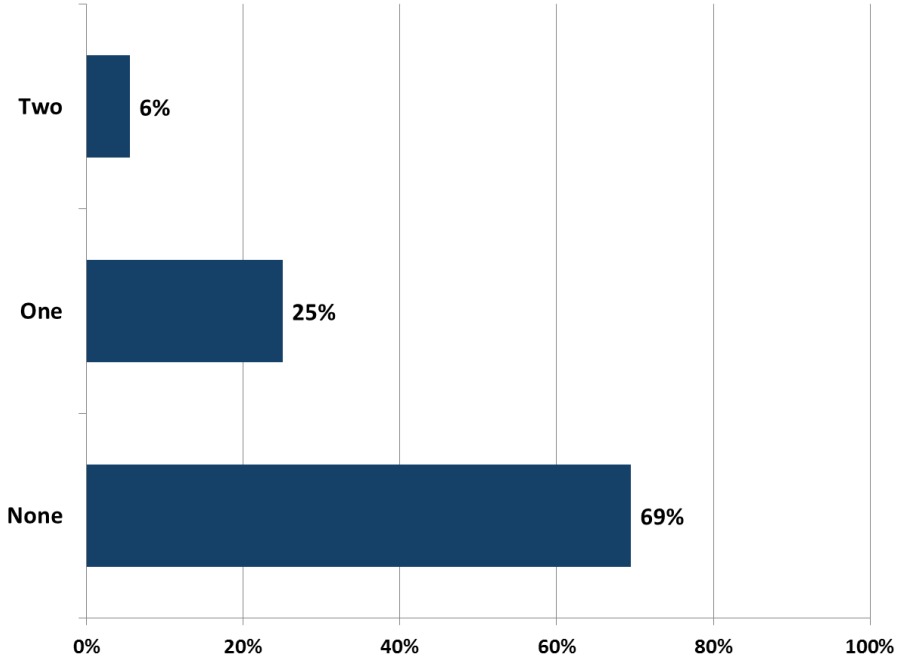
Figure 17. Organizations besides the MOHCC (DPS) with whom C/R form is shared



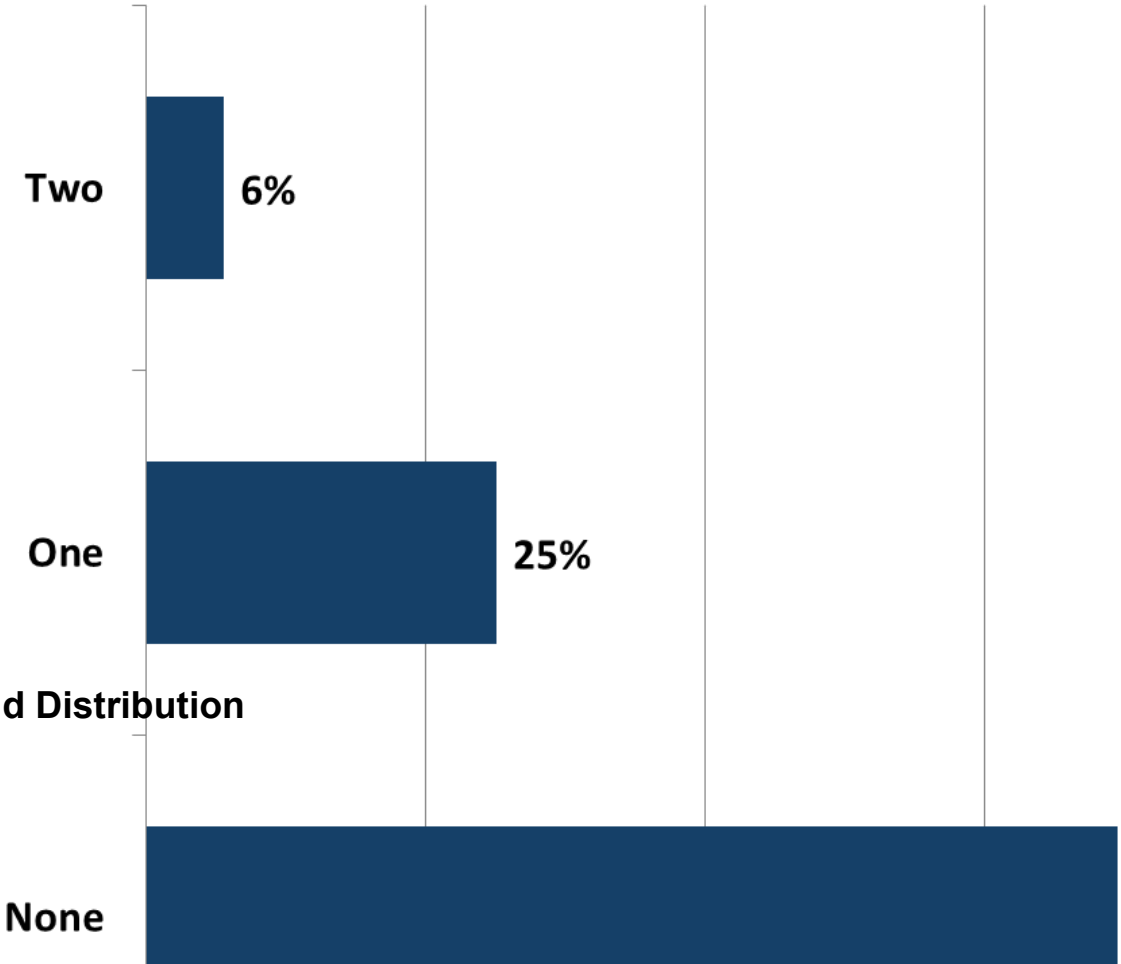
Inventory Control Procedures

Most VMMC commodities are in full supply. The only exception is PrePex, size E, which is currently out of stock at the central level. Sites evaluated are aware of the bi-monthly order cycle, and the maximum-minimum inventory control levels that should be maintained for VMMC commodities. They are also knowledgeable about the emergency ordering procedures to follow in case they have to place an emergency order. Those who placed an emergency order knew to call DPS-LU to alert them and place an order. Figure 18 shows that 69 percent of sites did not place an emergency order in the last three months.

Figure 18. Number of emergency orders placed in the last three months



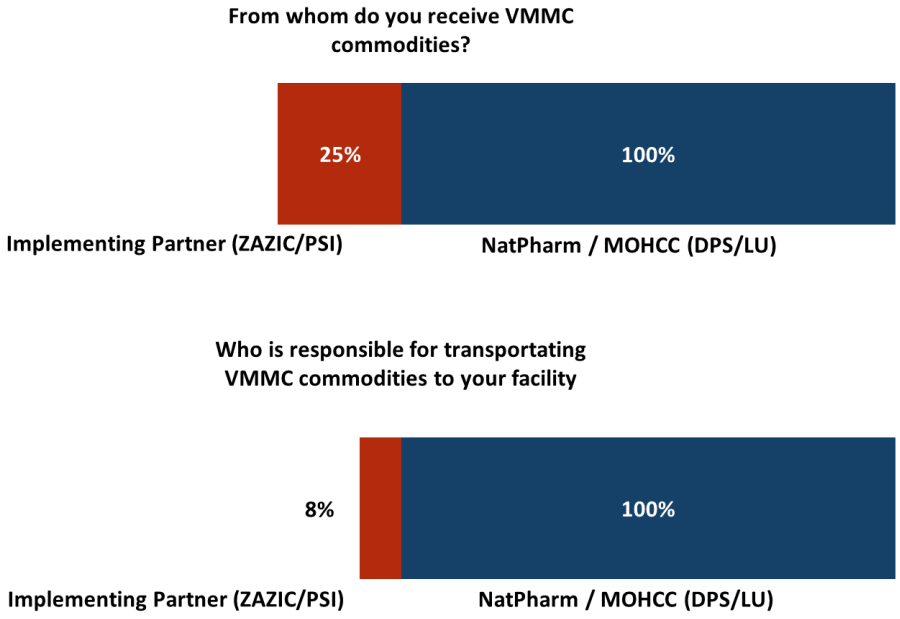
Number of sites that reported = 36



Transportation and Distribution

NatPharm is responsible for distributing VMMC commodities to all sites on a bimonthly basis. NatPharm staff reported having sufficient number of trucks and drivers for transporting VMMC commodities. All sites reported receiving commodities from NatPharm. Additionally, 25 percent also mentioned receiving commodities from their implementing partner. According to the system design, sites should only receive VMMC commodities through NatPharm; however, at times implementing partners also supplement sites with additional commodities or drop off commodities when visiting sites.

Figure 19. From whom do sites receive VMMC commodities?



There are no specific routes for distribution; it is usually done based on each province. For orders received late, VMMC commodities are distributed on trucks assigned for other commodities, with available space. NatPharm is not responsible for transporting emergency orders. Sites that place emergency orders are responsible for picking up those orders. Often, IPs pick up emergency orders for the sites they support. Figure 20 shows the breakdown of how often sites receive commodities. Per the system design, only 34 percent of sites receive commodities on a bimonthly basis, while almost half (43 percent) reported receiving commodities on a quarterly basis.

Figure 21 shows the average lead time for receiving commodities which is defined as the time it takes between submission of the C/R form to the LU to the time VMMC commodities are received and ready for use at a VMMC site. On average, a third of the sites (32 percent) reported a lead time of four weeks, and approximately another third (29 percent) reported a lead time of eight weeks, while a fifth (19 percent) of the sites reported six weeks lead time. Per the system design, an average lead time should be approximately four weeks. One of the main reasons for longer lead time is sites not reporting on time, which puts those sites out of cycle; subsequently, NatPharm is unable to deliver to those sites on a bimonthly basis.

Figure 20. How often do sites receive VMMC commodities

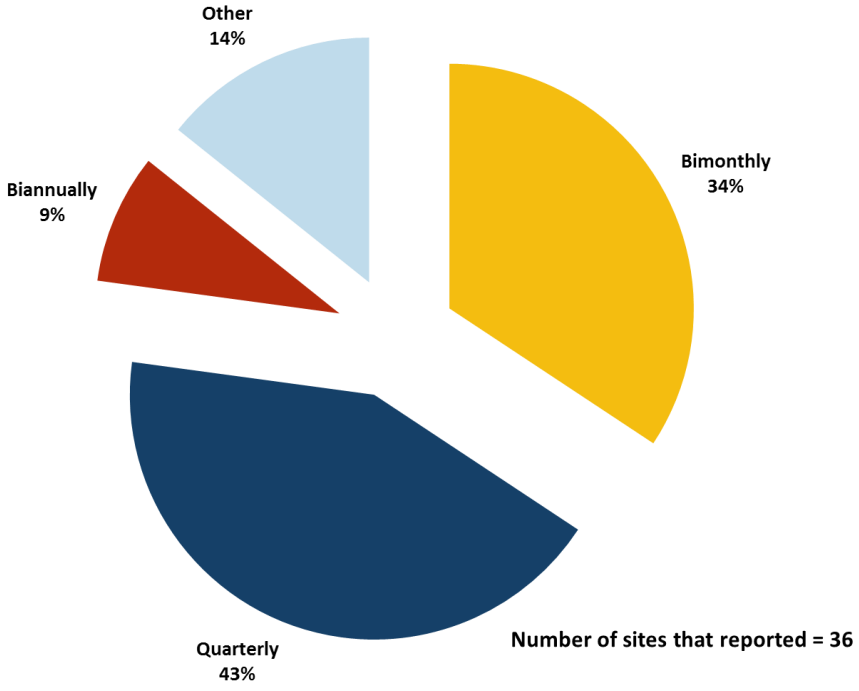
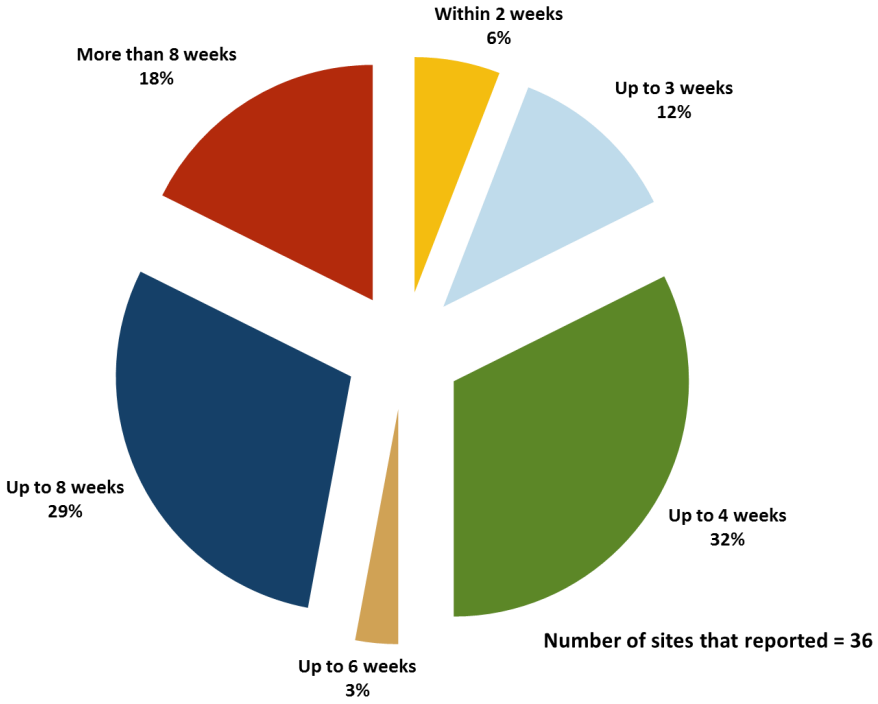


Figure 21. Lead time for receiving VMMC commodities



Warehousing and Storage

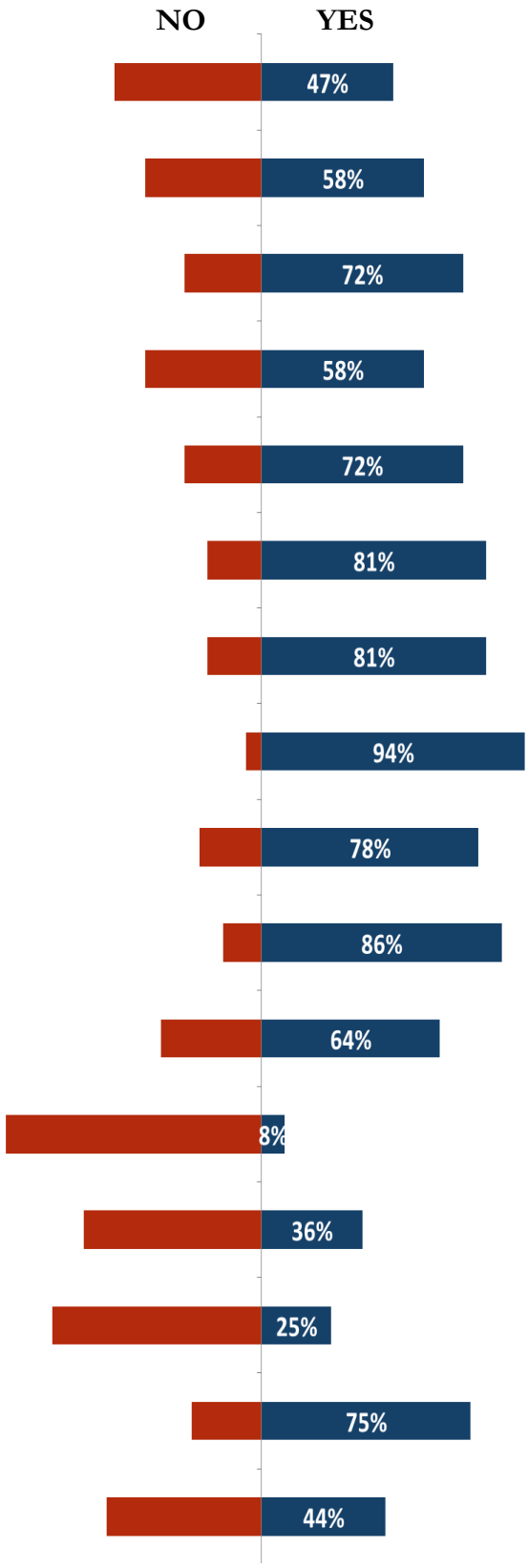
At the central level, NatPharm is responsible for storage of VMMC commodities. To provide clients with high-quality commodities, each site must have safe, protected storage areas to help prevent damage and ensure efficient handling of commodities. Per the system design, both NatPharm Harare and Bulawayo should be used for storage and distribution of VMMC commodities. However, at present, only NatPharm Harare stores and distributes VMMC commodities. This has resulted in additional workload for staff at NatPharm Harare who are responsible for storing and distributing VMMC commodities to all VMMC sites. The NatPharm Harare staff interviewed would prefer to see a decentralized system, with both NatPharm warehouse being used for VMMC commodities. During the evaluation team's visit to NatPharm Harare, the team observed limited availability of storage space, a lot of space was occupied with sharps disposal containers and paper towels for the VMMC program. The VMMC program is now the second largest, after the ARV program. If this situation persists, NatPharm Harare is likely to run out of space for storage of other commodities.

In assessing storage areas at the VMMC sites, the evaluation examined the level of compliance with the sixteen standard guidelines for proper storage. The data collectors assessed each site's adherence to storage conditions through visual inspection of the storage area based on the storage conditions listed below. Figure 22 shows the breakdown for the percentage of sites that adhere to proper storage guidelines for each storage condition. The most widely adhered to storage guidelines include: securing storage area with a lock and key (94 percent), well maintained roof (86 percent) and no evidence of rodents and protection from direct sunlight (81 percent). The least maintained storage conditions include: insufficient storage space (92 percent), products stacked close to the wall (75 percent), and lack of fire safety equipment (64 percent).

An extra factor that contributes to the lack of space at sites is the quantity of used metal instruments stored. There is currently a system to pick up used metal instruments after disinfection by a designated entity, but it is believed to only cover limited areas of the country. During the evaluation visits sites reported and showed large quantities of disinfected used metal instruments being stored, sometimes even at the same location as the unused commodities. They also mentioned that guidelines for waste management for all items, including metal instruments, are not available.

Figure 22. Percentage of sites that maintain storage guidelines for VMMC commodities

No.	Description
1	Products are arranged on shelves with arrows pointing up, and with identification labels, expiry dates, and manufacturing dates clearly visible.
2	Products are stored and organized to FEFO procedures and are accessible for counting and general stock management.
3	Outer cartons are in good condition (not crushed, perforated, stained, or otherwise visibly damaged).
4	Damaged and expired products are separated from usable products in the storeroom, and procedures exist for removing them from inventory.
5	Products are stored in a dry, well-lit, well-ventilated storeroom. *(Visually inspect roof, walls, and floor of storeroom.)*
6	Cartons and products are protected from direct sunlight.
7	There is no evidence of rodents or insects in the storage area. *(Visually inspect the storage area for evidence of rodents [droppings] or insects that can damage or contaminate the products.)*
8	Storage area is secured with a lock and key but is accessible during normal working hours; access is limited to authorized personnel.
9	Products are stored at the appropriate temperature according to product temperature specifications (8°–30°C) and including cold chain storage (2°–8°C), as required for certain products.
10	Roof is maintained in good condition to avoid sunlight and water penetration.
11	Storeroom is clean, with all trash removed, no evidence of food and drinks, products stored on sturdy shelves/bins, and boxes organized neatly.
12	Current storage space is sufficient for existing products and planned program expansion.
13	Fire safety equipment is available and accessible. *(Any item identified as being used to promote fire safety should be considered.)*
14	Products are stacked at least 30 cm away from the walls and other rows or stacks of products (to prevent contact with outer walls and allow access to products).
15	Products are stacked no more than 2.5 m high.
16	Products are stacked at least 10 cm off the floor (on pallets or other materials that elevate the products off the floor).



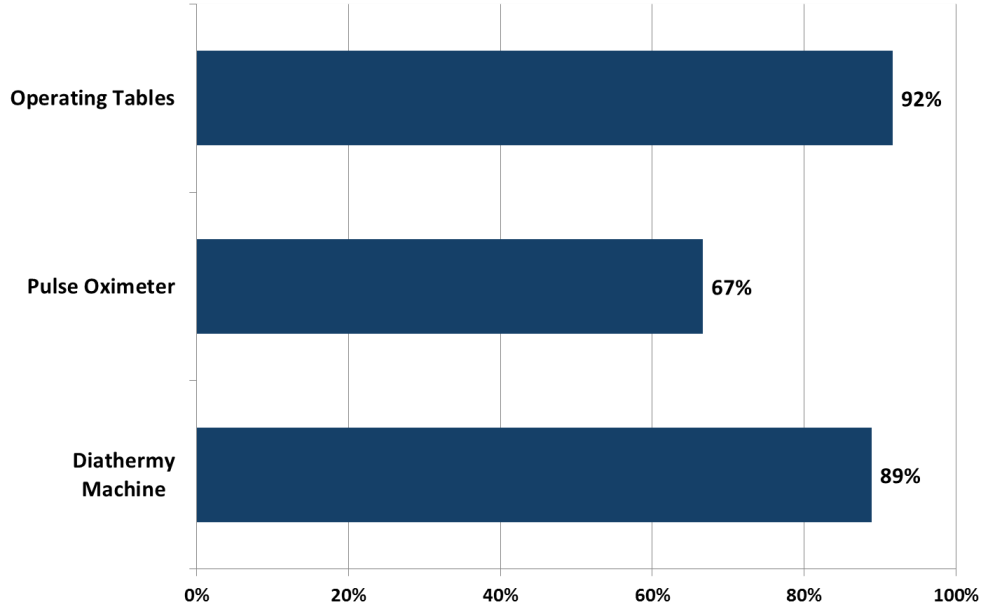
Commodity Availability

This section discusses findings on the most important outcome of a logistics system—stock availability. The evaluation collected data on both stock on hand and stock outs on the day of the visit, and in the previous three months, from Jan 1, 2015 – March 31, 2015.

While stock outs demonstrate one outcome of a poorly functioning logistics system, overstocks are another important indicator of a logistics system's performance. Overstocks put the commodities at greater risk of expiration or damage before they can be used; they also take up space, and other sites may have inadequate stock as a result. Even where stock outs are not high, sites with too little stock at the time of the visit are either likely to stock out or will require an emergency order before they receive their next routine order.

The survey also verified the availability of certain equipment used for VMMC procedures. Figure 23 below shows the availability of tracer VMMC equipment. Ninety two percent of the sites had an operating table available followed by 89 percent of the sites with diathermy machine.

Figure 23. Availability of VMMC equipment on the day of the visit



Of the 36 sites surveyed, 94 percent reported that they manage VMMC commodities separately from other commodities, with separate stock cards to ensure that VMMC commodities were being used for its intended purpose. Figure 24 below shows the percentage of facilities that manage each VMMC commodity. It is important to note that six commonly used commodities were selected to serve as a proxy for overall stock availability at VMMC sites. Analysis for the other commodity availability indicators is done for

only those sites that manage that specific commodity. Figure 24 below shows that all sites surveyed manage single use forceps guide MC kits, paracetamol and lignocaine. Only 61 percent of sites manage PrePex sizing plate, and only 56 percent of the facilities reported that they manage adrenaline injection for the VMMC program, which is used in case of an emergency.

Figure 24. Percentage of sites that manage VMMC commodities

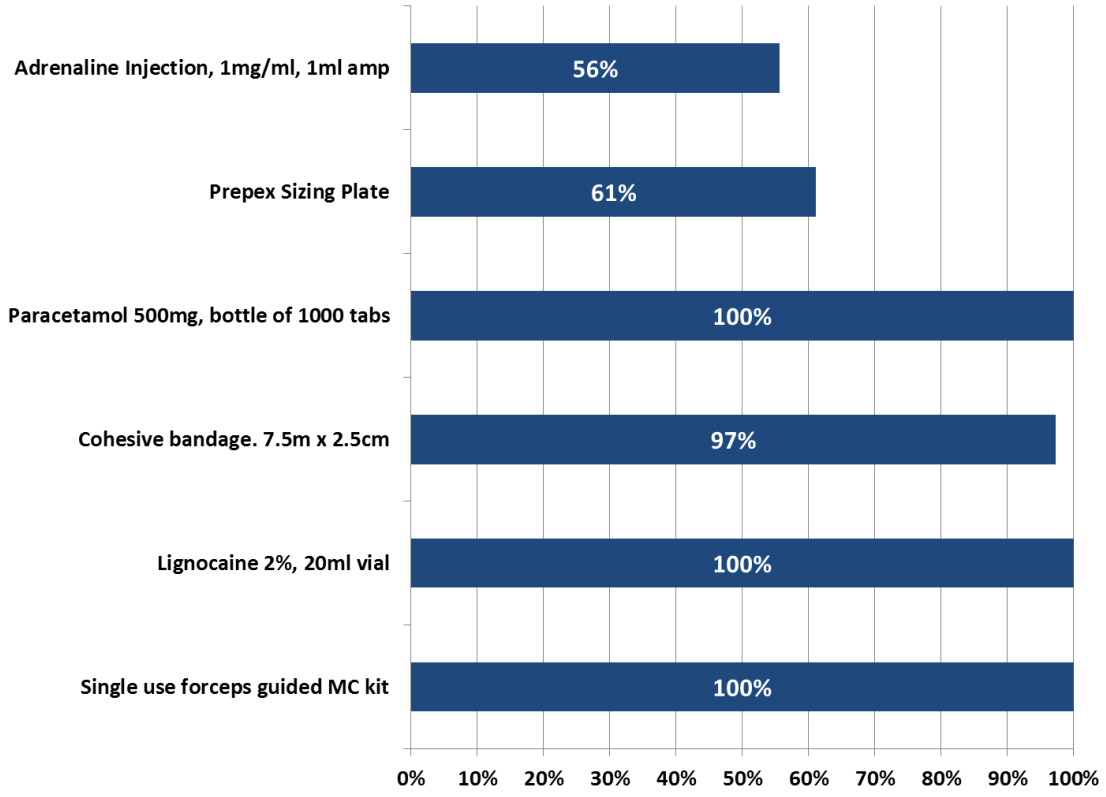
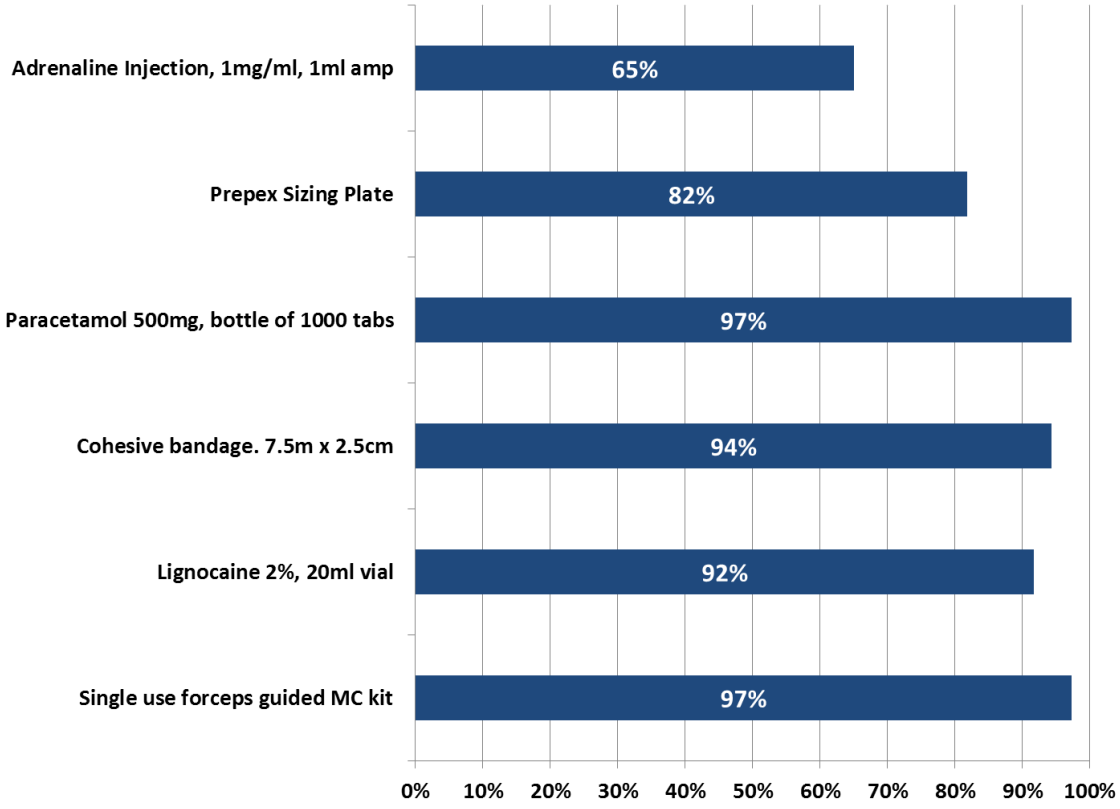


Figure 25 shows product availability for VMMC commodities on the day of the visit. All but one site had single use forceps guided MC kits and paracetamol available. Similarly, the availability of all commodities assessed at sites that manage those commodities is shown below.

Figure 25. Product availability for VMMC commodities on the day of the visit



Maintaining accurate stock cards is an integral component of efficient logistics management. The stock status information captured in the stock cards is used for managing inventory, requesting resupplies and completing the C/R forms.

Figure 26 below shows the percentage of facilities that had stock cards available for the commodities they manage. With the exception of PrePex sizing plate and adrenaline injection, almost all sites had stock cards available. All sites had a stock card available for lignocaine, while 94 percent of the sites had stock cards available for single use forceps guided MC kit, cohesive bandages and paracetamol. Most sites maintained a separate register for emergency medicines, including adrenaline injection. As the results show, only 40 percent of the sites evaluated used stock cards for recording stocks of adrenaline injection.

Figure 26. Percentage of sites that maintain stock cards for commodities managed

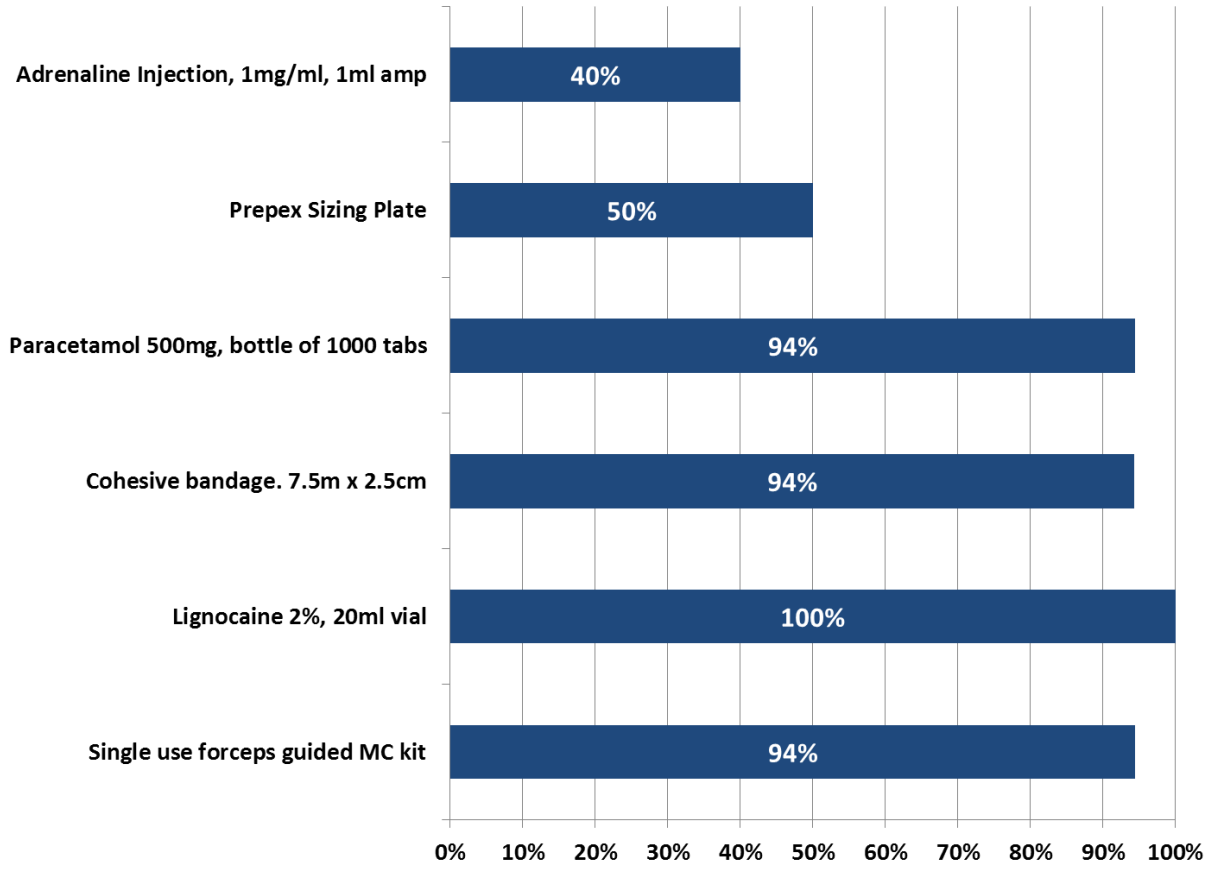
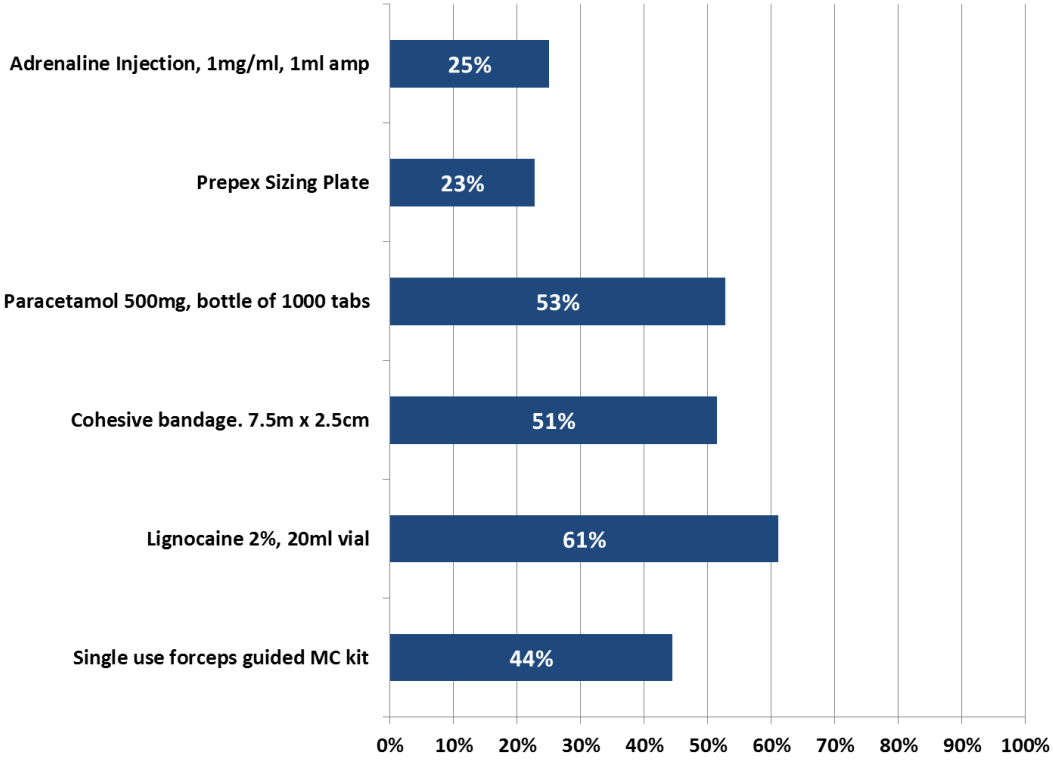


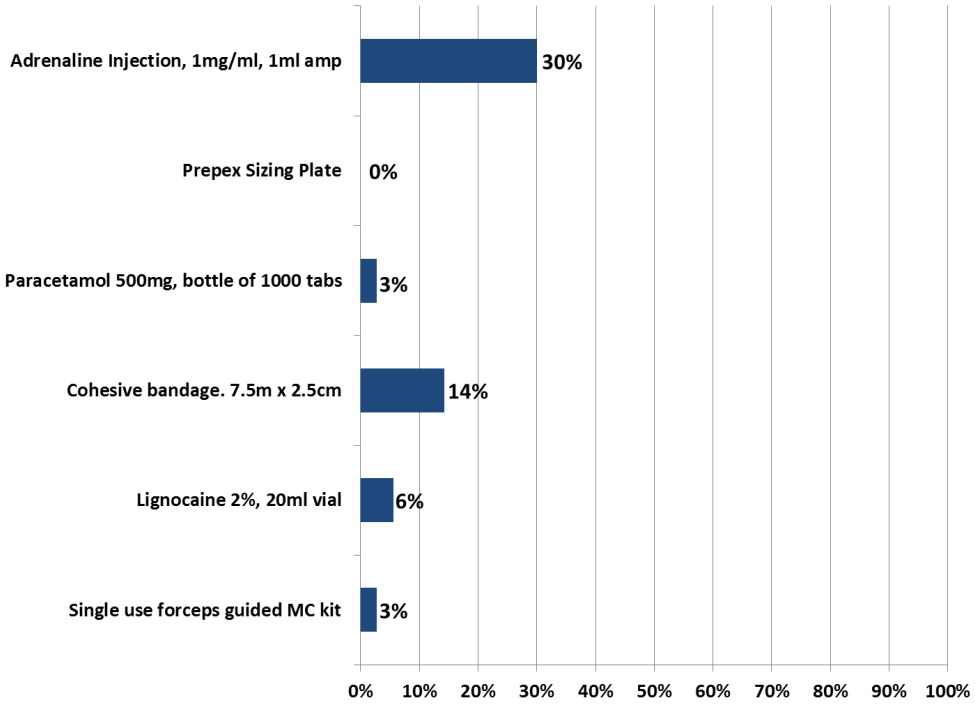
Figure 27 shows the percentage of sites that keep updated stock cards. For this analysis, any site that kept their stock cards updated based on the last issue, completed all sections of the stock card, including monthly physical inventory is considered updated. On average less than 60 percent of the sites regularly updated their stock cards. Approximately 60 percent of the sites kept a stock card for lignocaine updated, followed by 53 percent for paracetamol and 51 percent for cohesive bandages. Less than a quarter (23 percent) of the sites kept a stock card for PrePex sizing plate updated.

Figure 27. Percentage of sites that keep updated stock cards



As noted previously, stock outs are the most serious negative outcome in a logistics system. Figure 28 below illustrates stock out rates for VMMC commodities in the last three months. Overall, product availability rates are high; only one site out of the 36 (three percent) was stocked out of single use forceps guided MC kit and paracetamol. Adrenaline injection had the highest rate of stock out at 30 percent. While adrenaline is not a frequently used item, and only needed during an emergency, it is essential to have in case of an emergency.

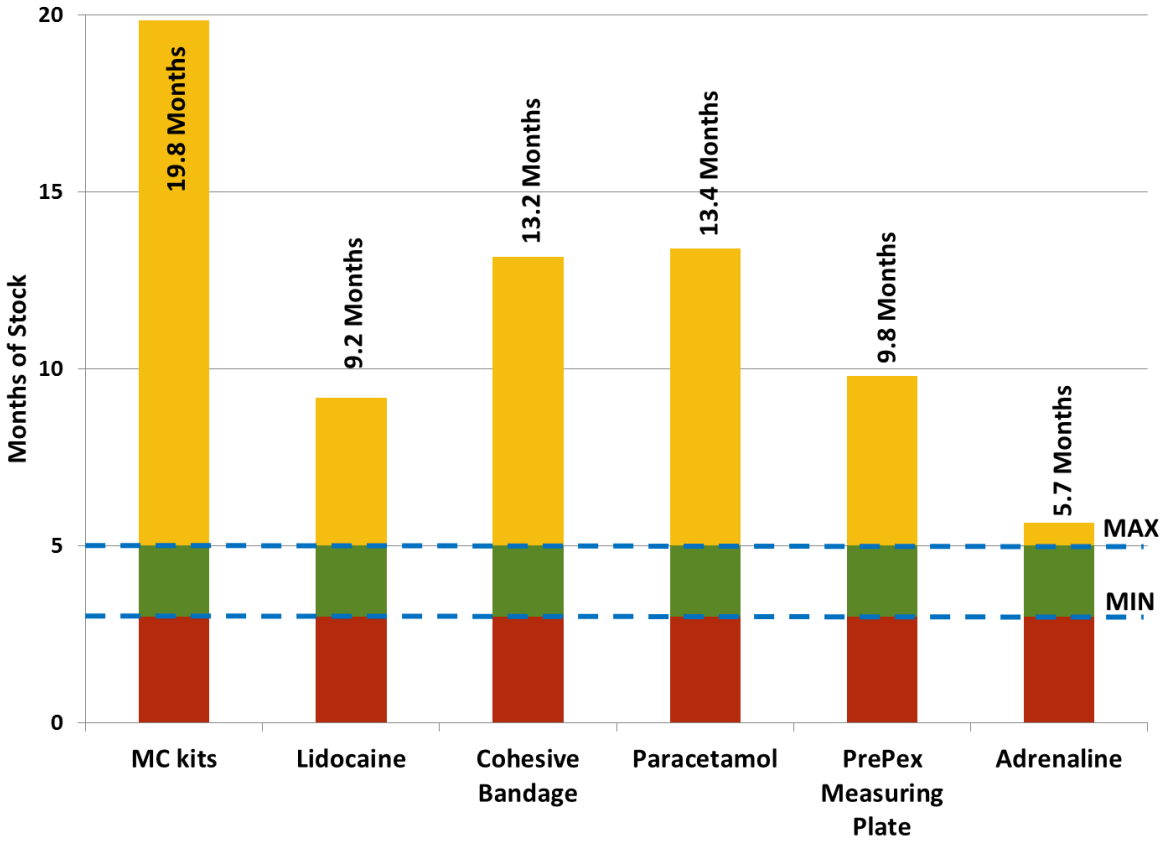
Figure 28. Percentage of sites stocked out in the last three months (Jan – March, 2015)



One of the key indictors used to measure a well-functioning logistics system is months of stock on hand on the day of the visit. This indicator is calculated using issues (estimated consumption) for up to the past three months. Maintaining appropriate stock levels of commodities at the sites is also critical to ensuring commodity security. Stock outs and overstocks indicate a breakdown in the logistics system and can lead to disruptions in availability or a greater risk of product damage or expiries.

To ensure appropriate stock inventory, VMMC sites should maintain between 3-5 months of stock. Figure 29 shows average months of stock for VMMC commodities at sites. On average, sites are overstocked for all VMMC commodities. Overstocks are particularly severe for MC kits, with almost 20 months of stock, and are at the highest risk of expiries. Overstocks for other commodities range anywhere from 5.7 months for adrenaline to 13.4 months of overstock for paracetamol. Many factors can contribute to improper inventory management in the form of overstocking at the sites, including lack of supervision, sites having commodities pushed to them without requesting, receiving commodities from other sources other than NatPharm, except in the case of borrowing/transfers from other facilities), not submitting timely orders, and/or sites not receiving their orders on time.

Figure 29: Average months of stock at sites for select VMMC commodities



Recommendations

Findings from both the in-depth interviews and quantitative survey, coupled with discussions from the stakeholders and partners during the stakeholders' presentation revealed a number of key target areas for VMMC system improvement. The following priority recommendations are based on those discussions.

Storage and Distribution

- Ensure that there is only one distribution system for VMMC commodities through NatPharm, as per the system design. Few sites still receive some commodities directly from partners. This will promote routine reporting and make sites accountable for reporting in order to receive VMMC commodities
- Reassess the current MC kit stock situation. Consider redistribution of MC Kits to avoid overstocks, wastage, and expiries, and to avail much needed storage space at the sites. To prevent any expiries, t is important that placement of new orders takes into consideration stocks at all locations including sites instead of just the stock situation at NatPharm.
- A comprehensive analysis of the storage space at NatPharm Bulawayo should be conducted as soon as possible to supplement current storage space at NatPharm Harare. As per the VMMC system design, NatPharm Bulawayo should already have been in use for the storage and distribution of VMMC commodities. Developing a clear timeline to complete this analysis and developing a transition plan will help achieve this goal.

Coordination

- DPS- and PMD should play a more active role in VMMC commodity management and should include regular analyses of C/R forms, a check of data quality, and other relevant information. Following up with non-reporting sites will create much needed accountability from sites. DMO should ensure that the feedback loop for information sharing also includes the PMD.
- Foster closer collaboration with implementing partners. Document and operationalize a formal procedure for sharing information with MOHCC and partners. For example, partners can receive copies of the C/R form and feedback reports from the sites they support to ensure better compliance with timely reporting, and accurate completion of the forms. Formalize the feedback loop between PMD, DMO, and VMMC staff at sites. This will create transparency and visibility of data at all levels.
- Align incentives for VMMC procedures with submission of C/R forms. Recommendations were made to review the current procedure for disbursing the incentives where staff at sites

receive funds on a monthly basis regardless of reporting milestones. It is envisioned that by only providing incentives after submission of reports has been acknowledged by DPS-LU that higher reporting rates will take place.

- Stakeholders should ensure that STI commodities and antibiotics are managed along with other essential medicines instead of through the VMMC logistics system. The Essential Medicines Pull System (EMPS) is the system that should be used by all sites to order all STI commodities and antibiotics needed for the VMMC program.
- DPS (LU) should routinely share information on national stock availability and reporting data with program managers, DMO, and PMD. In addition, IPs should receive explicit guidance on how to access facility level and national stock availability data.

LMIS

- Consider eliminating use of the Outreach Reconciliation Form. Based on the findings, this form is not being used by many sites despite being modified during the LMIS redesign system in 2013. The sites are able to manage commodities at the outreach level via other methods such as registers. Lack of use of this form has not affected the data quality of C/R forms that are transmitted to the DPS.
- Consider the addition of PrePex & dorsal slit commodities to the list of frequently used items in the C/R form. Since these commodities are now widely used in multiple sites it will make it easier on health site staff if they are already incorporated in the frequently used items. This should be a simple modification to the C/R form.
- Develop an alternative feedback mechanism to VMMC sites until the automated feedback reporting system is operational. It is extremely important that sites know how they are performing on VMMC reporting to be able to learn from any mistakes that may have taken place, in addition to other information. While the electronic system is currently not available, some form of response, even if minimal, is required that confirms receipt of the form as well as any problems encountered with the data. Feedback is also extremely important for other stakeholders that currently have no visibility into the quality of data at sites and therefore cannot promote the needed change.

Waste Disposal

- Disseminate disposal guidelines for VMMC commodities, obsolete products and biomedical waste. This will promote proper use and disposal of VMMC kits and other waste and eliminate confusion on waste disposal.
- Consult with the identified smelting company that handles metal waste to determine their pick up coverage area and find solutions for those sites currently not included. It is believed that only some areas of the country are being served by the company that handles the metal

waste, creating space constraints at the sites. Creating a clearly defined schedule for metal waste pickup that covers larger portions of the country will help reduce this problem.

Training

- Increase the number of trained staff at VMMC sites. This will provide an additional cadre of trained staff at VMMC sites to manage VMMC logistics. During site visits it was found that sites sometimes didn't report or were late to submit the forms because there was only one staff member trained in VMMC that was busy or not available. By having additional members trained it is believed that reporting will be increased and reports will arrive earlier to the DPS-LU than previously.

Product Use

- Single use (disposable) instruments will be used for the short and medium term given the recommendation from the VMMC program. While some stakeholders have mentioned that reusable instruments are better for long term sustainability, it is difficult to implement their use given the need for additional equipment and resources that are not currently available.

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