



**THE UNITED REPUBLIC OF TANZANIA  
NATIONAL AUDIT OFFICE**



**A PERFORMANCE AUDIT REPORT ON THE MANAGEMENT OF DEMAND  
FORECASTING AND DISTRIBUTION OF ESSENTIAL MEDICINES AND MEDICAL  
SUPPLIES TO HEALTH FACILITIES IN TANZANIA**

**THE MINISTRY OF HEALTH AND SOCIAL WELFARE AND MEDICAL STORES  
DEPARTMENT**



**A REPORT OF THE CONTROLLER AND AUDITOR GENERAL OF THE UNITED  
REPUBLIC OF TANZANIA  
December 2014**

**Performance Audit Report on the Management of Demand Forecasting and Distribution  
of Essential Medicines and Medical Supplies to Health Facilities in Tanzania**

**December 2014**



**THE UNITED REPUBLIC OF TANZANIA  
NATIONAL AUDIT OFFICE**



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## PREFACE

The Public Audit Act No. 11 of 2008, Section 28 authorizes the Controller and Auditor General to carry out Performance Audit (Value-for-Money Audit) for the purposes of establishing economy, efficiency and effectiveness of any expenditure or use of resources in the Ministries, Independent Departments and Executive Agencies (MDAs), Local Government Authorities (LGAs) and Public Authorities and other Bodies which involves enquiring, examining, investigating and reporting, as deemed necessary under the circumstances.

I have the honour to submit the Performance Audit Report on the Management of Forecasting and Distribution of Essential Medicines and Medical Supplies to Health Facilities in Tanzania to His Excellency, the President of the United Republic of Tanzania, Dr. Jakaya Mrisho Kikwete and through him to the Parliament of the United Republic of Tanzania.

The report contains conclusions and recommendations that have focused mainly on the availability of essential medicines and medical supplies which covers the issues of demand forecast, ordering, processing and delivery of essential medicines and medical supplies. The audit also covered the monitoring and evaluation of MSD in forecasting and distribution of essential medicines and medical supplies as well as the overall performance of the MSD on ensuring timely availability of essential medicines and medical supplies in public hospitals and health facilities.

The management of the Ministry of Health and Social Welfare and Medical Store Department (MSD) have been given the opportunity to scrutinize the factual contents of the report and come up with comments on it. I wish to acknowledge that the discussions with the audited entities have been very useful and constructive in achieving the objectives of the audit.

My office intends to carry out a follow-up at an appropriate time regarding actions taken by the audited entities in relation to the recommendations in this report.

The office has also subjected this report for critical review by the following experts in Supply Chain namely: Professor Phares G. Mujinja from Muhimbili University of Health and Allied Sciences and Mr. Christopher C. Msemu, a retired senior officer who came up with useful inputs in improving and enhancing the quality of this report.

The report was prepared by Mr. Godfrey B. Ngowi, Frank Nyoni, Monica Ngoti, Isack Tungu and Baraka Kilawila under the supervision of the Assistant Auditor General - Performance Audit, Mr. George C. Haule and the Deputy Auditor General - Performance and Specialized Audit, Ms. Wendy W. Massoy.

I would like to thank my staff for their valuable inputs in the preparation of this report. My thanks should also be extended to the audited entities for their cooperation during the audit and their fruitful comments on the draft report.

A handwritten signature in black ink on a light blue background. The signature is stylized and appears to read 'Mussa J. Assad'.

Prof. Mussa J. Assad  
Controller and Auditor General  
United Republic of Tanzania  
December 2014

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## ABBREVIATIONS AND ACRONYMS

CCHP	Council Comprehensive Health Guidelines
CHMT	Council Health Management Team
DED	District Executive Director
DMO	District Medical Officer
DP	District Pharmacist
ELMIS	Electronic Logistic Management Information System
EMMS	Essential Medicines and Medical Supplies
ERP	Enterprise Resource Planning
HF	Health Facility
HMIS	Health Management Information System
HSSP	Health Sector Strategic Plan
HQ	Head Quarters
ILS	Integrated Logistic System
INTOSAI	International Organization of Supreme Audit Institutions
LGA	Local Government Authority
MoF	Ministry of Finance
MoHSW	Ministry of Health and Social Welfare
MoU	Memorandum of Understanding
MSD	Medical Stores Department
NAOT	National Audit Office Tanzania
PHSDP	Primary Health Services Development Programme
PPRA	Public Procurement Regulatory Authority
PSS	Pharmaceuticals Services Sections
R&R	Report and Request
RAS	Regional Administrative Secretary
RHMT	Regional Health Management Team
RMO	Regional Medical Officer
SOP	Standard Operating Procedure
URT	United Republic of Tanzania
USAID	United States Agency for International Development
WHO	World Health Organization

## DEFINITION OF TERMS

<i>Order Processing time at MSD zonal offices</i>	The time (in number of days) from when an order is received at MSD Zonal Office from the client (health facilities in the LGAs) to when the dispatch of such an order is made.
<i>Order Processing time at MSD central store</i>	The time (in number of days) from when an order is received at MSD HQ from the Zonal Office to when the dispatch of such an order is made.
<i>Delivery time</i>	The time (in number of days) from when an order is dispatched at MSD Central or Zonal Store to when the order is received at MSD Zonal Store or Health Facilities (Dispensaries and Health Facilities)
<i>Demand Forecasting</i>	An iterative process and a part of supply chain that links supply to demand so that consumers and service providers have products available when and where they need them.
<i>Direct delivery</i>	Method of delivery where MSD conveys the consignment of essential medicines and medical supplies from the Zonal Offices directly to the Health Facilities instead of passing through the LGA's Offices.
<i>Indirect Delivery</i>	Method of delivery where MSD conveys the consignment of essential medicines and medical supplies to the Health Facilities by passing through the District Medical Stores which ultimately distributes it to the Health Facilities.
<i>Essential medicines</i>	Are medicines that satisfy the priority health care needs of the population. They are selected with due regard to public health relevance, evidence on efficacy and safety, and comparative cost-effectiveness
<i>Direct purchases</i>	When a registered client with MSD buys the medicines and medical supplies directly from the MSD zonal offices on demand basis ( at any time when the need arise)
<i>Health Facilities(HFs)</i>	For this audit, HF refers District hospitals, Health centers and Dispensaries owned by Local Government Authority
<i>Line of items</i>	Refer to a complete single item of medicines or medical equipment in an order

<sup>1</sup> Principles for Forecasting Demand for Global Health Products

  
EXECUTIVE SUMMARY

There is a problem of availability of essential medicines and medical supplies in most of public health facilities in Tanzania. The recent review of the National Supply Chain shows that key essential medicines are often out of stock. Likewise, the report by World Health Organization (WHO) on the World Health Statistics 2014 indicates that in the United Republic of Tanzania the median availability of selected generic medicines in public outlets is only 23.4% while the percentage was double in private outlets to 47.9% (WHO, 2014).

Not only that but also, the report by Ministry of Health and Social Welfare (MoHSW) on the Mid Term analytical review of the Performance of the Health Sector Strategic Plan III 2009-2015 indicates that the availability of 14 WHO Tracer medicines (non-expired) in health facilities is generally low.

The main audited entities were the Ministry of Health and Social Welfare (MoHSW) and the Medical Stores Department (MSD). The audit dwelt on assessing the availability of essential medicines and medical supplies in public health facilities in Tanzania focusing on demand forecasting and delays in distribution of essential medicines and medical supplies. The audit covered a period of three financial years from 2010/11 up to 2012/13.

## Main Audit Findings

### *Unreliable demand estimates for Health Facilities*

It was noted that LGAs do not effectively conduct need assessments to come up with the demand for essential medicines and medical supplies for their health facilities. It was further noted that 50 percent of the required reports for demand forecasts from the visited LGAs were not submitted to MSD as required by the ILS Procedures Manual.

Furthermore, it was also noted that the quality assurance of demand forecasts by MSD to verify the adequacy of the demand estimates made by LGAs has not been sufficiently carried-out since it is only being done at one stage (the last stage) before submitting them for procurement plans.

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On the other hand, the data for demand forecast by MSD considered only 1 out of the 4 major factors for carrying out demand forecasts which resulted into inaccuracies of forecasts to bring in over-forecasts by 70% and under-forecasts by 30% out of the 84 cases studied considering procurement and sales cases made. The only factor considered is the logistics data which utilizes consumption and proxy consumption data while other remaining factors namely, service statistics in the health sector; morbidity data and demographic data were not considered at all.

### ***Longer lead times for the supply of medicines to Zones and HF's***

The audit found out that there is longer processing and delivery times of orders from MSD Central Warehouse to Zones and from Zonal Warehouses to Health Facilities, whereby on average 54% of the orders received at MSD Central Warehouse from Zonal Warehouses were delivered for more than prescribed standard time of 14 days with 20% of the orders taking between 15 and 21 days and 34% of the orders taking more than 21 days to be delivered.

Likewise, 76% of the orders received from the Health Facilities at Zonal Warehouses were not delivered on time with only 24% delivered on time. There were also high levels of stock out for some of the medicines at the Central Warehouse and the Zonal Warehouse indicated by different levels of stock out at the Health Facilities and Hospitals. It has been reported that 94% of Hospitals had reported being out of stock of one or more essential medical supplies while 96% of the hospitals had reported being out of stock of one or more essential medicines. Meanwhile there was a lack of essential medicines in 52% and medical supplies in 59% of hospitals for a period exceeding four weeks.

Furthermore, it was revealed that there was weak management of orders received at both levels; at Central warehouse from Zones and at Zones from Health Facilities where on average each of MSD Zone placed more than 3 times the required number of orders per annum averaging at 100 orders instead of the standard 24 orders per annum per zone. Meanwhile, 89% of the orders from Health facilities to Zonal Warehouses were not submitted on time with only 11% of them being submitted on time.

## ***Weak Monitoring and Evaluation systems***

It has been noted that the operational plan of Pharmaceuticals Service Section do not have a comprehensive plan for monitoring the distribution of essential medicines and medical supplies and the overall performance of the supply chain for the essential medicines and medical supplies in the country. Also, the few indicators set for monitoring the availability of essential medicines as per Health Sector Strategic Plan III have not been executed and therefore cannot contribute to improvements in the availability of medicines. This is amplified by the lack of guidelines for monitoring the distribution of Essential Medicines and Medical Supplies

Monitoring of distribution activities within MSD has not been adequately done and this was due to limited number of performance indicators in measuring productivity in distribution activities; lack of comprehensive guidelines for monitoring performance in distribution activities; and lack of plans for monitoring and evaluating performance of MSD in distribution activities.

### ***Unreliable funding for medicines***

It was revealed that the revolving fund at MSD has been performing badly and this has been evidenced by the deteriorating working capital at MSD with a decrease of more than 69% in a period of 5 years from TZS 81 billion in 2008 to TZS 25 billion in 2013 which decreases the capacity of MSD to procure enough medicines and medical supplies for health facilities.

Furthermore, the government debt has increased 4 times in a period of 6 years from TZS 14 billion in 2008 to TZS 69 billion in 2014 while the repayment has been very slow. There has been irregular flow of funds from MoHSW for procurement of medicines for public health facilities. For instance, with an average of 8 installments instead of the maximum 4, the government disbursed less than 10% of the total funds set for medicines in 6 out of the 8 installments made in the financial year 2012/2013.

## **Overall Conclusion**

The performance of MSD in ensuring timely availability of medicine and medical supplies to the health facilities was limited due to internal and external factors such as unreliable forecast of demand and untimely order processing and delivery of essential medicines and medical supplies to health facilities.

Moreover, external factors such as irregular release of funds from MoHSW, delay in disbursement of funds as well as unreliable funding to MSD contributed to the noted inefficiencies.

Nevertheless, the monitoring of MSD performance conducted by MoHSW mostly focused on the availability of medicine and medical supplies in health facilities. Critical areas in supply chain like demand forecast, processing and delivery of orders were not given priority in this regard.

## Recommendations

### MSD has to:

- a) consider how best they can integrate process of developing demand forecast in the CCHP Guideline in order to save time and cost for both parties LGAs and MSD by benefiting from the already established structure;
- b) ensure that the Zonal offices are involved in assessing the quality of demand forecasts reports received from the LGAs under their zone before submitting them to Headquarter;
- c) strengthen its demand forecast process by developing a system that would ensure a steady availability of consumption data that could be used as input in the computation of demand forecasts;
- d) consider establishing the performance criteria; assess the level of productivity per individual person in the whole process of processing and delivery of orders to its clients;
- e) establish and review regularly the standard time as benchmark for measuring various operations such as order processing and use them effectively to improve performance;

- f) consider developing a manual which will guide in detail the issue of monitoring and evaluation including how the information can be used to improve performance; and
- g) review the performance of its EPICOR 9 enterprise system to see if it promotes to improvements in service delivery of MSD.

**MoHSW has to:**

- a) strengthen the national supply chain system which will map all key actors, define their roles and establish accountability structure to enhance its operations;
- b) strengthen the way it monitors performance of MSD as well as developing the performance agreement with MSD;
- c) consider reviewing its arrangement on how to finance the cost related to clearing, storage and distribution the donated medicines from the vertical programs;
- d) ensure timely disbursement of funds as per approved budget to MSD to enable efficiency in its operations; and
- e) develop the strategy which will ensure the government commitment in settlement of the MSD debt in specified timeframe.

## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background

From mid-1960s to mid-1980s, the Tanzanian government focused on developing equitable opportunities in access to essential social services – including health services – for all its citizens.<sup>2</sup> Based on the principles of equity and self-reliance, the government invested in rural health infrastructure, primary health care, and moving people from scattered hamlets and villages closer to transport networks.

In 1990s the health sector in Tanzania faced a period of stagnation as the sector experienced severe shortages of essential drugs, equipment, supplies and deteriorating infrastructure<sup>3</sup>. In response to the shortage, the government through Ministry of Health took measures to improve the deteriorating situation in the health sector. The aim of the government was to make available to the whole community medicines and healthcare goods that were constrained by inadequate resources and deteriorated economy in the late 1990s.

In this regard, the Medical Stores Department (MSD) was established in 1993 as autonomous department of MoHSW and was given the mandate for Procurement, Storage and Distribution of medicines and ensures that medicines are available in the health facilities throughout the country. Since then MSD has been playing a leading role in establishing and improving supply chain system for health commodities in the country.

The supply chain system in primary health facilities started with “Essential Drugs Program (EDP) Kit from 1983-2008 using the “push” system. In early 2000, with support from DANIDA, the Pharmaceutical Supply Section (PSS) within MoHSW designed a new “pull” system which included 70 essential medicines and allowed health facilities (excluding hospitals) to specifically order individual medicines<sup>4</sup>.

<sup>2</sup> Mhamba Robert M, Mbirigenda Shukrani 2010: Pharmaceutical Industry and Access to Essential Medicines in Tanzania

<sup>3</sup> COWI, EPOS Health Consultants, 2007: Joint Evaluation of Health Sector in Tanzania

<sup>4</sup> Mikkelsen-Lopez Inez 2014: Essential Medicines in Tanzania.

In 2005 MoHSW in collaboration with John Snow Inc's DELIVER Project expanded the indent "pull" system to include all vertical programs<sup>5</sup> under the umbrella of ILS and rolled it out nationally in 2009. The hospitals (being excluded in the ILS system) were allowed to make Direct Purchase from MSD Zonal Offices.

Despite of the integral role of medicines in health system performance, the availability of essential medicines in Tanzania continued to be a challenge. Each year, more than 10 million children in the developing countries including Tanzania die of conditions that could be prevented or cured with existing vaccines or medicines (World Bank (WB) 2011).

Similarly, an estimated 1,000 women die every day from complications during pregnancy or childbirth, many of whom could be saved with access to appropriate care – including appropriate medicines.”<sup>6</sup>

## 1.2 Justification for the audit

There is a problem of availability of essential medicines and medical supplies in most of public health facilities in Tanzania. The recent review of the National Supply Chain<sup>7</sup>, shows that key essential medicine are often out of stock. Likewise, the report by WHO on the World Health Statistics 2014 indicates that in the United Republic of Tanzania the median availability of selected generic medicines in public outlets is only 23.4%<sup>8</sup> while the percentage was double in private outlets to 47.9% (WHO, 2014).

Not only that but also, the report by MoHSW on the Mid Term analytical review of the Performance of the Health Sector Strategic Plan III 2009-2015 indicates that the availability of 14 WHO Tracer medicines (non-expired) in health facilities is generally low.(URT, 2013).

Nevertheless, the “Shadow” Minister of Health and Social Welfare while delivering the speech in the Parliament in June 2014 echoed the problem of inadequacy of essential medicines and medical supplies in Health Facilities

<sup>5</sup> These are the specific arrangements to procure, store or distribute drugs and/or medical supplies on behalf of third parties (MSD Strategic Plan 2006-2012)

<sup>6</sup> Sikika, 2011: Report on Medicines and Medical Availability, May 2011

<sup>7</sup> Strategic Review of the National Supply Chain Health Commodities in Tanzania of April 2013

<sup>8</sup> Percentage of medicine outlets in which a medicine was found on the day of data collection

in the country. The government through MoHSW has admitted that there is inadequacy of pharmaceuticals; drugs and health tools which is among the 9 challenges that the Ministry has to focus its attention to; while implementing its HSSP III.<sup>9</sup>

In this regard, the CAG office, decided to undertake the performance audit on availability of essential medicines and medical supplies in public health facilities in Tanzania focusing on demand forecasting and delays in distribution of medicines and medical supplies. Unlike the other areas, these areas have not been covered in depth by the previous audits or assessments.

### **1.3 Design of the audit**

#### **1.3.1 Audit Objective**

The overall objective of the audit was to undertake the performance audit on availability of essential medicines and medical supplies in public health facilities in Tanzania by MSD. The specific objectives of the audit were to:

1. Assess whether MSD ensures that the demand forecasting process of essential medicine and medical supplies is done effectively;
2. Assess whether MSD effectively distribute essential medicines and medical supplies as well as ensures timely availability of medicines and medical supplies in health facilities in Tanzania; and
3. Assess whether the MoHSW effectively monitors and evaluates availability of essential medicines and medical supplies in health facilities.

#### **1.3.2 Scope of the audit**

The audit mainly focused on demand forecasting, processing and delivery of orders as well as monitoring and evaluation of supply chain of Essential

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<sup>9</sup> MoHSW: MTR\_HSSP III 2009-2015 Pharmaceutical Services (2013)

Medicines and Medical Supplies (EMMS). The Ministry of Health and Social Welfare (MoHSW) through Pharmaceutical Services Section (PSS) and Medical Stores Department (MSD) were the main audited entities.

Similarly, Local Government Authorities (LGAs) were covered. In the LGAs the audit focused on Health facilities (Health Centers and Dispensaries) and District hospitals because they are part of Primary Health Care System which provides the wide coverage<sup>10</sup> of health service in the community compared to Regional and Referral Hospitals. Improving the performance of this area is likely to have a huge impact to the large population.

The audit covered a period of three financial years starting from 2010/2011 to 2012/2013. The reason for selecting this period of time is to enable the audit team get a comprehensive picture on the overall trend on the performance of MSD and MoHSW in the supply chain.

### 1.3.3 Methods used for the audit

The audit team used interviews<sup>11</sup> and documentary review to collect data for the audit.

The audit team selected seven out of nine MSD zones during the audit. The seven zones were purposefully selected. The criteria for selecting these zones include geographical coverage and the period in which the zone offices used Direct Delivery<sup>12</sup>. The reason for applying the geographical coverage was to get a wide coverage of geographical representation of MSD offices in the country.

The reason for using direct delivery criteria was to make a comparison of the performance concerning distribution of essential medicine and medical supplies between those zones which initiated the direct delivery approach

<sup>10</sup> According to PHDSP (MAMM), the primary health care covers Dispensaries, Health Centers and District Hospitals. In 2010, there were about 122 district hospitals and offices, 450 Health centers and 4,150 dispensaries

<sup>11</sup> The staff responsible or involved in carrying out the audited functions such as demand forecast, order processing and delivery as well as monitoring and evaluation of supply of EMMS was selected for interviews.

<sup>12</sup> Direct delivery refers to the MSD zonal offices delivering the medicines and medical supplies to health facilities and hospitals

and those which applied it later<sup>13</sup>. The MSD Zonal offices and LGAs selected for assessment are summarized in Table 1.1;

**Table 1.1: MSD zonal offices, regions and LGAs visited by the audit team**

S/n	Zonal Offices	Region	LGA
1.	Iringa	Ruvuma	Tunduru
2.	Tanga	Tanga	Muheza
3.	Dodoma	Singida	Iramba
4.	Mwanza	Mara	Tarime
5.	Tabora	Kigoma	Kibondo
6.	Mtwara	Lindi	Lindi Urban
7.	Dar es Salaam	Dar es Salaam	Mkuranga

Source: Auditors analysis 2013

In each of the seven zones one LGA was randomly selected. In each LGA/district one district hospital, two health centers and five dispensaries were purposively selected based on the distance from Zonal warehouse.

#### 1.4 Assessment criteria

The criteria for assessing the performance of MSD in forecasting demand, processing, delivery and fulfillment of orders were extracted from the Medical Store Department Act No. 13 of 1993, best practices and other internal MSD's standard operating procedures. The criteria for assessing the MoHSW were extracted from HSSP III, National Health Policy 2003, MoHSW In-depth Assessment Report and ILS Manual (Appendix 2).

The criteria for answering the three audit questions were divided into three categories namely demand forecast, order processing and delivery as well as monitoring and evaluation of supply chain system of EMMS.

#### *Demand Forecast*

<sup>13</sup> The two different supply chain systems used by MSD which in the scope of the audit i.e. indirect and direct delivery systems have no effects on demand forecast and order processing procedures..

The Medical Stores Act No. 13 of 1993 Section 4 (2) e requires MSD to monitor requirements and distribution of the approved drugs and other medical supplies in public health services and to take or cause to be taken any necessary remedial measures. Therefore, MSD needs to have sound practice to determine the needs of all health facilities in terms of quantity, type and time of delivery of such needs so as to make effective procurement and delivery.

Furthermore, MSD has to comply effectively with all procedures for conducting demand forecast during planning process and execution based on consumption data methods as required by MSD Standard Operating Procedure for Supply and Demand Planning Process. **SOP Ref INV-SOP-01**

### *Order processing and delivery*

The Medical Stores Act No. 13 of 1993 Section 4 (2) (a) requires MSD to develop, maintain and manage an efficient and cost-effective system of procurement, storage and distribution of such approved drugs and other medical supplies required for use by the public health services. Health facilities under ILS systems are required to submit their requests using R&R forms via LGAs to the respective MSD Zonal Office in a time indicated in ILS manual of 2012<sup>14</sup>.

MSD upon receipt of orders from health facilities need to ensure order picking process is effectively and efficiently performed and dispatched to customers with a high degree of accuracy and properly documented to maintain an audit trail<sup>15</sup>.

According to the MSD Client Service Charter of 2013, the MSD Central store is required to deliver EMMS within 14 working days to MSD Zonal offices since the day of placing an order. MSD Zonal stores are required to process and deliver the medicines and medical supplies to the health facilities under Integrated Logic System on the third week of the third month of the quarter which facility is entitled to place an order. **(Source: ILS Manual July 2012)**

<sup>14</sup> not later than the third week of the first month in the quarter which facility is entitled to place an order

<sup>15</sup> Refer MSD's SOP for order fulfillment and dispatch procedures

## *Monitoring and evaluation*

According to the National Health Policy of October, 2003, MoHSW has to ensure that there is a comprehensive and clearly defined operational system of monitoring and evaluation on performance of the Sector.

### **1.5 Data validation process**

The Ministry of Health and Social Welfare (MoHSW) and Medical Stores Department (MSD) were given an opportunity to go through the draft report and comment on the figures and the information being presented. The Ministry and MSD confirmed on the accuracy of the figures and the information being presented in the report. Also, responses from the MoHSW and MSD on their comments and actions to be taken on the recommendations given were appended (Appendices 1 and 2).

Furthermore, the information was crosschecked and discussed with experts in the field of Supply Chain of health commodities to ensure the validation of the information obtained.

### **1.6 Audit Standards used**

The audit was done in accordance with INTOSAI standards. These standards require that the auditing is planned and performed in order to obtain sufficient and appropriate evidence to provide a reasonable basis for the findings and conclusions based on audit objectives. It is believed that according to the audit objectives, the evidence obtained provides a reasonable basis for the findings and conclusions reached.

### **1.7 Structure of the audit report**

The remaining part of the audit report covers the following: Chapter two gives an account of system description of the audit area which covers the demand forecast and distribution system of medicines and medical supplies, legal framework and key stakeholders.

Chapters three, four and five present the audit findings in line with the three specific audit objectives. Chapter six provides conclusions of the audit and Chapter seven presents recommendations of the audit.

## CHAPTER TWO

### SYSTEM FOR DEMAND FORECASTING AND DISTRIBUTION OF ESSENTIAL MEDICINES AND MEDICAL SUPPLIES

#### 2.1 Introduction

This chapter presents background of the system for demand forecasting and distribution of essential medicines and medical supplies in Tanzania Mainland. It provides details for the legislation, policies, strategies and key players with their role and responsibilities. It also presents procedure for funding, forecasting of demand and distribution of essential medicines and medical supplies (EMMS).

#### 2.2 Policy and Legal Framework

##### 2.2.1 Policies

###### National Health Policy of 2003

According to the National Health policy of 2003, one of the policy objectives is to ensure availability of drugs<sup>16</sup> reagents and medical supplies. The overall objective of the policy, is to make available to all Tanzanians at all times the essential pharmaceutical products, medical supplies and equipment which are of high quality, proven effectiveness, acceptable standard and safety levels that individual and the community can afford.

###### The Tanzania Drug Policy of 1991

The overall objective of the existing Tanzania Drug Policy of 1991 is to make available to all Tanzanians ‘essential pharmaceutical products, which are of good quality, proven effectiveness and acceptable safety at a price that the individual and the community can afford’. The policy insists that essential medicines should always be available to those who need them and should be distributed in the most cost-effective manner.

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<sup>16</sup> The term “drug” has been interchangeably used here however, it has the same meaning as medicines to mean any chemical substance that has a known biological effect on humans or other animals.

## 2.3 Key Stakeholders on distribution of medicines and medical supplies

The following are the main stakeholders and their responsibilities in the supply chain, categorized into national and local level stakeholders as well as other key stakeholders:

### 2.3.1 Stakeholders at National level

#### The Ministry of Health and Social Welfare (MoHSW)

The Ministry of Health and Social Welfare is responsible for formulating policies and strategies and takes the lead in resource mobilization for implementation of health policy in the Country. According to the National Health Policy of 2003, the Ministry has to ensure availability of drugs, reagents and medical supplies and reliable health infrastructure.

The Ministry is also responsible for ensuring that there is a comprehensive and clearly defined operational system of monitoring and evaluation on performance of the Health Sector. Among the parameters of MoHSW in Monitoring and Evaluation focuses on the distribution of essential drugs, supplies and equipment.

Therefore, the Pharmaceuticals Services Section (PSS) which is under the MoHSW is responsible for coordinating, monitoring and evaluating national pharmaceuticals and hospitals supplies requirements. The MoHSW has also developed the “Integrated Logistic System” Manual to guide the procedures for distribution of EMMS in health facilities in the country. Equally, among the key strategy guiding the Ministry in implementation of the Health and Drug policies is the Health Sector Strategic Plan III as elaborated below.

#### *Health Sector Strategic Plan III (HSSP III) July 2009-June 2015)*

The Health Sector Strategic plan III is the crosscutting strategic plan for health sector in Tanzania for the period of July 2009-June 2015. It provides the overview of the priority strategic directions across the sector<sup>17</sup>.

<sup>17</sup> The Health Sector Strategic Plan has three components which are district health services, secondary and tertiary hospital services and central support systems

In HSSP III the MoHSW committed itself to prioritize the adequate and timely disbursement of financial resources for provision of essential medicines and medical supplies at all levels according to drug allocation formula in place. It will ensure the constant and adequate availability of pharmaceuticals and medical supplies in acceptable quality in the supply chain system for public health facilities. Also the Ministry committed itself to improve monitoring, evaluation and operational research in medicines supply and utilization.

Among the performance indicators and the expected results for the strategic objectives for HSSP III include timely disbursement of funds for medicines and medical supplies, competence in health facilities' forecasting, reduction of lead time between order and delivery of medicines and medical supplies to the district. Also other expected results of the Ministry is to outline the strategy for comprehensive and integrated monitoring and evaluation and formulation of health sector monitoring framework.

The other major government undertaking in health sector is the introduction of Primary Health Services Development Programme (PHSDP) which covers year 2007-2017. The PHSDP is linked with the Health Sector Strategic Plan III and aim at strengthening the district health services component which is the second priority component within the Health Sector Strategic Plan III.

### *The Integrated Logistics Management System (ILS)*

The Integrated Logistics Management System (ILS) Manual is the document which guides the health facilities on how to implement the ILS in ensuring the distribution of medicines and medical supplies in the country operate efficiently. The manual gives direction and responsibilities of each player in the system on how to place orders and reporting the consumption. Among the key players include the MoHSW, MSD and LGAs, Health Facilities and their respective committees. Also the Manual provides the controls on how to receive the delivery posting to relevant ledgers and physical counting of stock available.

Furthermore the MoHSW has introduced the ILS Gateway which uses the mobile phones where by the official in the health facilities send short

messages to this system. The ILS Gateway system enables the Ministry to know status of order submission to MSD, stock available in the health facilities (for only 20 selected items) and delivery of order requested. This helps the MoHSW to make follow up on availability of medicine in health facilities.

### Medical Stores Department (MSD)

The Medical Stores Department (MSD) is an autonomous department of the Ministry of Health and Social Welfare established by the Parliament Act No. 13 of 1993. According to Section 4 of the MSD Act No. 13 of 1993, MDS's functions include to;

- Develop, maintain and manage an efficient and cost-effective system of procurement, storage and distribution of such approved drugs and other medical supplies required for use by the public health services as minister may from time to time approve.
- Monitor the requirements and distribution of approved drugs and other medical supplies in public health services and to take or cause to be taken any necessary remedial measures.
- Ensure the availability in time of the approved supplies of the drugs and other medical supplies within the public health system.

### *MSD Medium Term Strategic Plan (MTSP)*

In order to implement its roles and functions, MDS had Medium Strategic Plan running from 2007-2013. Equally, in November 2013 MSD came up with the new Medium Term Strategic plan which covered the period of six years starting from 2014 -2020.

However, during the course of audit, MSD was mainly guided by its Medium Term Strategic Plan of 2006-2012<sup>18</sup>. Among the strategic objectives of this strategic plan included;

<sup>18</sup> The MTSP was extended up to financial year ended 2013 when the new MTSP was introduced, which covers the period of 2014-2020.

- Improve efficiency, shorten lead times, and increase flexibility by strengthening and improving the existing operation and by bringing MSD closer to the existing clients
- Through competitive pricing, improved stock levels and improved service delivery and communication MSD will automatically be more attractive for free funds (cost sharing revenues) and non-budget health facilities

The new Medium Term Strategic plan which covers the period of six years starting from 2014 -2020 has ten strategic objectives which among them there is improve service delivery, use of technology and performance based culture. This strategic plan builds on the previous strategic plan of 2006-2012 and has no impact in this audit.

### *Products Offered*

The supply chain of MSD comprised of three main products namely; essential medicines, product related to vertical programmes<sup>19</sup> and special products with 850, 200 and 2000 lines of items respectively. The guiding principles for the supply of these products include National Essential Medicine List, Standard Treatment Guidelines and the Tanzania Food, Drugs and Cosmetics Act No.1.of 2003

### *Human resources*

The total number of staff of MSD up to August 2013 was 406 which were available in five directorates. The directorate of zonal operation which dealt direct with processing and distribution EMMS had nine zones with a total of 203 staff. The breakdown of the number of staff at each zone's office and number of facilities involved is as shown in the Table 2.1 below;

<sup>19</sup> These are specific arrangements to procure, store or distribute drugs and/or medical supplies on behalf of third parties.

**Table 2.1: The Staffing level at MSD Zonal Offices in relation to serviced HFs**

Zone	Dsm	Iringa	Mbeya	Moshi	Mwanza	Mtwara	Tabora	Tanga	Dodoma
No. of Staff	26	20	18	23	31	24	23	18	20
No. of HFs	554	614	534	572	1197	457	435	258	496
Ratio of HFs per staff	21	31	30	25	39	19	19	14	25

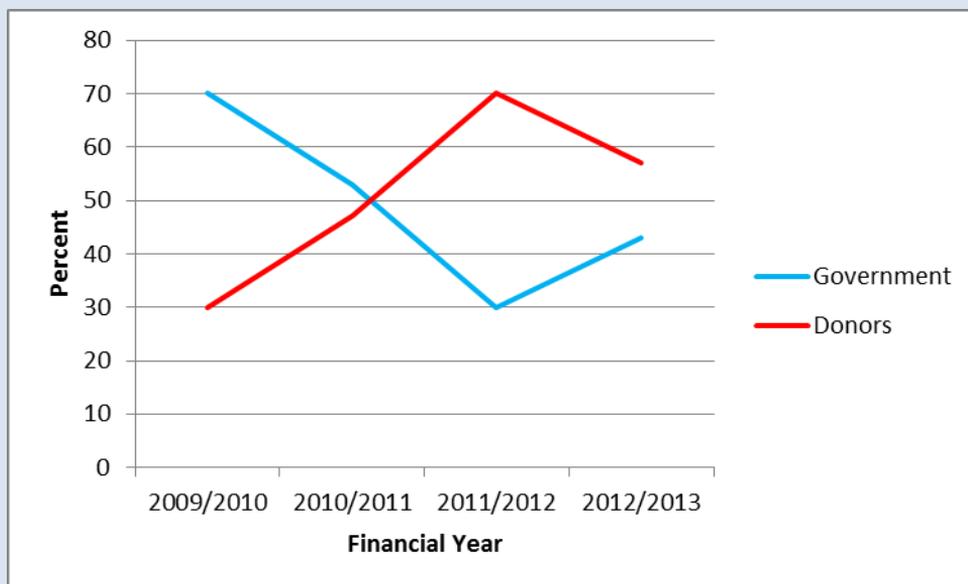
**Source:** MSD's Medium Term Strategic Plan 2014- 2020

### *Financial Resources*

According to the MSD Act No. 13 of 1993, the department mainly depends on the following sources of funds in the procurement and distribution of medicine and medical supplies;

- Monies that may be voted by Parliament
- Grants from any source within or outside the United Republic of Tanzania
- Proceeds from the sales of approved drugs and other medical supplies distributed by the Department;

**Figure 2.1: Percentage of funds that MSD received from the Government and Donors in the financial years 2009/2010 to 2012/2013**



Source: MoHSW Health Sector Performance Profile 2013

Figure 2.1 shows percentage of funds that MSD received from the Government and donors for procurement of EMMS in the financial years 2009/2010 to 2012/2013. According to the figure 2.1, there has been an increase in percentage of funds received from Donors as compared to the Government. The Government contribution to the total has actually dropped over the time period from 70 to 43 percent. In a period of four years the mean contribution from the government has been 31 billion while donors contributed an average of 38 billion in the same period.

### 2.3.2 Stakeholders at Local level

#### Local Government Authorities

In regarding to the supply chain LGAs through District Pharmacist are responsible for preparing the annual forecast of medicines and medical

supplies and submit it to the respective MSD Zone office. Also LGAs are responsible for ensuring health facilities prepare and submit their orders timely to them. Upon receipt of the orders, LGAs compile them and send them to MSD Zone office in a required time frame set. In some Zones, LGAs were responsible for distributing deliveries to health facilities<sup>20</sup>.

## Health Facilities

Health facilities through District Pharmacists order medicines and medical supplies from MSD Zonal offices. They have a great influence on the supply chain due to the role they play to enhance accuracy in forecasting their needs as well as timely preparations and submission of their orders to MSD.

### 2.3.3 Other Stakeholders

Other stakeholders who work closely with the government include Ministry of Finance, Development Partners, Civil Society Organisations and Citizens.

The Ministry of Finance is responsible for financing MSD operations via MoHSW. After the Parliament has approved the National budget which includes the budget for medical supplies for all public health facilities under the MoHSW, the MOF disburses the actual funds against the approved budget to MSD through the MoHSW.

Development Partners (DP) provide technical and financial support such as institutional capacity building under the coordination of the Ministry of Health and Social Welfare (MoHSW). Some of the key development partners include World Health Organization (WHO), Danish International Development Agency (DANIDA) and United States Agency for International Development (USAID) and the Global Fund. The Civil Society Organizations conduct various surveys and studies in order to ensure the objectives of government in implementation of the health policy in relation to availability of essential medicines and medical supplies are attained.

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<sup>20</sup> Since 2013/14 the MSD make direct delivery to health facilities. LGAs did not deliver any medicines to health facilities.

Citizens are the beneficiaries of the drugs and medical supplies distributed by MSD to different health facilities in Tanzania. The absence of drugs and medical supplies pose the risk of deterioration of the citizen's health and declining productivity which may hamper the social and economic well-being of the society and of the nation in general.

## 2.4 Demand Forecasting and Distribution of EMMS

### 2.4.1 Demand Forecasting

Demand forecasting exercise is a very crucial exercise for determination and quantification of the needs which form the basis for preparing supply and procurement plans of medicines and medical supplies.

#### *Demand forecasting process*

The demand forecasting process starts in March every year. During that time the district pharmacist compiles the district demand forecast by taking into account the consumption of medicines from all the health facilities within the district/LGA. Then, the DP takes the compiled list to Zonal Warehouse Manager, who receives and reviews the forecasts reports from all the LGAs serviced in the particular zone and forward them to Demand Planning Manager at the MSD HQ.

Upon receipt of the forecast reports from Zonal Warehouse Managers in all the 9 MSD zones, the Demand Planning Manager conducts a final review of the reports before submitting them to the MSD Supply Planning Manager. Finally, the Supply Planning Manager approves the forecast reports and submits them to the Procurement Management Unit while preparing the supply schedules ready for implementation.

In summary, the demand forecast process has basically two outputs. First, there are forecast reports which are produced by District Pharmacists, Warehouse Managers and Demand Planning Manager. Second, there is a supply schedule which is produced by the Supply Planning Manager for implementation of the produced forecasts.

### 2.4.2 Distribution of Essential Medicine and Medical Supplies

The distribution system of medicine and medical supplies in primary health care involve MSD Central Store, MSD Zonal offices and LGAs which involve

Health facilities. This system has been broken down into sub systems namely ordering, processing and delivery of orders to health facilities.

### *Ordering procedures at different levels*

The ordering procedures are divided into two levels namely; the central and Zonal levels. At the central level, the nine MSD zonal offices are required to order medicines and medical supplies from the Central Store twice in a month.

At Zonal level, MSD Zonal office deals with health facilities through LGAs. The health facilities through LGAs order their needs through LGA under Integrated Logistic System (ILS) system. The health facilities place their orders using Report and Request forms (R&R). The District Pharmacist review the R&R filled by facilities and compile them and send to the MSD Zonal Offices. The facilities in the LGAs are grouped into three groups, i.e. group A, B and C where by each group has its own cycle of ordering. The LGAs are given 3 weeks to make sure the orders are prepared and submitted to MSD zonal offices. The aim of this arrangement is to reduce the work load to MSD Zonal stores.

For the case of LGAs' hospitals, they are allowed to purchase from the MSD Zonal Stores. The hospitals have unlimited right of making direct purchases from MSD Zonal stores whenever needs arise.

At central level MSD zonal manager with help of warehousing officers are responsible in placing the orders while at Zonal level the District Pharmacist with the help of incharges of health facilities are responsible in this regard.

### *Order Processing and delivery*

Order processing and delivery is done at two levels namely central and zonal levels. At the Central level the MSD central store receives orders from MSD zones offices. Then the Central store is required to process and deliver the orders places by the MSD Zonal Offices within 14 days since the day they received the orders.

At Zonal level, the MSD Zonal offices received orders from health facilities. The processing of orders received from health facilities are dealt with based on the ILS ordering cycles. Then the zonal offices process and deliver the

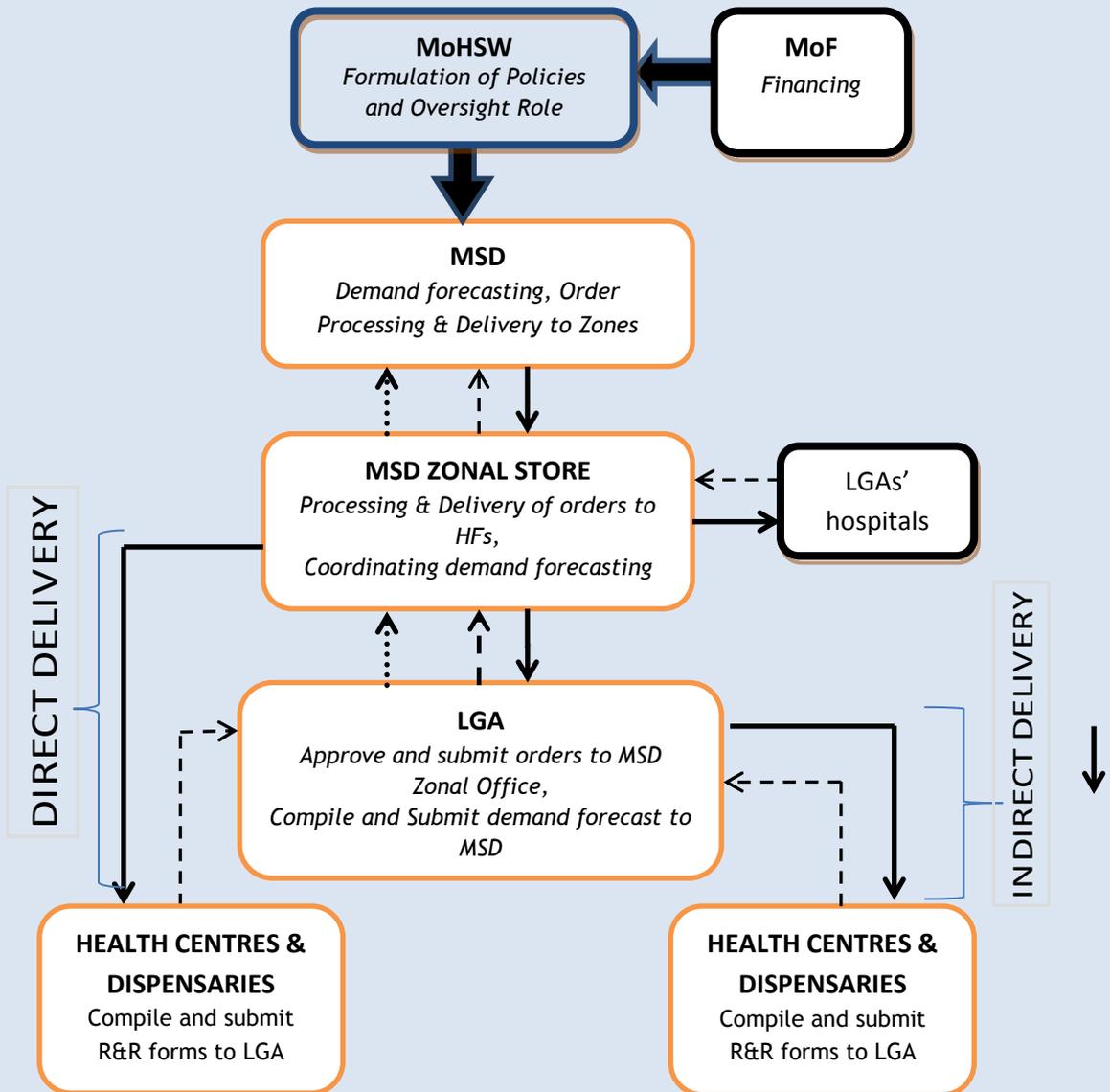
orders received from health facilities in 8 weeks' time (equivalent to two month).

It should be noted that, before 2012/2013, MSD Zonal offices were delivering packages to the LGAs where by the LGAs deliver the same packages to health facilities with the exception of few zones such as Tanga which was in the pilot study of Direct Delivery of EMMS. Anyhow, since the beginning of the 2012/2013, the MSD has rolled out the direct delivery system which requires the MSD Zones to deliver the packages direct to the health facilities from their Zonal Warehouses for the purpose of improving efficiency including accuracy of orders.

Delivery of EMMS at the Central store is done through a fleet of trucks operating from Dar es Salaam to zones every two weeks while at Zonal level each MSD Zonal Office has its fleet of vehicles which deliver EMMS from MSD Zonal Offices to health facilities. For the case of hospitals, normally they use their own means of transport to deliver their medicines and medical supplies from MSD zonal stores.

At central level sales, warehousing and transport managers are responsible for order processing and delivery of EMMS to the MSD zones while at the zonal level Zonal manager, sales, warehousing and transport officer are responsible for order processing and delivery. The major issues checked in this process are accuracy of the orders, availability of fund in the account of the respective client placing the order, accurate filling and dispatch of orders as well as timely delivery. The outputs of whole process are the deliveries made.

Figure 2.2: System graph for demand forecasting and distribution of essential medicines and medical supplies



Key	Meaning
- - - ->	Flow of Orders
→	Flow of deliveries
.....>	Flow of demand forecast information
➡	Financing

Source: Adopted from MoHSW

## 2.5 Monitoring and Evaluation of supply chain activities

The MoHSW is responsible for monitoring and evaluation of the performance of the supply chain of MSD. The Ministry through PSS is required to ensure the timely availability of medicines and medical supplies to MSD. The Ministry plans and conducts various monitoring and evaluation activities including drug tracking and supervision. The HMIS, ILS gateway have been taken as initiatives to strengthening monitoring and evaluation activities.

The effectiveness of inputs, processes, outcomes and their impact on the health system are measured by indicators from the Health Sector Strategic Plan III. There about 46 health sector performance indicators whereby one of the indicators among these focuses on pharmaceutical issues.

The key indicators which have been stated in the HSSP III include; Availability of National medicine policy, disbursement of funds for medicines and medical supplies, availability of tracer medicines in health facilities and lead time between district orders and delivery of medicines and medical supplies to districts. For effective monitoring system these indicators need to be used by various divisions and units in the MoHSW especially the PSS because they have a major role in measuring the supply chain performance.

The tools used to collect data for monitoring depend on the set of indicators set out by the MoHSW and MSD. Also there are various sources in place from which data is collected for assessing the reported indicators to enable the necessary action to be taken. However, in the MoHSW, the major tools for collecting data relating to monitoring of distribution of medicines and medical supplies are HMIS tools, ILS gateway and Drug tracking conducted by PSS.

At MSD level, most of the indicators are derived from the Medium Term Strategic plan. Most the indicators related to the distribution of medicines and medical supplies stated in the MSD Medium Term Strategic Plan 2006-2012, focus on the orders fulfillment rate form Central Store to Zones and from zones to health facilities. Also the issue of fleet utilization rate and the disbursement of funds are among the areas covered in the MSD strategic plan. Nonetheless, in the year 2012/2013, MSD made some efforts in developing indicators to measure the assessment of demand forecast, order

processing and delivery.

According to the 2012/2013 MSD Quarterly Progress reports some of the indicators relating to demand forecast, order processing and delivery reported in performance assessment dashboard include; Number of meetings conducted for assessing customer annual stock demand forecast compiled and submitted by 28th February reviewed on monthly and quarterly basis up to June, 2013, Stock availability at all zonal stores locations as per forecasted requirement up to June, 2013, Number of days for replenishment of order, Adherence to 14 days zonal order replenishment cycle up to 30th June, 2013, Number of days for zonal order processing, Zonal replenishment orders processed within 5 working days up to June, 2013.

## CHAPTER THREE

### DEMAND FORECASTING OF ESSENTIAL MEDICINES AND MEDICAL SUPPLIES

#### 3.1 Introduction

In this chapter, we present audit findings that provide answers to the audit questions regarding demand forecast practices in ensuring the more realistic forecast is made for smooth operation of the supply chain system for essential medicines and medical supplies in health facilities in Tanzania.

#### 3.2 Planning for Demand Forecasting

Planning process is the first basic managerial function that organizations must address. The planning process for the demand forecast is done at all levels within the supply chain of health commodities in the country. At MSD planning for the demand forecast activity is coordinated by the Demand Planning Unit which circulates the information to all MSD Zones to prepare and submit demand forecast reports to the unit for consolidation. MSD is required to use consumption data in developing demand forecast hence the MSD zones needs to ensure that they have plan for collecting the consumption data from LGAs.

In reviewing MSD medium term strategic plan for 2006-2012 the audit team found that issues of improving demand forecast did not feature in the operational objectives and activities of MSD. However, with the new Strategic Plan 2014-2020 we found that the issues of improving demand forecasts were featured. The audit team reviewed the annual business plans covering financial year 2010-2013 while the audit was undertaken and found out that there were no clear actions taken by MSD for improving demand forecast starting from health facilities. However, with the new Business Plan 2014/15 there have been some actions to improve the demand forecast including the launching of the Guide on Forecasting and Managing Demand Levels in October 2014 in an effort to address the levels of accuracy in forecasts.

Likewise, in reviewing the MSD Annual Business Plan for financial year 2014/2015 the audit team noted that, with the introduction of balance scorecard framework, the demand planning as a section and MSD zones

office( treated as Business strategic unit) had both balance score card and business plan matrix which supported the strategic objective of institution.

In analyzing the MSD Annual Business Plan of 2013/2014 the audit team found that several managers' targets and activities relating to demand forecast such as improving accuracy of forecast had been covered in the Business Plan matrix of Demand Planning Section. However, in reviewing Business Plan matrix of MSD zones offices only three zones out of nine zones had incorporated the issue of forecast activities and targets in their Business plan matrix.

Furthermore, the LGAs visited did not give the planning of demand forecast activity enough weight. This is because it was done as the stand-alone activity and not linked with critical process of preparation of Council Comprehensive Health Plan (CCHP) which in most cases has a similar nature in relation with planning and conducting demand forecast. One of the reasons of not using the opportunity was due to the fact that the CCHP Guideline did not cover issues of demand forecast in the format which was required by MSD.

The format provided guidance on how health facilities could develop their budget for EMMS by considering previous consumption. Hence, demand forecast in LGAs was normally done by District Pharmacist with the support from in-charges of Health facilities without being discussed by CHMT as it was done with development of CCHP.

MSD did not use the opportunity of the already established systems such as planning process administered by PMORALG during budget formulation. MSD could benefit from the technical and administrative experience as well as resources in these systems.

### **3.3 Conducting and Submitting Demand Forecast Reports**

In conducting demanding forecast, the audit team found that MSD used proxy consumption data (sales data) rather than consumption data. However, the reason behind doing so as pointed out earlier was that the health facilities did not prioritize the exercise of submitting consumption data to MSD hence the consumption data submitted did not reflect the reality concerning actual EMMS used by Heath facilities.

The audit team noted that in MSD Zone offices the annual demand forecast was computed based on sales data (proxy consumption) made in previous year while at LGA consumption data of the previous year was used. Data collected from health facilities in the Zones were submitted to the Demand Planning Unit at MSD HQ for further analysis and computations. However, the Demand Planning section had started the system of monthly adjustment of the forecasted requirements from monthly forecast reports received from MSD zones so as to reflect the reality of the data submitted. Basically the data for adjusting were based on sales trend. Since the data from health facilities were not reliable, this proves that MSD rely on sales historical data than consumption data in determining their demand.

During interviews with warehousing officers in the seven visited zones the audit team confirmed that there was more sales data used than consumption data. This was because of the fact that sales data were found to be more reliable than the consumption data.

The audit team noted that for MSD to compile annual demand forecast report based on consumption data, reports from health facilities need to be submitted by LGAs to MSD Zonal offices on time for assessment of quality, analysis on and compilation, before being submitted to the Demand Planning Section at MSD HQ. However, the audit team noted that the Demand Planning Section had limited number of staff (only two staff) working in the section thus limiting efficiency in the section.

This had consequences on impairing the quality of reports produced by the Demand Planning Section due to the fact that a Demand Planner had to work on more than 160 reports from all LGAs plus 9 reports from the 9 MSD Zones per financial year. The audit team found that there are no clear directives on how the officers in MSD zones could deal with the data obtained from LGAs in terms of analysis and application.

The audit team found that the submitted forecasting reports from MSD zone offices to MSD HQ had lesser problems than those submitted by LGAs to Zones. It was revealed during interviews with Zonal managers and the warehousing officers from the five visited zones that, most of the LGAs did not submit or sometimes delayed to submit their forecast reports.

The audit team noted that in addressing these challenges, MSD introduced the process of collecting the data through Zonal Tracking Teams organized by MSD. During the workshops LGAs submitted their forecast reports. However, the quality of data and delays in submission of the reports continued to be a challenge.

### 3.4 Tools used for Demand forecast

MSD needs to have effective tools such as electronic tools which assist in the development of demand forecast reports from Health Facilities. In best practice, the tools are required to be embedded in the system used such as Orion or Epicor 9 in MSD or HMIS in the LGA level. However, the audit team found that the forecast data were collected from Health facilities/Dispensaries manually using HMIS<sup>21</sup> tools.

In the MSD Zone level the warehousing managers used excel templates that were designed to simplify the computation of quantity demanded. The rationale for using the templates was due to the fact that the templates had automatic formulas embedded in the sheets. Similar tools were used in the level of LGAs to compute demand.

These tools took into account the Average Monthly Consumption (AMC) of the Zone which was calculated by averaging up the last three months of the previous sales for each type of medicine. The adjusted consumption was obtained by taking actual consumption over the rate of reporting the percentage of that particular year if any, by adding up the (adjusted) projected program growth.

Then AMC was calculated by taking the sum of the adjusted/forecasted consumption over 365 times by  $365/12$ . The obtained AMC was then multiplied by twelve to obtain the Annual projected Consumption. The consolidated Annual Requirements from all zones were submitted to the quantification team. Apart from the supply planning data, fund availability was another key factor in determining the quantities to be procured.

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<sup>21</sup> Standard books provided by MoHSW to health facilities for collection of data related to health.

MSD zones used Epicor 9 platform in collecting information about the previous sales made. In the LGA level, the district pharmacist used HMIS tool (a manual form) to collect information about consumed quantities. In dispensaries and health centers, the R&R forms from the dispensaries were used to collect the information while in hospitals other tools like stores ledger were used.

### 3.5 Factors Considered in Demand forecast

Various factors should be considered in determination of demand depending on the nature of the supply chain. Some of the major factors that are considered at MSD in estimation of demand forecast included the service statistics in the health sector, morbidity data, demographic data and logistics data which utilizes consumption and proxy consumption data.

However, according to officials at MSD the mostly considered factors are logistical ones with the use of proxy consumption data. However, the use of proxy consumption data basing on sales data did not provide an accurate figure for demand forecasts. Moreover MSD made use of the data from other stakeholders who were able to use other accurate methodologies estimating the demand for some of the items particularly those that fall under vertical programs.

### 3.6 Reporting of Forecasted Needs

As noted earlier in this report that LGAs compile their demand estimations and forward them to the respective Zonal Managers who forward them to the DPU at the Central Office. The Demand Planning Unit at the Central office quantifies and approves the demand.

Then the demand forecasts are forwarded to the Supply Planning Manager who prepares the supply plan before submitting it to the Procurement Management Unit for preparation of tenders. However, there was no effective system to ensure that all the reports from the LGAs are submitted and are within time.

### 3.7 Analysis of Forecast Data

According to best practices, analysis of data at different levels involved in conducting demand forecast needs to be done in order to assess the

accuracy of the forecast data and apply the data in making various managerial decisions and improve from lessons learned. The audit team noted that apart from the analysis that was done in the MSD HQ by Demanding Planning Unit, there was no evidence of analysis conducted neither at MSD zones level nor the LGAs level.

During the audit, the audit team did analysis of the available data in order test the accuracy of demand forecast system at MSD Central level, by comparing the forecasts against the actual variables in procurement and sales made for the three financial years from 2010 to 2013. In doing so the audit team selected a sample of 15 items of EMMS. The selection criteria were based on the most common used items in Health facilities. The selected items were made in consultation with some staff at MSD and Health facilities before beginning of the audit. Findings are discussed under 3.7.1

### **3.7.1 Comparison between Demand Forecast and Procurement**

The audit team compared the quantities forecasted as denominator against the quantities procured in a period of three years from 2010/2011 to 2012/2013. The aim was to test whether the quantities forecasted were in line with the quantity procured. Results indicated that there were more cases of over forecasting of the medicines at the same time the quantities procured were less than the quantities forecasted for most of the items (Table 3.1).

**Table 3.1: Procurement cases<sup>22</sup> made in comparison to its respective forecasts for the selected 15 items of EMMS (2010-213)**

Categories	2010/2011	2011/2012	2012/2013	TOTAL
Total number of cases observed <sup>23</sup>	14	14	14	42
Cases of Under forecasting (Forecasts<Procurement)	4	5	0	9
Cases of Over forecasting (Forecasts>Procurement)	10	9	14	33
Tallied (Procurement=Forecasts)	0	0	0	0

**Source:** Forecast and Procurement Reports from MSD Central Store (2010-2013)

Table 3.1 shows analysis on quantity forecasted in relation to the quantity procured based on sample of selected lines of items from the list of essential medicines and medical supplies for the year 2010/2011-2012/2013. From table 3.1, out of the 42 cases observed, 33 cases (79%) had its items over forecasted and 9 cases (21%) had its items under forecasting. In general, the level of accuracy in forecasting has been low in comparison to the procured quantities.

The audit team noted that out of the 33 cases of over forecasting (under procurement) there were only two cases where the difference was within the range of 25 percent (equivalent to six (6) percent) (Appendix 4). The other 94 percent was under procurement cases with a deviation range of over 25 percent. A total of 18 cases (five in 2010/2011, six in 2011/12 and seven in 2012/13) were forecasted but nothing was procured in those respective years (Appendix 4).

<sup>22</sup> Procurement cases refers to the frequency of comparison made on quantity of procured against the forecasted for each 15 selected items of EMMS

<sup>23</sup> There were no data for one case, there for the total number of case analyzed is 14 instead of 15

Further analysis indicated that there were some cases of items that continued to remain un-procured in consecutive years despite of being forecasted in the particular financial year. For instance, Syringe Disposable with Needle 5cc which was highly demanded by Health Facilities remained un-procured for 2 consecutive years (2011/2012 and 2012/2013) despite of being forecasted.

However, in some few cases, the quantities procured were more than the quantities forecasted. For example in the financial year 2010/2011, the amount of Albendazole procured was 2 times the actual amount forecasted. In the same year the amount of Oral Rehydration Salts (ORS) procured was 3 times the actual amount that was forecasted.

### 3.7.2 Comparison between Forecast and Actual Sales

In normal circumstances the quantity forecasted needs to be in line with the quantity sold in a given financial year<sup>24</sup>. Logically, the small variance between the two convinces the audit team that the demand forecast was robust. The comparison between demand forecast as denominator against total sales made for the selected 15 items in the range of three financial years revealed that there were deviations between the quantities sold against the quantities forecasted.

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<sup>24</sup> In order for this comparison to reflect the reality; it is important to note that MSD mostly depend on sales data in computing demand forecast, therefore, logically what is forecasted and procured is expected to be sold if other factor remains constant.

**Table 3.2: Sales cases<sup>25</sup> made in comparison to its respective forecasts for the selected 15 items of EMMS in the three financial years 2010-213**

Categories	2010/2011	2011/2012	2012/2013	TOTAL
Total number of cases observed <sup>26</sup>	14	14	14	42
Cases of Under forecasting (Forecasts<Sales)	2	12	2	16
Cases of Over forecasting (Forecasts>Sales)	12	2	12	26
Tallied (Sales=Forecasts)	0	0	0	0

**Source:** Forecast and sales reports from MSD Central store 2010-2013

From table 3.2 it is shown that in the financial years 2010/2011 and 2012/2013 most of the medicines were under-sold. This reflects the fact that the items are highly over-forecasted and if procurement could have been done at the indicated level then there could have been a high risk of wasting these medicines.

The table further indicates that there were some other items which continued to be highly forecasted despite of being generally sold at lesser quantities.

Further analysis indicated that the difference between forecasted and the sold quantities ranged from the negative 96 to 100 percent (Appendix 3). There were 26 out of 42 sales cases (equivalent 62 percent) of sales made less than the forecasted quantities. Among the 26 cases, only 8 cases of sales deviated from the demand forecast within the range of 25 percent. Other 18 cases (equivalent to 69 percent) had their deviation above 25 percent of the demand forecasted quantity. This implies that there were over forecast of the demanded quantities for some items. The over forecast

<sup>25</sup> Sales cases refers to the frequency of comparison made on quantity of sold against the forecasted for each 15 selected items of EMMS.

<sup>26</sup> No data for one case, hence 14 instead of 15 cases were analyzed

of demand hinders the optimal use of the available working capital and sometimes result into expiration of drugs (Table 3.3).

**Table 3.3: Value of expired EMMS for the period July 2012 to June 2014**

MSD Zone	Value of Expired Drugs (Million Tsh)
Dar es Salaam	576
Dodoma	19
Mbeya	216
Moshi	9
Mtwara	129
Mwanza	408
Tabora	15
Central Store	1,233
<b>TOTAL</b>	<b>2,605</b>

**Source:** MSD data extracted from Epicor 9 2012-2014.

The table 3.3 presents value of expired EMMS in seven MSD zones as well as the central store. According to data presented in the table, the problem of expiring EMMS varies across the zones irrespective of the MSD policy; First Expired First Out (FEFO). This implies that there is weakness in managing and implementing demand forecast process across the zones.

### 3.8 Factors Contributing to Weaknesses in Demand forecast

In reviewing the process of demand forecasting at MSD, the audit team identified several factors which contributed to the shortfalls in the forecasting process as explained hereunder;

#### i. Guidelines and procedures for conducting demand forecast

During the time of audit the team noted that there was no detailed guidelines for conducting demand forecast which showed all key procedures and responsibilities of all actors within and outside the MSD who form part of the demand forecast team or process. However, by October 2014 MSD launched the guideline on forecasting and managing demand levels which seemed to have addressed most of the shortfalls observed during the time of audit.

Furthermore during the time of audit the SOP that was available for demanding and supplying planning process was very limited in terms of information and the clarity of procedures. However, with the newly launched guideline on forecasting and most of the procedures have been clearly identified and spelt out. The newly launched manual provide adequate information on key factors such as planning of forecast, types of data to be collected, method and tools of collection, organizing and analyzing data. Likewise, the computation of forecast, assumptions to be made, quality control and reporting of the forecasted data has been addressed by the current manual on forecasting.

Apart from many actors involved from in the process of demand forecast, the team noted that there was no formal document such as MoU to facilitate coordination of the forecasting activities among the actors concerned particularly the LGA's. This posed a challenge to different actors involved in the forecast as the actors involved had different mandates and reporting channels e.g. health facilities, LGAs and Ministries.

During the time of audit the team found out that there was lack of guidance among staff at MSD zone and MSD HQ on how to use the data based from two different sources i.e. previous sales against consumption

which were collected using different data collection methods. This hampered the uses of data at the zonal level, quality of demand forecast developed by MSD and at the same time hindered the institutional memory in the further improving the exercise. However, with the current guidelines MSD has made use of the staff at MSD with the Zonal Tracking team which contains staff from the respective zone and HQ therefore the input data in demand forecasting can be traced from the Zonal level and the quality assurance has been addressed from the zone.

## **ii. Interventions in MSD's Supply Chain**

The audit team noted that there were some interventions that affected the level of accuracy of demand forecasts at MSD. These interventions included the donations of EMMS that the government received in the mid of financial year, and other directives from the MoHSW or other regulatory bodies.

For instance in the financial year 2010/11 to 2012/2013 the government prohibited the use of Syringe Disposable with needle 5cc despite of having been procured by MSD. This affected the level of accuracy in forecasts and sales figures. There were also donations in terms of medicines cargo that the government through MSD received that are channeled through MSD and they affect the forecasts and procurement plans of MSD to lower the accuracy levels.

## **iii. Inadequate enforcement to conduct and submit demand forecast reports**

Another factor contributing to weaknesses in demand forecast was inadequate enforcement of the process of need assessments within and outside MSD. During the audit, the audit team found that LGAs were neither liable for preparation nor submission of accurate forecast reports to MSD Zones. The audit team did not find any official document which directed health facilities on time frame for completing and submitting demand forecast reports to MSD zones.

Furthermore, the zones did not carry out analysis in anyway of the forecast reports that were prepared by the LGAs under them. They just collect and send them to MSD HQ. However, the audit team found that dispensaries and Health Centers did not conduct demand forecasting exercises at all.

Similarly, the audit team found that there was no mechanism neither at MSD nor at MoHSW for effective enforcement on obtaining reliable consumption data from HFs. Consequently, these led to some LGAs delay or not submit their forecast reports at all (Table 3.4).

**Table: 3.4 Submission of LGAs' Forecasting Reports to the MSD Zonal Managers for the three financial years 2010-2013**

Zone	Required number of forecast reports (2010/11-2012/13)	Actual number of reports submitted (2010/11-2012/13)	Percentage of reports not submitted(2010/11-2012/13)
Dar es salaam	30	3	90
Tanga	24	6	75
Mwanza	111	111	0
Tabora	30	30	0
Dodoma	33	0	100
Mtwara	42	0	100
Iringa	33	0	100
<b>TOTAL</b>	<b>303</b>	<b>150</b>	<b>50</b>

**Source:** Interview with visited Zonal Managers

Table 3.4 shows the extent of submission of reports by LGAs to MSD Zonal offices in the three financial years 2010/11 through 2012/2013 where by an average of 50% of required reports were not submitted to respective MSD Zonal Office. In this table Mwanza and Tabora were leading in percentage of reports submitted out of requirement followed by Tanga and Dar es salaam. From the table, Dodoma, Mtwara and Iringa did not submit a report at all.

During interviews with MSD Zonal and Warehouse officers from the seven visited zones, the audit team established that there was insufficient coordination between the planning and budgeting processes of LGAs and

MSD. The team also established that each part had its own budget process that had to come up with the same figure of demand of EMMS as supposed to be. MSD independently prepared the forecasts for medicines that include the demand of EMMS by the LGAs at the same time LGAs through CCHP guideline prepared the budget estimates that also included estimates for procurement of EMMS. This resulted into mismatch between the supply and demand at the LGAs that made orders from LGAs continue suffering from increase number of missing items.

#### iv. Non alignment between LGAs' planning and preparation of demand forecast process

In each financial year LGAs prepare the Council Comprehensive Health Plan (CCHP) based on the Council Comprehensive Health Plan Guidelines (CCHPG). In the CCHPG the issue of essential medicine and supplies had been given high priority. The guideline stipulated all procedures in planning and preparation of budget for essential medicines and medical supplies. Therefore, for LGAs to plan and budget properly it needed to determine its previous consumption. In doing so it was automatically preparing the demand forecasting.

Due to these facts these two activities were interrelated and could be aligned together. However, both activities were done separately and in different approaches and timing by CHMT members or District Pharmacist (DP) in case of demand forecasting. Neither MSD nor LGAs did align the two activities together.

CHMT which included DP as one of the members was effectively involved in the preparation of budget. This was not the case with DP, was in most cases noted preparing the demand forecast alone. Moreover, the exercise of developing CCHP plan was very familiar in LGAs and it went deep technical and financial assessment by the committees which involved MoHSW and PMORALG. Therefore it was a good idea for MSD to see how they could align these two activities for better result and cost saving. However, the practice had always been different; each activity was dealt as a separate entity.

#### v. **Over-reliance on sales data instead of consumption data**

Basically, MSD has been using sales data to compute the forecast figures to estimate the consumption for the next financial year<sup>27</sup>. However, the use of sales data from MSD Zonal Office had brought in the risk of under or over estimating the demand forecast figures. This is because it considered sales that they were made in the previous year without taking into account the missing items that were not supplied to their customers. Consequently, Zonal stores experienced stock out.

One of the reasons noted by audit team for MSD not using consumption data from health facilities was inadequate record-keeping in the usage of medicines in all health facilities visited except for Iramba district in Dodoma zone. Among the reason stated by most of health facilities visited was a problem of workload due to staff shortage in the health facilities. The audit team noted also that stock ledgers and patient register were not routinely maintained.

#### vi. **Budget limitation**

The audit team noted that the budget allocated for the MoHSW determined the amount of quantities to be procured by MSD and also affected the demand forecast. For example during the financial year 2012/13, the annual requirement for EMMS by Health facilities in the country was Tshs.198 billion. However, during financial year 2013/14 only 70 billion Tsh (35%) of the actual requirement<sup>28</sup> has been disbursed. This indeed hampered the capacity in procurement of EMMS.

#### vii. **Inadequate quality control mechanism in place to ensure the quality of demand forecasts**

In reviewing the whole process of demand forecasting the audit team found out that there was no evidence of quality control for the data used especially from the LGA level. For instance, the DP forecast was not scrutinized by CHMT members. Instead, the DMO approved the forecasts.

<sup>27</sup> MSD: Quality Assurance Manual section 4.1

<sup>28</sup> MSD Board Paper No.5. Preparation of MSD Working Capital Re-financing

Similarly, no quality review was conducted on the Forecast reports submitted to the Zonal offices.

As indicated earlier in this report that, there was only one officer dealing with demand forecast at MSD Zone office. This made very difficult for the officer to assess quality of more than 160 reports submitted to the Zone Office. Lack of effective quality control mechanism on data collected also affected the forecasting accuracy.

**viii. Inadequate knowledge among staff in preparing and usage of demand forecast reports at lower level**

The audit team noted that there were no adequate knowledge among staff in the LGAs in preparing and use of demand forecast reports. In all LGAs visited the audit team found that the LGAs had a tendency of preparing the report and forward it to the MSD Zones office for compliance. Most of staff in LGAs had limited culture of using demand forecast in decision making for improving in various areas such as planning for procurement of medicine. As a consequence some medicines in Health Facilities were out of stock and others had expired.

The audit team found that there was a lack of staff training from MSD and MoHSW on how to develop and use demand forecast reports in operating health facilities' activities. Also the team noted that there was neither feedback nor action taken on whatever was reported by health facilities in relation to demand forecast from LGAs, MSD and MoHSW.

This was confirmed during interviews with the District Pharmacists and In-Charge of Health Facilities from the visited LGAs. The DP and in charge of health facilities claimed that they did not see the importance of preparing demand forecasts at the same time the problem of order fulfillment from MSD still persisted.

**CHAPTER FOUR****ORDERING, PROCESSING AND DELIVERY OF ESSENTIAL MEDICINES AND MEDICAL SUPPLIES****4.1 Introduction**

In this chapter, we present and discuss findings that provide answers to the audit questions regarding the order processing and delivery from MSD Central Store to Zonal Stores up to the Health facilities.

The aim is to ascertain whether or not MSD Central Store processes and delivers orders received from the Zonal stores effectively and the Zonal stores delivers the orders received from the health facilities so as to ensure timely availability of essential medicine and medical supplies in the communities.

**4.2 Ordering, Processing and Delivery at different levels.**

The ordering processing and delivery was done by MSD Central and MSD Zonal Stores. The MSD Zonal Stores were required to place orders to the central store twice per month. The Central Store processes the orders and delivers them to the 9 zones for sales to Health Facilities. The Zonal Stores had two types of sales to their clients. There are “Normal sales” that concerns all types of hospitals within the zone and the “ILS sales” that concern the Health Centers and Dispensaries within the zone.

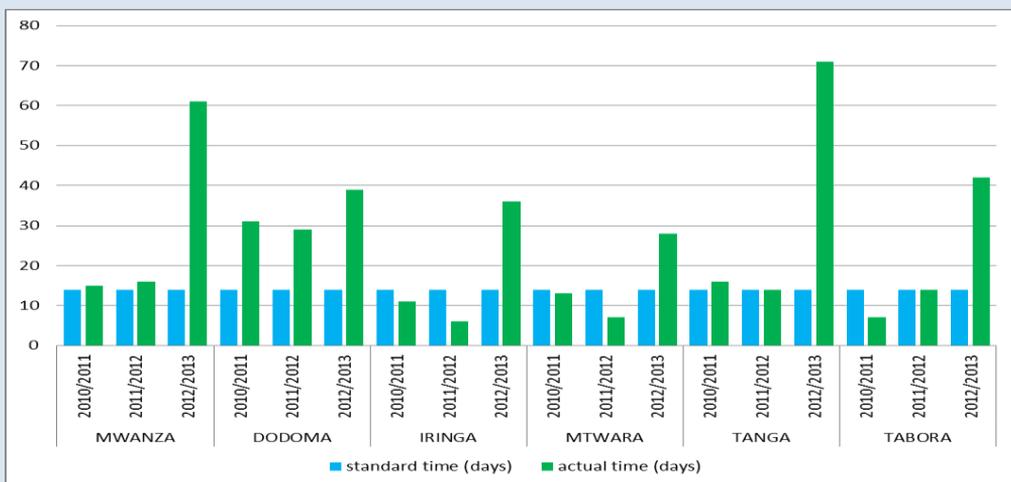
Under Normal Sales, Hospitals could place orders at any time when need arose but Health Centers and Dispensaries under ILS were grouped into delivery cycles, thus they could place four orders per year each one order after three months in the respective cycle. The delivery of orders by MSD to Health Facilities was also done in two systems; the Direct Delivery System and the Indirect Delivery System. However, MSD was discontinuing the Indirect Delivery System where MSD used to deliver their medicine to the DMO who was then tasked to distribute the medicines to the respective Health Centers and Dispensaries as they had ordered in their R&R forms.

### 4.2.1 Ordering, Processing and Delivery of EMMS between MSD Central and Zonal Stores.

In assessing the level of efficiency in ordering, processing and delivery of orders between the Central Store and Zones, the audit team reviewed various documents that contain information regarding orders, processing and delivery times for six MSD Zonal offices. According to MSD’s Standard Operating Procedures, the standard time for processing and delivery of order from Central store to Zonal store is a maximum of 14 days.

In reviewing the documents, the audit randomly selected a total of 216 orders (1 order for each month which sums up to 12 orders per year for a period of three years for six zones). Average<sup>29</sup> processing and delivery time was calculated to compare it with the standard time of 14 days and actual time taken by the central store to process and deliver the orders to selected MSD zonal offices (Figure 4.1).

**Figure 4.1:** Comparison between the standard processing and delivery time and the actual processing and delivery time of the orders from Central Store to Zones



Source: Stock Ledgers, Zonal Transfer In and Out from MSD (2010-2013)

<sup>29</sup>The computation of Average Processing and Delivery time at each zone was obtained by summing up the total time taken to process and deliver 12 selected orders from the each zone and divide the total sum by 12 orders.

Figure 4.1 shows the comparison between the standard order processing time and the average actual order processing time taken by the Central Store to process and deliver orders to the six analyzed zones. The figure indicates the actual average processing and delivery time per year varying from a minimum of 6 days at Iringa Zone during the financial year 2011/2012 to a maximum of 71 days at Tanga Zone in the financial year 2012/2013.

In comparison to the standard time of 14 days as the maximum time allowed for processing and delivering the orders to Zones it can be observed that most of the orders have been delivered out of time. Out of the 18 cases observed only 7 (39%) fell within the standard processing time of 14 days or less while 11 (61%) cases had indicated the presence of delays in delivery of orders to zones.

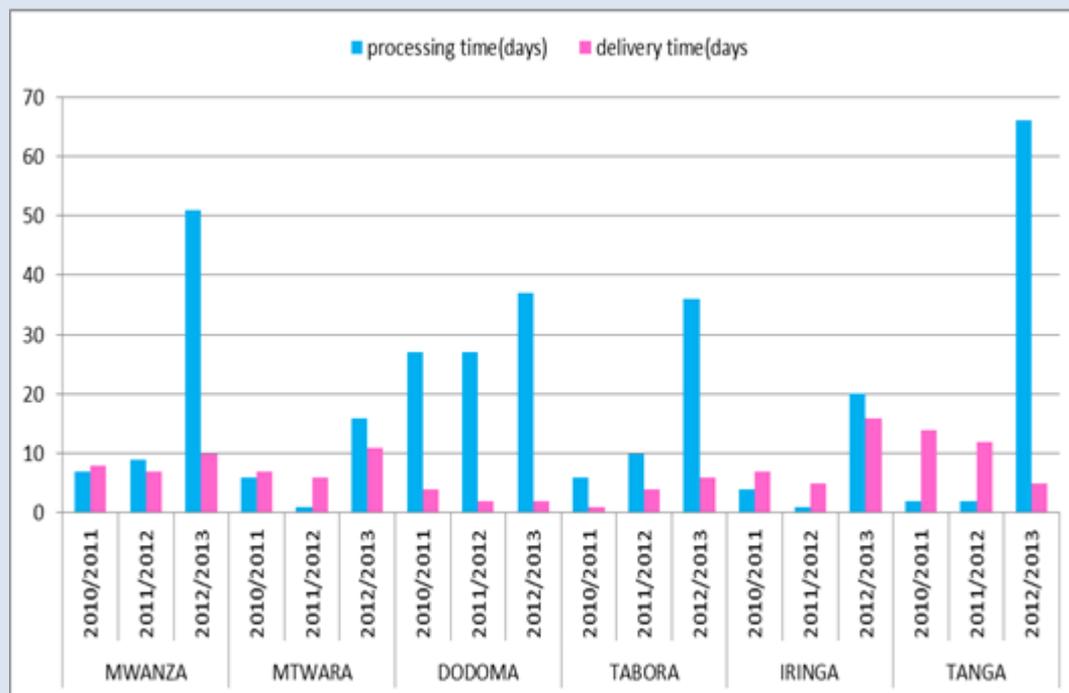
Orders were more efficiently processed in the year 2011/2012 where on average the orders from Headquarters to Zonal Offices took 15 days from placement to delivery that meant the orders were late or delayed by just 1 day. The least efficient year was 2012/2013 where most of the orders were delayed taking an average of more than 46 days to be processed and delivered. Tanga Zone had the highest figure where on average their orders were processed for 71 days meaning that the orders were late or delayed by 57 days.

The audit team went further into analysis by assessing the “processing time”<sup>30</sup> and the “delivery time”<sup>31</sup> separately as indicated in figure 4.2. The aim was to establish which activity consumes much time and contribute highly on the overall delays from the placement of an order at Central Store to delivery.

<sup>30</sup>The time difference between the order requisition date and the dispatch date

<sup>31</sup>The time difference between the dispatch date at Central Store and the receiving date as recorded at the Zonal Warehouse.

**Figure 4.2:** Comparison between the processing and delivery times for orders from MSD Central Store to Zones (2010-2013)



**Source:** Stock Ledgers, Zonal Transfer In and Out from MSD (2010-2013)

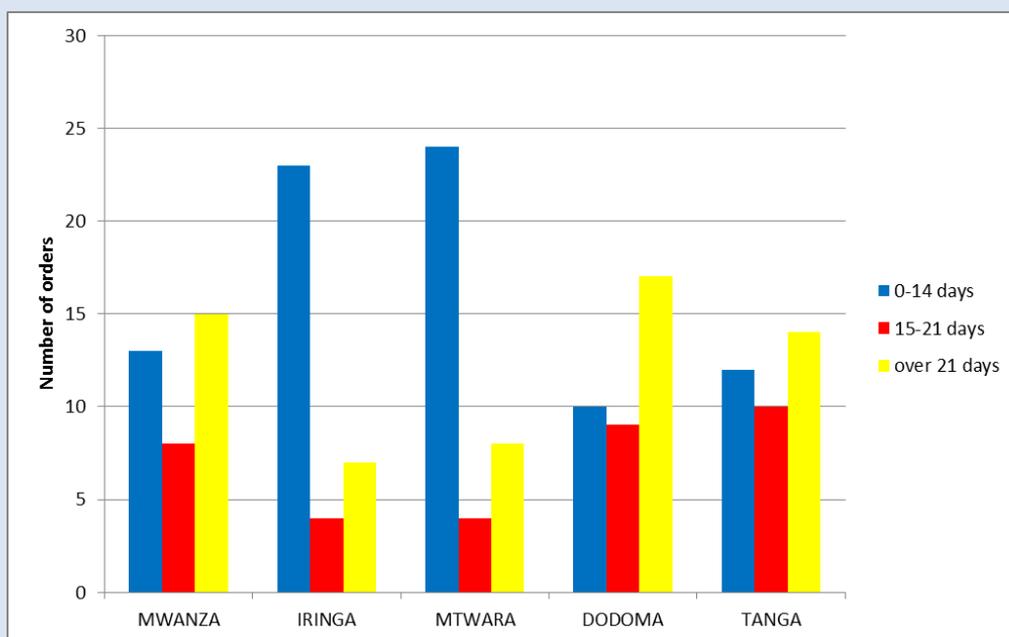
Figure 4.2 shows the comparison between the processing time and the delivery times on average for each of the six zones analyzed. According to figure 4.2 the processing time was predominantly high than the delivery time. That means orders at Central Store took more time during processing than delivering. Similarly, out of the 18 cases observed 11 cases indicated that it took more time to process the orders than to deliver them to zones, at the same time 7 cases indicate that the delivery time was longer than the processing time.

The highest processing time was observed for Tanga orders where it took on average 66 days to process its single order at the Central Warehouse during the financial year 2012/2013. The lowest processing time was observed in Iringa and Mtwara Zones in the financial years 2010/2011 and 2011/2012 where its order was processed on the average of 1 day. It was also observed

that the orders received from Dodoma took too long to be processed at the Central Warehouse with the average of 32 days for the three financial years 2010-2013. Generally it took less time to deliver the orders than to process them at the Central Store with the orders from Tabora Zone delivered very quickly with the average of 1 day in the financial year 2010/2011.

The audit team went further into categorizing the orders in terms of the actual time taken by each order from the date of requisition to the date it was received at the Zone (Figure 4.3). The aim of this was to establish the total lead times in number of orders.

**Figure 4.3 Proportion of orders in terms of time taken from its requisition date to delivery date**



**Source:** Zonal Stock Ledgers, MSD Transfer in transfer out reports and Zonal Receiving Documents

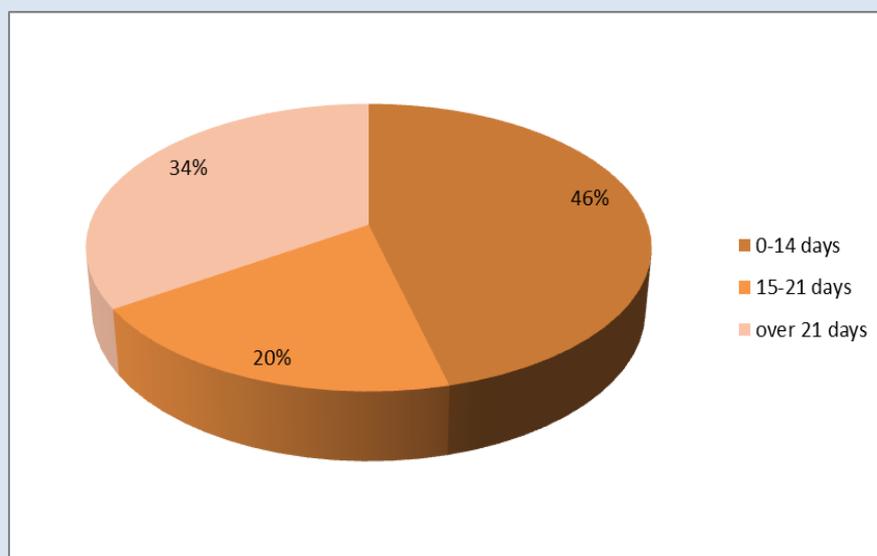
Figure 4.3 indicates the proportion of orders in terms of time taken from requisition date to the date the order is delivered at the Zonal office.

According to Figure 4.3 above, there is a high proportion of orders being processed and delivered for more than the standard set time of less than or

equal to 14 days. Comparing in terms of the 3 categories as shown in the figure, three zones out of the five zones analyzed had a high proportion of its orders processed and delivered for more than 21 days. A high mark was observed for Dodoma orders with almost half of its orders (47%) taking more than 21 days. As per each zone, Mtwara (67%) had a high proportion of “0-14 days” orders followed by Iringa with 64% of its orders processed and delivered within 14 days.

The audit team also made further analysis to show in a general manner the proportions of the orders per category at MSD Central Office as a whole. The following diagram shows the proportion of orders at MSD Central Store in terms of the time it takes to process and deliver to the Zones.

**Figure 4.4: Proportion of number of orders in terms of time it took to be processed and delivered from Central Store to Zonal Store**



**Source:** Zonal Stock Ledgers, MSD Transfer in transfer out reports and Zonal Receiving Documents

Figure 4.4 indicates that most of the orders at the Central Store were processed and delivered for more than the standard time of 14 days. That indicates that more than a half of the orders (54%) received at the Central Store were processed and delivered for more than 14 days. Of all the orders, 46% were processed and received by a zone within the standard set

time of 14 days or less, whereas 20% of the orders were processed and received between 15 and 21 days. A critical look into results presented in figure 4.4 shows that shows that on average more than 5 out of ten orders received at the Central Warehouse were not processed and delivered to the Zonal Office in accordance with the standard set time of less than or equal to 14 days.

#### 4.2.2 Ordering, Processing and Delivery of EMMS between MSD Zonal Stores and Health Facilities

In understanding the status of ordering and the processing of orders and their deliveries between the Zonal Offices and the LGAs, the audit team studied various documents associated with the orders from five MSD Zones.

The audit team computed the average total processing and delivery time used by the five visited zones based on the orders placed by visited health facilities which are under ILS. The audit team noted that there was a problem of record keeping in visited health facilities. Consequently, the audit team managed to compile the data from health facilities in the five LGAs visited as indicated in table 4.1 below.

**Table 4.1 Status of deliveries of orders from visited in MSD Zonal offices 2012/2013**

ZONE	No of health facilities visited	Total number of orders studied	Proportion of orders delivered on time (%)	Proportion of orders delivered out of time (%)	Average delay of orders to health facilities (days)
MWANZA	8	32	9	91	30
TANGA	7	28	0	100	25
DODOMA	8	32	60	40	5
MTWARA	7	28	86	14	3
IRINGA	7	28	0	100	44

**Source:** ILS Order Registers, Health Facilities Stores Ledger, Sales Invoices, MTUHA Ledgers

Table 4.1 above shows that, Dodoma performed better than Mwanza and Tanga zones in delivering orders on time to health facilities. A critical analysis of the Dodoma's better performance was that there was good working relationship between the District Pharmacist (DP) and MSD zone office.

This was confirmed during interviews with DP and DMO of Iramba District council who acknowledged that they were well informed concerning the medicines available at MSD. The DP and DMO indicated further that they had a continuous communication and close follow up for their orders at MSD. During interviews with health staff in the Iramba district, the staff acknowledged that they receive health facilities on time and a lot of working support from Council Health Management Team.

Observations made in Tanga<sup>32</sup> Zone concerning the status of order processing between Zones and Health Facilities indicated that health facilities used the standard time allowed (30 days maximum as per the ILS manual directs) to process the orders from Health Facilities before dispatching them (Table 4.2).

**Table 4.2: Status of order Processing and Delivery between the Health Facilities and MSD Tanga Zone using the Direct Delivery Method in 2012/2013**

No. of health facilities visited	No. of orders observed	Average processing time(days) per order	Average delivery time(days) per order
7	28	23	19

**Source:** ILS Order Registers, Health Facilities Stores Ledger, Sales Invoices, MTUHA Ledgers

Table 4.2 above indicates that on average the Tanga Zone used 23 days to process the orders from Health Facilities before dispatching them. This lies within the standard time allowed of 30 days maximum as the ILS Manual directs. The average order delivery time was 19 days which also lies within

<sup>32</sup> The auditors chose Tanga as the first and earliest zone to start using the Direct Delivery method which according to MSD proved to be a solution of the previously stated delays in delivery of EMMS to Health Centers and Dispensaries

the standard time allowed of 30 days maximum from the last day allowed to have the order processing completed within the zone as directed in the ILS manual.

Furthermore, the audit team found that out of 28 orders, 6 orders (21%) were processed for more than 30 days, while 22 (79%) orders were processed for less than 30 days. In general the order processing for the Tanga Zone had been done within the agreed standard.

However, when the Auditors applied the DD method to understand the status of order deliveries in Tanga zone, results show that the orders were delivered out of time to the Health Facilities in accordance with the ILS Manual's standards (Table 4.3).

**Table 4.3: The status of order deliveries at Tanga Zone for financial year 2012/2013**

No of health facilities visited	Total number of orders studied	Proportion of orders delivered on time (%)	Proportion of orders delivered out of time (%)	Average delay of orders to health facilities (days)
7	28	0	100	25

**Source:** ILS Order Registers, Health Facilities Stores Ledger, Sales Invoices, MTUHA Ledgers

From the table 4.3, it shows that all of the 28 (100%) orders were delivered out of time to the Health Facilities in accordance with the ILS Manual's standards.

Furthermore, the auditors found that there were some extreme cases in late delivery of orders to health facilities in Tanga Zone. For instance the orders in cycle 1, group A in the financial year 2011/2012 were late by 53 days from the latest delivery day. Orders for Ubwari Dispensary of the same group and cycle took 71 days from the last day they were supposed to have received the orders. On average the orders to all health facilities visited in Tanga Zone were late by 25 days. This implies that the health facilities had to wait by the average of 85 days since the day their orders were placed to MSD by DPs.

The team also analyzed the status of order processing and delivery in the zones which have been using the Indirect Delivery Method of delivery. In this regard, the team chose the Serengeti District in MSD Mwanza Zone which has been using the Indirect Delivery Method until the financial year 2012/2013. Results show that the processing time has been longer than the delivery time. On average, the Mwanza Zone had been taking 78 days to process the orders received from Health Facilities (Table 4.4). This is higher than the standard allowed time of not more than 30 days to process the order as the ILS Manual directs.

**Table 4.4: Order processing and delivery in Mwanza zone in the financial year 2012/2013.**

No of health facilities visited	No of orders observed	Average order processing time(days) per order	Average order delivery time(days) per order
8	32	78	12

**Source:** ILS Order Registers, Health Facilities Stores Ledger, Sales Invoices, MTUHA Ledgers

Table 4.4 indicates that on average the Mwanza Zone had been taking 78 and 12 days to process and deliver orders received from Health Facilities respectively. The observation was made in 32 orders in 8 health facilities located in the Mwanza Zone.

The audit team also found some extreme cases in MSD Mwanza zone. For instance, the orders of group B and C in the second cycle of the financial year 2012/2013 in Mwanza zone were processed for 136 days (more than 4 months). This led to the clustering of orders for cycle 2 and 3 in closest delivery intervals than the standard intervals; March and May 2013. The order delivery time was 12 days on average. It took MSD Mwanza Zone just twelve days on average to have delivered the orders to the Health facilities after having processed them.

The audit team found that most of the orders to health facilities have been delivered very late in the financial year 2012/2013 (Table 4.5).

**Table 4.5: Proportion deliveries of orders against time**

No of health facilities visited	Total number of orders studied	Proportion of orders delivered on time (%)	Proportion of orders delivered out of time (%)	Average delay of orders to health facilities (days)
8	32	9	91	30

**Source:** ILS Order Registers, Health Facilities Stores Ledger, Sales Invoices, MTUHA Ledgers

From table 4.5, it shows that out of the 32 orders studied 91% of all the orders to health facilities were delivered out of time. Only 9% of the orders have been sent to Health Facilities on time. It further showed that on average the orders to Health Facilities were late by one month (30 days) from the date when they were supposed to have been received. In a general manner the health facilities had to wait for at least 90 days from the day they had placed their orders at MSD. This has a serious implication to the overall effectiveness of supply of medicine and medical facilities by MSD.

### 4.3 Factors Contributing to Delays in Delivery of EMMS at different levels

The audit team found that there were various factors underlying the delays in delivering the EMMS at different levels as elaborated below.

#### i. Inadequate measuring and reporting on performance warehouse internal processes

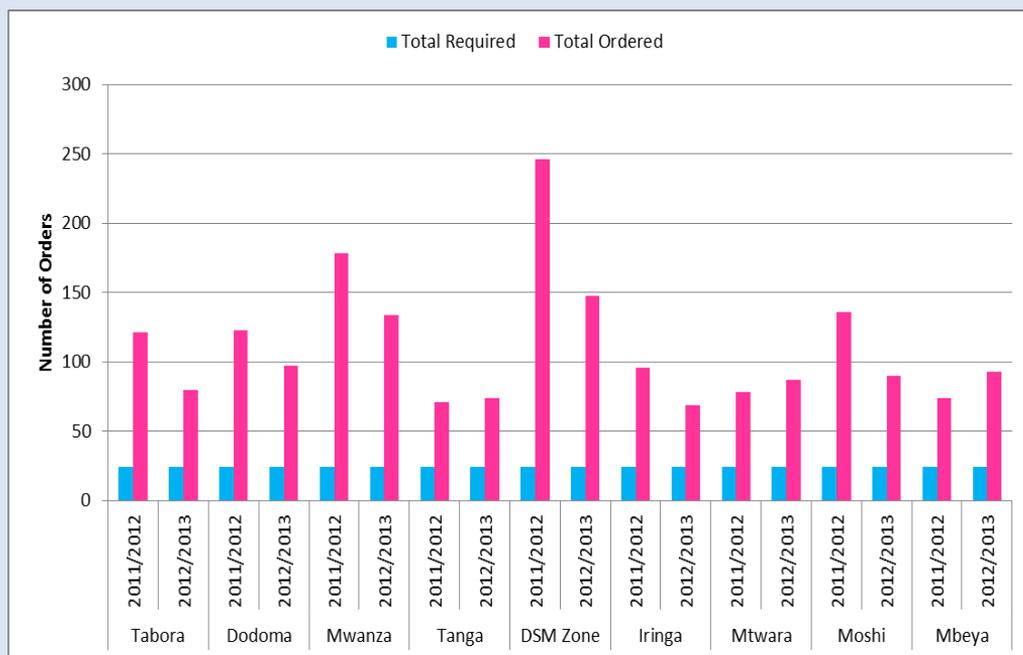
There audit team noted that there was inadequate measuring, reporting on performance of warehouse internal processes. This eventually hindered the possibility of improving efficiency in warehouse operations. This is because there was no effective mechanism to capture information which measure time taken in the processing of key activities such as time receiving and preparing orders, picking, packing, dispatch and transport. Furthermore, there were no performance criteria to assess the level of productivity per individual staff in the whole exercise of order processing and delivery of orders to its clients.

ii. Orders placed beyond the required number

The team found that unlimited number of orders placed to the Central warehouse and the Normal orders processed in the zonal offices contributed to delays in processing of orders and deliveries. The team found that there had been an extremely large number of orders placed to the Central office and the zones. For instance, the Central office was required to receive only two orders per month from the Zonal offices with a maximum of 24 orders per annum.

However, there has been more than the average number of orders received by the Central Store from the Zones (Table 4.5). This led to a huge workload of orders for the staff concerned with the processing and delivery of orders. The huge workload minimized staff efficiency and late deliveries to the zones.

**Figure 4.5:** Required number of orders and the actual number of orders placed by the Zones to MSD Central Warehouse



**Source:** Zonal Stock Ledgers, MSD Transfer in transfer out reports and Zonal Receiving Documents

Figure 4.5 indicates that MSD Zones have been placing more than the required number of orders to the central warehouse. For instance, the average number of orders placed by each zone during the financial year 2011/2012 was 100. This is an excess of 76 orders from the required 24 orders per annum. This revealed that there was weak management of orders between Central Warehouse and Zonal Stores

### iii. Late submission of orders

The audit team found that there were not only high number of orders from the LGAs but also the orders were submitted very late to MSD Zonal offices. In Tanga zone for example, the team found that during the 2011/2012 financial year the average delay in order submission was 45 days (Table 4.6).

**Table 4.6: The status of order submission at MSD Tanga Zone during the financial year 2011/2012**

No of health facilities visited	Total number of orders studied	Proportion of orders submitted on time (%)	Proportion of orders submitted out of time (%)	Average delay in order submission (days)
7	28	11	89	45

Source: ILS Order Registers, Health Facilities' Report and Request forms

Table 4.6 shows that orders from the health facilities are submitted late to MSD. Of all the orders, 89% were submitted out of time in accordance with the ILS Manual calendar. Only 11% of the orders were submitted on time. The late submission of orders has been one of the reasons for the ultimate late delivery and delays of orders to the health facilities.

### iv. Stock out at MSD Central and Zonal Warehouses

During the audit, the audit team found that there was a high level of stock out of EMMS that was consequently causing delays in delivery of orders to Zonal Warehouses and to the health facilities. Likewise, the stock outs led to interruptions in the delivery calendars and eventually causing delays in delivering the orders to Health Facilities. For instance it has been reported

that 94% of Hospitals<sup>33</sup> had been out of stock of one or more essential medical supplies while 96% of the hospitals had reported being out of stock of one or more essential medicines. Meanwhile there was a lack of essential medicines in 52% and medical supplies in 59% of hospitals for a period exceeding four weeks<sup>34</sup>.

**v. Irregular release of funds from MoF/MoHSW**

The audit team found that there was irregular release of funds by MoF and MoHSW to MSD that contributed to delays in deliveries of EMMS to zonal offices and Health Facilities. The team noted that the funds that MSD received from the MOF through MoHSW were used to procure EMMS and ensure that the EMMS were available in the MSD Warehouses for timely distribution to Health Facilities. However, there were some delays in release of funds that interferes the supply schedules resulting to the overall delays in the supply of EMMS to Zones and Health Facilities (Table 4.10).

**vi. Lack of standard processing time set at the Central Warehouse**

The other reason that has been causing the delays in deliveries of EMMS to Zones and Health facilities is the longer processing times at Central office and Zonal offices. After making a thorough review of strategic plans and as well M&E indicators the audit team found that the Central Warehouse had no standard time set for processing the orders. This created a loophole in performance management of order processing and therefore could not guarantee the efficient processing of orders. This has eventually led to lack of accountability in processing of orders which hampers enforcement of standard operating time of 14 days.

**vii. Change from Orion to EPICOR 9 system**

The audit team noted that MSD introduced EPICOR 9 system in the financial year 2012/2013 and closed out the ORION system which was being used previously. The auditors found that E9 operations at both Central and Zonal level contributed to the longer processing time and eventually late deliveries as opposed to the Orion system (4.6).

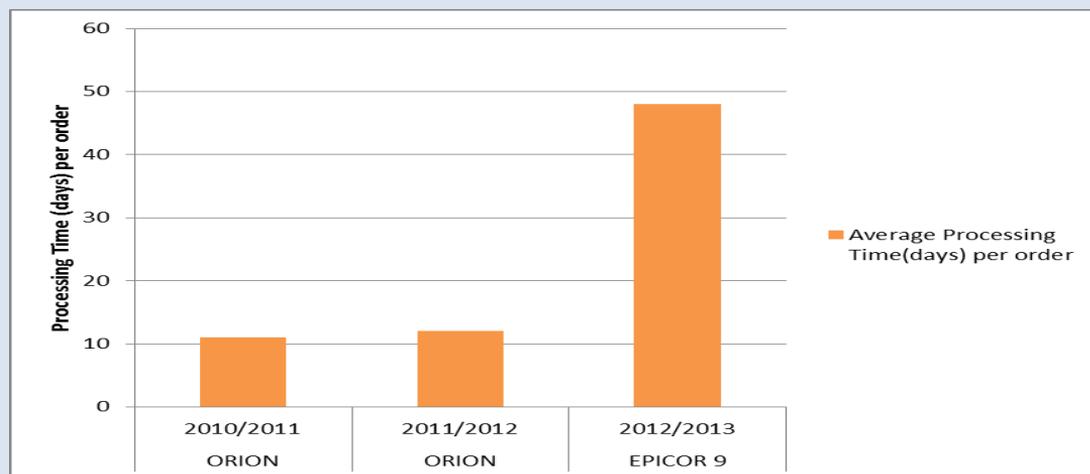
The team observed that despite of having sluggish network connectivity, most of staff and personnel working through E9 were not conversant with

<sup>33</sup> A survey conducted to 54 public hospitals across Tanzania Mainland in March 2012.

<sup>34</sup> Sikika, (2013) Report on Availability of Essential Medicines, Medical Supplies and Bed Capacity in Hospitals in Tanzania Mainland.

the system. There was also a problem with data integrity that leads to having two different reports of the same category at two different times without having processed any transaction<sup>35</sup>.

Figure 4.6: Enterprise System used at Central Warehouse against the average processing time per order (2010/11-2012/13)



Source: Stock Ledgers, Zonal Transfer in and Out from MSD (2010-2013)

From figure 4.6 above it is indicated that there have been significant and abrupt changes in the processing time of orders at the Central Warehouse after the introduction of E9 system. The figure shows that while the Orion system had taken less processing time in the 2010/2011 and 2011/2012 financial years, this was not the case with the application of E9 system in 2012/2013.

#### 4.4 Analysis of the factors associated with delays in ordering, processing and delivery of EMMS

The factors contributing to delays in ordering, processing and delivery of EMMS at different levels were analyzed by linking the factors with their impact as shown in the table 4.7

<sup>35</sup> Source: Zonal Weekly Progress Reports

**Table 4.7: Analysis of the problems associated with ordering, processing and delivery of EMMS**

FACTORS/CAUSES	PROBLEM		
	Delays in Ordering	Delays in Processing	Delays in Delivery
Frequency of placing orders beyond required level		✓	
Weaknesses of EPICOR 9 (slow connectivity and non-functionalities of some models)		✓	
Late submission of orders		✓	✓
Stock out	✓	✓	✓
Irregular release of funds	✓	✓	✓
Inadequate enforcement of standard operating time for ware housing activities	✓	✓	✓
Inadequate measuring and reporting on performance warehouse internal processes		✓	
Proactiveness and influence of DMOs and DPs	✓	✓	✓

Source: Auditors' Analysis

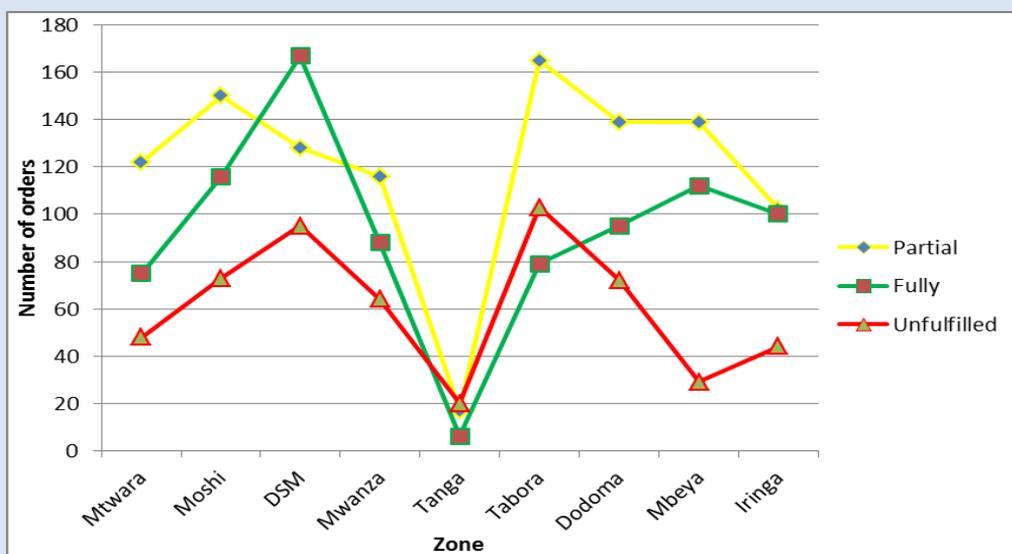
#### 4.5 Status of orders fulfillment

The audit team found that the issue of order fulfillment also had impact in the distribution of medicines and medical supplies as follows:

##### 4.5.1 Order fulfillment between MSD central stores to zones office

When MSD zones order from central store they expect to receive the orders in fully. Unfortunately this was not the case. Most of the orders delivered from MSD were partially fulfilled. For instance, out of 2,464 orders delivered by the central warehouse to all MSD zonal stores in the 2012/2013 financial year, 1078 orders were partially fulfilled (Figure 4.7).

**Figure 4.7: Status of order fulfillment based on the quantities ordered from MSD central store to zonal offices for the financial year 2012/2013**



Source: MSD data 2012/2013

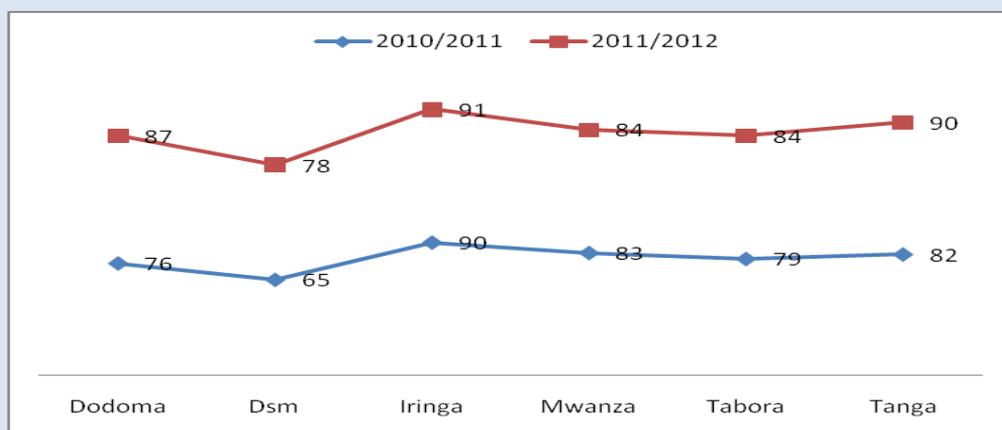
Figure 4.7 shows the analysis on the status of fulfillment based on the quantities of items ordered for 2,464 orders received from the 9 Zones. The figure indicates that all the regions received partial orders from MSD Central Warehouse in terms of quantities ordered except for Dar es Salaam Region which had more of its orders fulfilled than other regions.

Out of the total 2,464 orders, 1078 were partially fulfilled, 838 were fulfilled and 548 orders were unfulfilled. On average 44% of the orders in each zone are partially fulfilled with 22% of all orders totally unfulfilled. The large number of partially fulfilled orders signified ineffectiveness of MSD central house in attainment of its objectives.

#### 4.5.2. Order fulfillment between MSD Zonal offices to health facilities for the year

The assessment made by the audit team based on the lines of items fulfilled out of the total items requested shows that there were more unfulfilled orders in both financial year 2011/2012 and 2010/2011 (Figure 4.8).

**Figure 4.8: Order fulfillment between MSD Zonal offices to health facilities for the financial year 2010/2011 and 2011/2012:**



Source: Zones service level reports 2010-2012

Figure 4.8 above shows status of order fulfillment per line of items between MSD Zonal offices to health facilities. From the figure generally the percentages of fulfillment vary across the zones in the two financial years. Nevertheless, there was more order fulfillment in the financial 2011/2012 than 2010/2011. Likewise, Iringa had higher fulfillment rate than the rest of zones at the same time Dar es Salaam had the lowest fulfillment rates across the zones in all the two financial years.

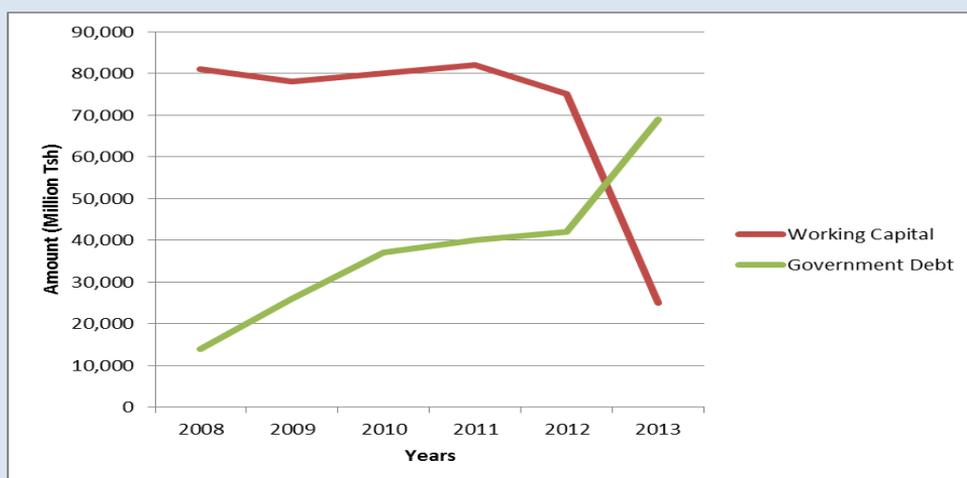
#### 4.6 Factors contributing to the low rate of order fulfillment

During the audit visit, the audit team found that the following factors contributed to low rate of order fulfillment starting from Central Warehouse to zones and zones to health facilities as follows.

##### i. Deterioration of working capital

According to the MSD Medium Term Strategic Plan of 2014-2020, the financial performance of MSD had improved over the period; however, the long term financial sustainability of MSD has not improved. During the period between 2007 to 2013, the working capital has declined from TZS 81 billion in 2007 to TZS 24.5 billion in 2013 (Figure 4.9).

**Figure 4.9: Working Capital against the Government Debt**



**Source:** MSD Medium Term Strategic plan 2014 -2020

Figure 4.9 indicates deterioration of MSD working capital that is contributed by the growing government debt and delayed and erratic disbursement of funds from the government.

##### ii. Increased trend of government debt

Since 2008 to 2014 the trend of government debt is still increasing which trend keeps increasing (Figure 4.9). The increase of government debt (Table

4.7) affected the working capital as it reduced the procurement capacity of MSD in timely manner. Consequently, this affected the supply of EMMS in MSD stock as well as fulfillment of orders.

**Table 4.7: Trend of government debt to MSD (2008-2014)**

<i>Figures in Billion TZS</i>							
Description	June 2008	June 2009	June 2010	June 2011	June 2012	June 2013	Current status October 2014
Government Debt	14	26	37	40	42	69	102
Government Debt growth	-	12	11	3	2	27	33
Percentage growth of Government Debt	-	86	42	8	5	64	48

**Source:** MSD Medium Term Strategic Plan 2014-2020

Table 4.7 above shows that, in the period of seven years that is from 2008 to 2014 the debt increased by 629 percent (six times) which was the average growth of TZS 12.5 billion in a year. There was no agreement between MSD and the government on settlement of the debt. However, the government has set aside TZS. 7 billion for repayment of the debt for financial year and has already paid TZS. 2 billion and in financial year 2013/2014 has paid TZS 8 billion. In second quarter of the financial year 2014/2015 the Government paid MSD TZS 20 billion in an effort to clear the debt.

Analysis of data from MSD shows that about 80 percent of the debt is attributed by the cost related to clearing, storage and distribution of medicines and medical supplies related to vertical programs (Table 4.8). Therefore it is obvious that the rapid increase of government debt had serious implication to the MSD performance as the MSD budget becomes affected when the government is trying to service the debt.

**Table 4.8 Sources of MSD Debt for financial years 2011/2012 to 2014/2015**

Source of debt	Verified debt		Non verified debt					
	June 2012		June 2013		June 2014		Sep-14	
	TZS	Proportion	TZS	Proportion	TZS	Proportion	TZS	Proportion
Vertical programs'	38	86%	49	79%	74	80%	84	82%
Government HF's	6	14%	13	21%	18	20%	18	18%
<b>Total</b>	<b>44</b>	<b>100</b>	<b>62</b>	<b>100</b>	<b>92</b>	<b>100</b>	<b>102</b>	<b>100</b>

**Source:** Financial records obtained from MSD 2014

As shown in Table 4.8 above, the underlying major reason for the debt is underfinanced vertical programs by MoHSW where by the cost for clearance, storage and distribution of some of medicines donated by development partners incurred by MSD instead of government. There are no arrangements on how MoHSW dealt with the financing of donated medicines.

### iii. Delays in disbursement of fund for procurement of drugs

The audit team found that there was a problem of delays in release of funds from the government to MSD<sup>36</sup> that contributed to low rate of order fulfillment. The audit team noted that MSD needed to have enough stock of medicine available in their premises. However, this was a challenge as funds for procurement of medicines and medical supplies were not released and deposited to MSD on time based on the approved budget of MoHSW. In the ideal situation, MSD needed to have 25 percent of all four disbursement made to them in the beginning of each quarter of the financial year (one installment in each quarter). Nevertheless, the quarterly disbursement of funds was not done on time.

The audit team noted that the funds from both Health basket funds and government grants directed to MSD through MoHSW for procure medicines and medical supplies were received as per the budget. The total amount TZS 80.4 billion was received by MoHSW whereby TZS 46.4 billion was from

<sup>36</sup> MoHSW: MTR\_HSSP III 2009-2015 Pharmaceutical Services (2013)

basket funds and TZS 34 billion was from Government grants which is equivalent to 58 and 42 percent of the total fund disbursed in year 2012/13 respectively.

However, the funds were disbursed to MoHSW in a piecemeal form. The audit team analyzed the flow of funds from the MoF to MoHSW in terms of the rate of release in relation to the annual budget and number of days and found that there was high percentage of delays in relation to number of days in a quarter (Table 4.9)

The analysis revealed the following result as shown in the table 4.8 for Health Basket Fund and figure 4.9 and 4.10 for the Government Grants as shown in the below.

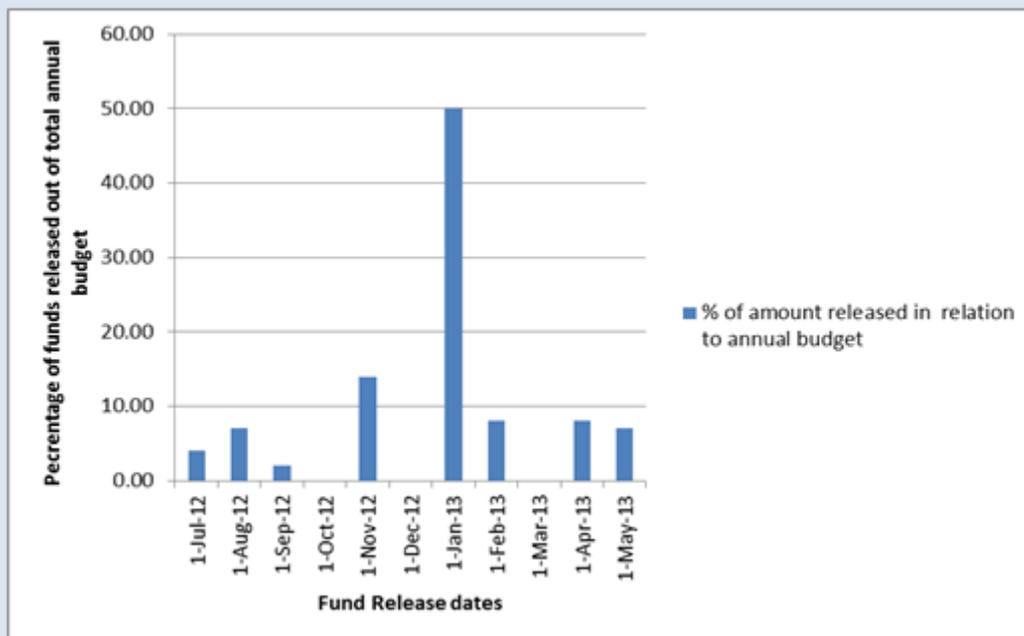
**Table 4.9: The rate and delays of Health Basket Funds released from MoF/Treasury to MoHSW for financial year 2012/2013**

S/N	Receiving dates	% of amount released in relation to annual budget	% of amount released in relation to cumulative in annual budget	% of Delays in relation to number of days in the quarter
1	13 Feb 2013	57	57	253
2	13 April 2013	43	100	48

Source: MoHSW Financial Records - 2013

Table 4.9 shows that the MoHSW has received the funds for health basket fund in only two installments i.e. 57 percent on February and 43 percent on April 2013. The team noted that the funds were expected to be received from the first quarter which starts on July of each financial year. However, the funds were received very late in the third and fourth quarter. The first quarter was delayed for 228 days which is equivalent to 253 percent while the second release which was made in the fourth quarter was delayed for 43 days out of 90 days in quarter which is equivalent to 48 percent

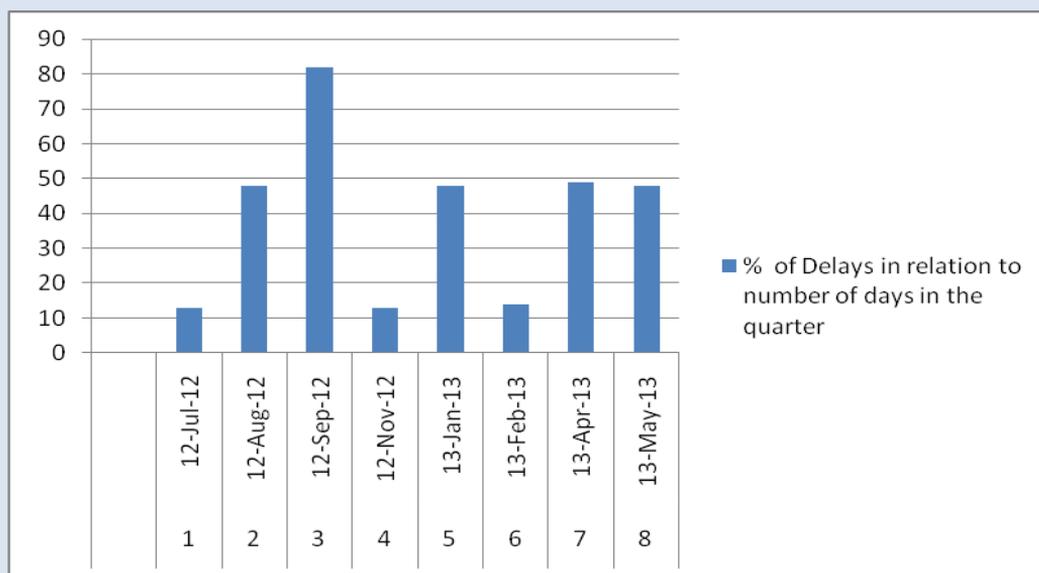
Figure 4.10: Percentage of amount in relation to the annual budget 2012/2013



Source: MoHSW financial records 2013

Figure 4.10 above shows that the MoHSW received eight (8) installments from the MoF instead of four installments. The rate of amount released in relation to the annual budget of TZS 34 billion varied from 4 to 50 percent. Six out of 8 (75%) installments were less than 10% of the intended sum. The higher installment of 50% was received during the beginning of the 3<sup>rd</sup> quarter (January 2013).

**Figure 4.11: The rate and delays of Government grants released from MoF/Treasury to MoHSW for financial year 2012/2013**



**Source: MoHSW financial records 2013**

The figure above shows that the MoHSW received 8 installments from the MoF instead of the required 4. There were also delays which vary from 13 to 82 percent which is between 13 to 74 days out of 90 days in the quarter.

#### iv. Long process of disbursement of funds for procurement of drugs

During the audit visit the audit team found that more delays in releasing funds were caused by the long disbursement arrangement which started from MoF to MoHSW and then to MSD. The funds were initially released from MoF through Treasury to MoHSW which ultimately disbursed the funds to MSD. In this scenario the MoHSW repeated the similar internal administrative process of request and approval as done by MoF in disbursing the same funds to MSD.

During interviews with officials in MoHSW, the audit team found that it took two to three weeks to complete system of disbursing of funds to MSD. The team noted that the process could be shortened by the MoF to disburse direct the funds to MSD based on the written instruction from the MoHSW.

However, the team noted that MSD did not have the Vote number which could facilitate the fund allocation direct from MoF to MSD. The team was informed by MSD Management the institution operated in commercial principles and therefore having its own vote could remove the flexibility in its operations as semi autonomy agency and pose difficulties for MSD to recover its operational margins.

## CHAPTER FIVE

### MONITORING AND EVALUATION OF MSD'S PERFORMANCE

#### 5.1 Introduction

In this chapter, we present findings as answers to the audit question three regarding the monitoring and evaluation of MSD's performance in demand forecasts and distribution of medicines and medical supplies in Tanzania Mainland.

The aim is to provide answers as to whether MoHSW monitors and evaluates the implementation of its objectives and targets relating to the timely availability of medicine and medical supplies in health facilities through MSD. Also to check how MSD monitors demand forecast, order processing and delivery of EMMS.

#### 5.2 Monitoring and Evaluation by MoHSW

According to National Health Policy of October, 2003, MoHSW had to ensure that there was a comprehensive and clearly defined operational system of monitoring and evaluation on performance of the Sector. The MoHSW through PSS had to monitor the pharmaceutical supply chain in the country.

##### 5.2.1 Indicators Used for Monitoring supply chain

In order to have effective monitoring system MoHSW was required to have defined objective, smart target and specific indicators to monitor the performance to achieve the Ministry's intended objective.

According to the interview with the officials in PSS, the indicators used to monitor the performance of supply chain were derived from HSSP III covering the period of 2009 to 2015. In reviewing the HSSP III, we found that there were several indicators covering pharmaceuticals issues. Among the indicators used for monitoring demand forecast, order processing and delivery of EMMS are summarized in table 5.1

**Table 5.1: Indicators used by MoHSW in measuring demand forecast, order processing and distribution of EMMS**

Strategic Objectives	Expected results	HSSP III Indicator	Means of Verification
Ensure gender sensitive, equitable availability and rational use of quality pharmaceuticals, medical supplies and equipment	Health facility and district level competent in forecasting, procurement, stocking and rational prescription of medicines	Availability of tracer medicines in health	HMIS
	Adequate MSD warehousing, communication and distribution capacities at zonal level in place	Lead time between district order and delivery of medicines and supplies to district	MSD report

**Source:** Health Sector Strategic Plan HSSP III 2009-2015

Table 5.1 above shows that MoHSW used indicators such as availability of tracer medicines to assess the level of competence in health facilities and district level in forecasting, procurement, stocking and rational prescription of medicines. Furthermore, order processing and delivery was measured by lead time as indicated in table 5.1 above.

## 5.2.2 Execution of monitoring indicators

In the MoHSW the PSS was responsible for ensuring the supply chain system work properly. PSS used indicators, drug tracing exercises and inspections to monitor the supply chain system.

The audit team noted that in measuring the indicators related to the availability of medicines, MoHSW established the ILS gate way and Health Management Information System (HMIS).

Starting with the HMIS tools, the Ministry required the Health facilities to report through HMIS books. The book collected data such as stock out by showing which items were missing and for how long. Also these books captured the delivery date made by MSD. However, data relating to logistic issues in most cases were not filled by staff of health facilities. For example, most of the visited facilities did not fill these dates on the required book instead some of them claimed to fill them in the visitor's book.

The issue of ILS gateway which required the health facilities to send data via the SMS also had challenges of being analyzed by Ministry in a logical way to show up the trend of progress made from time to time.

Regarding drug tracking which was conducted by the Ministry via to PSS with an objective of ensuring the medicine were available, was not done as required due to the financial difficulties. The exercise was required to be done at least twice in a year but it was normally done once in a year. Also the coverage was very limited as it covered only few districts due to limited number of PSS staff and inadequate financial resources.

The other method used in monitoring was inspection. The PSS conducted inspection or sometimes in collaboration with the inspectorate Unit which is within the Quality Assurance division. According to interviews with officials of PSS and the inspection unit, these inspections focused on the health facilities and mostly guided by the inspection guidelines.

However, the audit team did not find the plans for the inspections that were conducted by PSS. There was no adequate documentation of inspection reports that were conducted and analysis of the reports.

Furthermore, the audit team did not find any tool such as register for

keeping actions to be implemented to address the issues observed by PSS and the inspection unit. According to the interviews with PSS officials, PSS's operations were affected by inadequate funds. Consequently, the inspections were conducted on ad hoc basis, once or twice instead of four times in a year.

### 5.2.3 Effectiveness of monitoring system

In assessing the overall monitoring system focus on the supply chain at the MoHSW, the audit found that the system was not effective as it was supposed to be. However, the audit team noted that the monitoring system was improving especially with the introduction of eLMIS and ILs gateway system.

#### Reasons for ineffective monitoring

During the audit visit the audit team found the following factors that contribute to inadequate monitoring in the distribution of medicines and medical supplies.

#### i. Position of PSS in the MoHSW's organogram

PSS was positioned under the Quality Assurance Division which was headed by the Director who reported to Permanent Secretary. The head of PSS was Chief Medical Officer who reported to the Quality Assurance Division Director. Therefore, Chief Pharmacist's decisions and directives provided to MSD had to pass through the Director. There were no directed reporting mechanism between MSD and PSS. Hence the PSS had little influence on scrutinizing the performance MSD because this arrangement compromise PSS's ability to fulfill its responsibilities accordingly.

#### ii. Unclear accountability among actors in supply chain

PSS had responsibility for overall supply chain performance. Under PSS, there were many actors who are involved in supply chain system. Among the actors include MSD, PMORALG, LGAs, Health facilities and donor funded programmes. However, the audit team found that there were no clear roles concerning how each actor play and its accountability. According to the

report on strategic review for national supply for health commodities one of the reasons mentioned which contributed to unclear accountability was lack of supply chain master plan. The supply master plan could guide all actors involved in implementing and monitoring supply actions as well as interventions.

### **iii. Limited focus of indicators for monitoring the performance supply chain system**

The audit team found that, the major indicators that were used by the MoHSW focused mainly on the availability medicines.

The audit team considers the indicator that assesses the availability of EMMS at Health facilities as higher level indicator which measures the symptoms of the system. However, the team did not find neither indicators nor system which administered by PSS focusing on measuring the effectiveness key processes of the supply chain of EMMS such as quality of demand forecast, order processing and delivery. In absence of these indicators, it was difficult for PSS to get assurance on whether the system worked properly and which specific part to fix in case of any problem.

Among the reasons contributing to the limited focus was inadequate translation of these indicators found in the MoHSW's strategic document into the operational plans. Taking into account that the primary role of MoHSW is to develop health policies and monitor its implementation, PSS could have developed more detailed indicators which amplifying the indicators stated in the strategic documents such as HSSP III into its operation plan. However, in reviewing the documents we found there were no such indicators in PSS operational plan.

### **iv. Inadequate practices of PSS in assessing and prioritization of risk factors in their monitoring activities**

The audit team found that the MoHSW through PSS had no practices of assessing risk associated with supply chain system. We expected that the PSS to have the risk register which shows the major risk factors in the supply chain i.e. the factors that have high chances of occurrence and their impact affect in large extent the supply chain system. Based on the risk register, the management of PSS could be able to prioritize the major risk factors and develop the mitigation strategy that could be monitored by the well designed and cost effective performance indicators.

#### v. Lack of guidelines a for monitoring distribution of EMMS

In reviewing the documents related to the monitoring the audit team found that the PSS had developed the tool from for drug tracking which was in form of the check list that guided a user in conducting drug tracking audit which form a small component of monitoring system. There was no specific guideline for monitoring overall matters related to supply chain.

The absence of monitoring guideline led to ineffective and undocumented monitoring practices for institutional memory which subsequently compounded the high risk of elements for monitoring supply chain. The team noted that among the factors which contributed to lack of monitoring guidelines in the entire MoHSW was lack of monitoring framework which forms a basis for other monitoring system in place. However, during interviews with officials in the Ministry, it was confirmed that lack of guidelines for monitoring distribution of EMMS was a challenge to the Ministry but the Ministry had started working on it.

#### vi. No comprehensive monitoring plan for distribution of EMMS at the MoHSW

The Pharmaceuticals Services Sections (PSS) which had the role of ensuring timely availability of medicines and medical supplies in health facilities was expected to translate the broad strategies from HSSP III into operational plans. Due to the fact that the role of the Ministry was to formulate and monitor implementation of the health policy, it was expected that PSS operational plan was to be included in the comprehensive monitoring plan for assessing the overall performance of supply chain system. In reviewing documents we found out that PSS had no comprehensive annual monitoring plan for monitoring the distributions activities in the country.

Based on the documents reviewed and interviews with the officials at the MoHSW, we found that sections such us Health Services Inspectorate and Quality Assurance section, Regional and District Health Coordination units, HMIS unit and Monitoring and Evaluation unit covered the issues of distribution of medicines and medical supplies in their own perspective. Hence the PSS which had a major role in this regard could have the mechanism which enabled them to plan on how well they could cooperate

with other sections to make effective monitoring.

**vii. Inadequate and unreliable data for monitoring distribution EMMS at the MoHSW**

The data relating to monitoring of the supply chain system needed to be adequate in scope and reliable so as to enable the Ministry report against the set out performance indicators. However, the sources of data used by the Ministry were HMIS. The data in HMIS was not reliable due to the fact that there was no quality control or assurance for the information filled in. In reviewing some of the HMIS tools we found some of the books were left blank. No sanctions were taken for the staff that did not fill the data. Similarly, there was weak staff supervision which contributed the problem of inadequate and unreliable data for monitoring distribution in health facilities.

Not only that but also some of the data which were very crucial in monitoring the components did not feature at all in the Ministries' categories of sources of data. For example, issues of forecast of demand and its implementation, timely disbursement of funds, payment of MSD loan, order, processing and delivery did not feature in the Ministry's sources of data. The lack of reliable data impaired the comparison between indicators and hence misleading the trend pattern which could be shown by the result of data analysis. This affected the decision making process by the senior managers.

In addition, the team found that lack of baseline study on the status of distribution of EMMS in the country was another challenge which the Ministry was facing. However, the team was informed during interviews that the introduction of eLMIS could help in solving these lapses if it would be well designed and give criteria to more risk issues in the supply chain.

**viii. MoHSW's monitoring was not focusing on MSD's performance on the distribution activities**

The focus of MoHSW was on the availability of medicines and medical supplies in the health facilities through tracer items, drug tracking and other means like the new ILS gateway. The monitoring conducted by the ministry on the one hand focused on the output of MSD that was availability

of medicines in the facilities. On the other hand, Monitoring of the Ministry focused on the effectiveness of controls by the health facilities checking order submission, storage of drugs, dispensing. This was done by using inspection and supportive supervision.

However, the audit team found that there was no specific monitoring on MSD performance that was conducted by the Ministry focusing on the key parameters such as the MSD's distribution activities. The PSS did not request or receive any reports from MSD specifically showing how MSD perform in the distribution of medicine and medical supplies to health facilities.

The MoHSW was accountable for the performance of MSD. Therefore we expected the MoHSW to set performance agreement with MSD and review its performance on regular basis. However, in reviewing the document we found that there was no performance agreement between the MoHSW and MSD. This was confirmed during interviews with officials in the Ministry that there was an MOU between MSD and MoHSW, however, it was out dated and did not contain performance issues. Lack of performance agreement exonerates MSD to become accountable to MoHSW.

#### **ix. Unreliable sources of fund for supporting monitoring activities**

The MoHSW through PSS and the Inspectorate unit section which were under the Division of Quality Assurance were supposed to conduct the monitoring and inspection respectively focusing on issues related to supply chain. The PSS was supposed to conduct drug tracking twice a year while inspectorate unit was supposed to conduct inspections at least twice a year. However, both drug tracking and inspection conducted inspections only once in a year or in some case did not conducted inspections at all.

During interviews with staff in the sections, it was revealed that the major reasons for the not conducting inspections were lack of funds. The PSS depends on DANIDA funds to conduct these audits. The team noted that the funds from DANIDA were either too limited or in some cases delayed in disbursement

#### **x. Inadequate coordination of monitoring activities done by MoHSW**

The MoHSW had different activities which were done by various department /sections with the aim of assessing the gap in health services delivery and took necessary actions to address such gaps. One of the focuses of these activities was on the distribution of essential medicines and medical supplies.

In Quality Assurance Division there were two units namely PSS and Inspectorate Unit which carried out drug tracking/audit and inspection respectively with the aim of ensuring the gaps in the supply chain are addressed. Also there was Monitoring & Evaluation Unit which also focused on the supply of essential medicines and medical supplies. There were also District and Regional Health Coordinators whose responsibilities were to assess performance of health sector in districts and regional levels. In doing so they covered the supply chain of essential medicines and medical supplies specifically when they review plans, progress reports and supervision reports made by CHMT and RHMT.

In reviewing the activities and reporting structures of these units we found out that there was less coordination among them on issues of supply chain of the health commodities in the country. The PSS which seemed to have the bigger role to play on this regard did not have or receive any information.

The Inspectorate Unit had developed the supportive supervision guidelines which covered some aspects of distribution of medicines and medical supplies in the health facilities. The supportive supervision guidelines were conducted also by the CHMT and RHMT in the LGA and regional levels. The reports for this supervision were not clear concerning where they were supposed to be submitted to Health Services Coordinators or inspectorate unit. This is because CHMT and RHMT were under the District and Regional Health Coordinators respectively while the inspectorate unit oversees of supportive supervisions. The Inspectorate unit in many cases conducted the supervision which almost similar to what the CHMT and RHMT did

Apart from that, there was a Monitoring Unit which was also responsible for checking the issue of stock out in health facilities. The reports which were produced by these departments were not shared by the PSS, the responsible unit to take action. Similarly, the objective and targets of all these interventions were not harmonized. Every intervention had its own objective and there were no target and indicators for all these

interventions. The main reason for this was the lack of the leadership in coordination of these activities which was also contributed by the lack of master plan.

#### 5.2.4 Evaluation of supply chain activities

In the MoHSW we expected that the short and long term evaluation to be conducted in the supply chain management so as to show the status of performance against the objective set out. We also expected that the MoHSW would have evaluation plans relating to the supply chain system and implement this plan. Equally, the short, medium and long term performance evaluation of the supply chain was documented and used to measure performance against the objectives set.

The audit team reviewed the documents provided by MoHSW and found that there was a strategic review which was conducted by a consultant under the request of Minister of Health and Social Welfare regarding the National supply chain system for health commodities. There were also some of the studies which were conducted by other donors which related with logistic issues.

However, we found that there were no evaluations that were specifically focused on supply chain management initiated by the MoHSW for the financial year 2010/2011, 2011/2012 and 2012/2013. This was contributed by lack of evaluation plan. Absence of evaluation plan caused MoHSW to lack objective to conduct evaluation, scope and methods which would help to determine the budget requirements and develop the strategy for mobilization of resources.

The impact of not conducting the specific evaluation on supply chain incapacitated the management from being well informed and hampered their ability to advise and provide oversight on supply chain management issues and their decision relating to progress towards the specific targets and objective set out in short and long term. Equally, the evaluation conducted also would be able to show challenges facing the Nevertheless, lack of evaluation contributed to inability to conduct detailed and comprehensive analysis of the overall picture regarding the performance on the supply chain.

### 5.3 Monitoring and Evaluation within MSD

The monitoring and evaluation of MoHSW had some of the indicators which depended data from MSD to ensure some of the key processes of the supply chain of EMMS performed properly. According to the MSD organization structure, Monitoring and Evaluation (M&E) unit was responsible for carrying out the monitoring and evaluation in order to ensure the entity met its strategic objectives. The unit was reporting directly to Director General. The M& E unit was established early 2012.

However, prior to the year 2012 monitoring was conducted on ad hoc basis and was mainly focused on financial issues such as cost absorption, price and other operational issues like order fulfillment. To enhance consistency and better performance, the unit developed the Standard Operating Procedure in order for M&E unit. The M&E Standard Operating Procedures covered the roles and major activities carried out by the Unit which are data collection, collation and analysis, information reflection and reporting, report dissemination and storage. In addition, MSD introduced balance score card in their monitoring system starting financial year 2013/2014 when the new Medium Term Strategic plan (MTSP) covering year 2014 to 2020 came into use.

#### 5.3.1 Indicators Used for Monitoring

The key elements of successful implementation of a strategy were built on hierarchy of objectives, targets and measurable indicators. Agreed indicators were important management tool for monitoring, review and evaluation purposes.

The MTSP of 2004-2020 had ten strategic objectives while that of 2006 to 2012 had seven strategic objectives. At MSD level, indicators were derived from the Medium Term Strategic plan. Most the indicators related to the distribution of medicines and medical supplies stated in the MSD Medium Term Strategic Plan 2006- 2012 focused on the orders fulfillment rate from Central Store to Zones and from zones to hospitals and health facilities. Also the issue of fleet utilization rate and the disbursement of funds were among the areas covered. In year 2012/2013 MSD made some efforts in developing

indicators which measured the assessment of demand forecast, order processing and delivery.

Starting from financial year 2013/2014, with the introduction of balance score card made each directorate and sections to have its own target and indicators which were in balance score card and Business Plan matrix. In this new arrangement MSD zones were treated as Business Strategic unit.

The audit team reviewed the Annual Business Plan for financial year 2013/2014 and that of 2014/2015 focusing on indicators used in demand forecast, ordering from health facilities, order processing, delivery and fulfillment. The audit team noted that MSD made effort to develop indicators which covered the said operational process in these plans, starting from directorate, sections to MSD zones. However, the audit team noted further that there was inconsistency of indicators from those which were managed at higher level in relation to those found in MSD zones measuring the same process or target. For instance, the Demand Planning Section formulated two indicators related to percentage of demand forecast accuracy and timely submission of forecast reports from zones in its balance score card and business matrix for financial year 2014/2015. In reviewing the balance score card and Business plan matrix for the MSD zones we found that only three out of nine zones had covered activities relates to demand forecast in their plans.

### 5.3.2 Execution of monitoring Indicators

According to M&E operating procedures, the responsibilities divided into four parts namely Director General (DG), M&E manager, M&E team (officers) and data providers.

DG was responsible for reviewing scorecard results for accountable metrics and providing feedback on metric performance and performing root cause analysis on issues contributing to underperforming metric.

M&E Manager was responsible for receiving metrics from M&E team each reporting cycle, compiling and reviewing the complied balanced scorecard for data anomalies and presenting to Executive Management Team (EMT). Gathering feedback on metric performance and communicating back to M&E

team. Equally, the M&E Manager was responsible for guiding M&E team on analysing the data based on feedback from EMT and validating results

M&E Team (M&E Officers) was responsible for creating the balanced scorecard metrics and revalidating data based on EMT feedback. Data providers were responsible for providing data on non-EPICOR 9 metrics to M&E team on the first week of each reporting cycle.

According to interview with the officials in MSD, the progress report had to be prepared by the MSD M&E unit and submitted quarterly to DG for further action. The similar practice was done before MSD entered into balance score card. The audit team found further improvement relating to the availability of more number of indicators covering wide part of MSD operation compared to the financial year 2012/2013 and way back.

#### **i. Demand forecast**

According to the review of the indicators that was done by MSD in the year 2012/2013, demand forecast activity has been integrated to demand planning unit established parallel with the introduction of balance score card system. Furthermore the introduction of essential guideline in forecasting and managing demand levels in October 2014 has addressed most of the operational challenges and gaps that existed before. However, the challenge remains to operationalize and integrate the manual with the already established Strategic Plan 2014-2020 together with the collection and use of actual consumption data from the HF's that is used in estimating the demand forecasts.

#### **ii. Effectiveness in receiving, processing and delivery of orders**

The audit team noted found that indicators used to assess the effectiveness in receiving; processing and delivery of orders were available. However, some of them were not effectively used especially at MSD zones level. For instance the team found that the receiving of orders from health facilities were not recorded properly in the ILS register and for those which had that information did not analyze them and take appropriate action.

Likewise to order processing and delivery, the audit team noted that the mechanism for record order processing was in place but was not functioning. The tracking of delivery time was also a problem since the invoice provided by MSD had no receiving date. Also health facilities rarely recorded dates when they were receiving these deliveries.

### iii. Fulfillment of orders

Order fulfillment indicator was more used indicator by MSD since the period of Orion (2010-2012) up to the introduction of Epicor 9 in the financial year 2012/2013. The audit team observed that MSD had been assessing the order fulfillment consistently in all visited zones. The risk area was the correctness of the information reported because in some zones the customer asked what was available first and then placed order accordingly by ordering what was available. This undermined the intention of having order fulfillment indicator.

### iv. Monitoring of LGAs' satisfaction

During the audit, the team found that the Zonal Stores received customer complaints on availability of medicines and medical supplies. However, team found that most of customers had no funds to procure the requested items due to late disbursement of funds. Department was not able to hold large volumes of medicines due to debt problem and late disbursement of fund.

### 5.3.3 Effectiveness of monitoring system

The audit team noted that they were a lot of efforts done towards improving the MSD monitoring system since 2012 in relation to the years before 2012. Noted further that MSD made major changes in its operation that include; the introduction of M&E unit, the MSD' quality business processes certification by International Standard Organization (ISO), Introduction of Epicor 9 and balance score card system as well as the replacement of OPRAS with DRIVE<sup>37</sup> system in performance appraisal of their staff.

<sup>37</sup> DRIVE is performance appraisal system introduced at MSD July 2014.

Analysis of the changes introduced by MSD suggests significant improvement in effectiveness of monitoring system. However, there are some areas for improvement in order to make the Monitoring system more effective. These areas included indicators for measuring quality of demand forecast and staff productivity in its operation.

### **Reasons for inadequate monitoring**

The reasons noted by the audit team which contributing inadequate monitoring in MSD as explained below.

#### **i. Inadequate staffing for conducting monitoring**

The audit team found that the M&U unit had only three staff, the manager and two officers assisting him. The staffing level for this unit was 3 staff including the manager. This implies that there was inadequate staffing for conducting monitoring. The limited staffing has contributed to inadequate monitoring.

#### **ii. Inadequate capturing and analyzing information especially from source which data maintained manually**

As indicated earlier in this report MSD used Epicor 9 to extract information which was used in the process of executing some of the indicators such as order fill rate. However, findings revealed that there were some information which measured other parameters like order processing and packing time. Nevertheless, the measurements were not used effectively. The areas where data were captured manually such as demand forecast, delivery time, receiving date of customers order and others were hard to be implemented. For instance in the visited zones the ILS register were not filled. Furthermore the tracking of demand forecast reports submitted by LGAs were not in place.

### iii. Limited number of indicators reflecting the staff productivity on the key operational process

In reviewing the MSD documents related to monitoring, the audit team found that there was no evidence on whether MSD determined the productivity of its staff. The team observed that processes such as preparation of material queue, picking, packing and dispatching could be measured in terms of time taken and number of output produced per staff or group staff. However, this was not in practice.

### iv. Lack of comprehensive guideline for monitoring

During the audit the audit team found out that the monitoring guideline which clarifies how monitoring is planned executed and reported were not in place. The standard operation procedure covered the role and procedure of monitoring in general. There were no adequate directives like how target were set in different levels, the benchmark data such as processing time, how the other managers were responsible for using the monitoring reports and data to measure their targets.

Other methods of monitoring like inspections or supervision which was very crucial for verification of some information, but was also not incorporated in the system. This entails that there was inadequate monitoring hence affecting the overall MSD'S effective performance.

#### 5.3.4 Evaluation of MSD activities

The audit team found that the coverage of evaluation issues as per the standard operating procedure for monitoring and evaluation was limited. The audit team reviewed the annual business plans of 2014/2015 and found that there were no plans for evaluation of MSD operation apart from evaluation of stakeholder's confidence. In addition, the audit team found that there were no plans for short term or long term evaluation. In most cases evaluation was compounded with monitoring while these were two separate processes. Nevertheless, it was not clear that how many evaluations and of which type needed to be conducted by MSD either externally by Consultant or internally by M&E unit.

**CHAPTER SIX****CONCLUSIONS**

Our audit findings presented in the previous chapters give us reasons to draw the following conclusions:

**6.1 General conclusion**

A general conclusion in this report is that, the performance of MSD in ensuring timely availability of medicine and medical supplies to the health facilities was limited due to internal and external factors presented by auditors. Among the key internal factors include forecast of demand and timely order processing and delivery to health facilities. External factors include irregular release of funds from MoF/MoHSW as delay in disbursement of funds as well as unreliable funding to MSD.

Nevertheless, the monitoring of MSD performance conducted by MoHSW mostly focused on the availability of medicine and medical supplies in health facilities. Areas like demand forecast, processing and delivery of orders were not given priority in this regard.

**6.2 Specific conclusions**

The following are specific conclusions:

**6.2.1 Demand Forecast**

The assessment by the auditors showed that the demand forecasting exercise at MSD was not been effectively done. The system of collecting consumption data from the LGAs was very weak because there was no enforcement mechanism for the LGA to comply with it. There was neither comprehensive guideline nor a memorandum of understanding between MSD, PMO-RALG and MoHSW focusing on how to streamline the whole process of demand forecasting from health facilities to national level.

Lack of MoU in this area hindered the effective coordination of the national drugs quantification exercise between planning and budgeting at the higher level (MoHSW) through PSS and Supply on the other side (MSD). Key information on government budget for EMMS was not harmonized between

the two entities.

## 6.2.2 Timely distribution of medicine and medical supplies

### Order processing and delivery

The distribution of EMMS by MSD has not been done effectively. In one side the assessment by auditors showed that the processing of orders consumed more time compared to delivery of orders (direct and indirect delivery) to health facilities. The processing time of orders was not adequately captured by the MSD in both Central and Zonal stores.

On the other side the consignments of essential medicines and medical supplies have not been reaching the public health facilities on time. The combination of the two aspects above has ultimately led to the continuing delays in delivery of essential medicines and medical supplies to the public health facilities.

There was no standard time for order processing set for the MSD Zonal offices. The one which was available at the central office was not effectively enforced. It was unclear on how data related to order processing and delivery are captured, analyzed, reported and who was responsible for that.

For example MSD sales invoice did not show the reference number of R&R and the space for receiving date. Some zones did not maintain register for the orders received from health facilities which hampered the whole process of establishing reliable processing and delivery times.

Furthermore, we noted that in order processing there was no clear indicators which measured the performance of individual performance from receiving of orders to dispatch. MSD did not consider checking the number of staff in each department.

Equally, MSD did not assess the level of productivity per individual person based on who is responsible in translating needs into orders, generating the picking list and picking orders, verify the picked orders, booking the orders for packing and authorizes the transfer to distribution section.

The performance of each staff is not measured effectively especially on the key the internal processes to establish a cause of long order processing,

long distribution and delivery time that leads to availability of EMMS in health facilities.

### **Order fulfillment**

In case of order fulfillment MSD has done its level to assess regularly the level of order fulfillment to its client. However, the rate of unfulfilled orders continued to be a challenge to MSD. The major explained factor was delay in releasing the fund for procurement of medicine and medical supplies.

However, factors like weakness in demand forecast, processing and delivery have not been assessed to establish to what extent they affect order fulfillment. The reporting of missing items was not given priority especially in processing of ILS orders. Therefore this had an impact on accuracy of data reported.

### **6.2.3 Monitoring and Evaluation of performance of distribution of essential medicines and medical supplies**

The MoHSW does not have an effective system for monitoring and evaluation of implementation of objectives and targets relating to the timely availability of EMMS. There were no indicators designed to measure the effectiveness of distribution of essential medicines and medical supplies by MSD.

Important aspects to measuring the availability of EMMS like accurate demand forecasting or, processing and delivery times were not being monitored by MoHSW as input indicators of timely availability of EMMS. Ministry have been focusing much on drug tracking which aim to measure the availability of medicine and not the delay in distribution of these medicines.

There was little evidence on short term and long term evaluation on MSD performance especially on the processing and delivery orders. Likewise, there was no internal evaluation conducted specifically for supply chain system. Most of evaluations were generally focusing on the entire health system. The lack of performance agreement between MSD and MoHSW affected the way MoHSW particularly PSS assesses the performance of MSD.

The overall financial viability of MSD was at stake due to growing government debt with erratic disbursement of funds from MoHSW. The issues of MSD operating on pre-determined prices for its products without consider market prices, disbursements delay and falling of normal sales are the major challenges for the survival of the MSD business operations in the near future.

The debt growth was leading to the challenges of working capital to finance the MSD revolving funds for procurement of medicines and medical supplies. Due to expansion of MSD operational base, the debt led to challenges in maintaining sufficient working capital to finance the sales growth, and in financing the Direct Delivery (DD) of medicines and medical supplies to health facilities in terms of; fleet replacement, fuel, repair and human resource.

Furthermore, we noted that there was inadequate protection of MSD operating environment. The MSD Act did not have the clause which clearly protected the erosion of MSD capital. Part V of the Act which covers Financial and Miscellaneous provisions, section 13(2) stated that funds and other resources of the Department shall constitute a revolving fund to be applied for self-sustaining operation of Department.

This clause was very light in the operation situation of MSD where government was signing various MoUs with the development partners without assessing the cost implication to establish financing arrangement. Cost such as clearance, storage and distribution of some of the products donated by donors were not budgeted for by the government which added the government debt which eventually eroded MSD working capital.

## CHAPTER SEVEN

### RECOMMENDATIONS

This chapter contains recommendations to the Ministry of Health and Social Welfare (MoHSW) and Medical Store Department (MSD). The National Audit Office believes that these recommendations need to be fully addresses in order to improve the forecast of demand and distribution of essential medicines and medical supplies as well in making better use of tax payers' money.

Therefore, the following are the recommendations for MSD and MoHSW

#### 7.1 The recommendation to MSD

##### Demand forecast

1. MSD in collaboration with MoHSW need to consider how best they can integrate process of developing demand forecast in the CCHP Guideline in order to save time and cost for both parties LGAs and MSD by benefiting from the already established structure;
2. MSD management should ensure that the Zonal offices are involved in assessing the quality of demand forecasts reports received from the LGAs under their zone before submitting to the MSD HQ; and
3. MSD should strengthen their demand forecast process by developing a system that would ensure a steady availability of consumption data that could be used as input in the computation of demand forecasts.

##### Oder processing, delivery and fulfillment

4. MSD has to consider establishing the performance criteria, assess the level of productivity per individual person in whole process of processing

and delivery of orders to its clients;

5. MSD needs to establish and review regularly the standard time as benchmark for measuring various operations such as order processing and use them effectively to improve performance;
6. MSD should consider developing a manual which will guide in details the issue of monitoring and evaluation including how the information can be used to improve performance; and
7. MSD should review the performance of its EPICOR 9 enterprise system to see if it promotes to improvements in service delivery of MSD.

## 7.2 The Recommendation to MoHSW

1. MoHSW needs to strengthen the national supply chain system which will map all key actors, define their roles and establish accountability structure to enhance its operations;
2. MoHSW in collaboration with MOF should ensure timely disbursement of funds as per approved budget to MSD to enable efficiency in its operations;
3. The MoHSW need to strengthen the way it monitors performance of MSD as well as developing the performance agreement with MSD;
4. MoHSW has to consider reviewing its arrangement on how to finance the cost related to clearing, storage and distribution the donated medicines from the vertical programs; and
5. The MoHSW in collaboration with MoF has to develop the strategy which will ensure the government commitment in settlement of the MSD debt in specified timeframe.



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**Appendix 1: Responses from Ministry of Health and Social Welfare (MoHSW)**

**A: Overall responses**

The Ministry accepted the comments made in the Performance Audit Report and formed part of the areas for improvement in the Ministry

**B: Specific responses**

SN	Recommendation	Comment(s)	Action(s) to be taken
1.	MoHSW needs to strengthen the national supply chain system which will map all key actors, define their roles and establish accountability structure to enhance its operations.	<ul style="list-style-type: none"> <li>The accountability structure of MoHSW with LGAs is still not well functioning. Eg In case of dispute handling there is no action line between</li> </ul>	<ul style="list-style-type: none"> <li>Implementation of Logistics Management Unit that intends to strengthen the National Supply Chain System is in place</li> <li>The key actors and their</li> </ul>

SN	Recommendation	Comment(s)	Action(s) to be taken
		LAGs and MoHSW	<p>roles have been well defined</p> <ul style="list-style-type: none"> <li>• Accountability structure of LMU with other key actors have been established</li> <li>• The Pharmaceutical Sector Action Plan 2020 is in place to streamline the use of limited resources</li> <li>• The Toolkit for best practices in health commodities management and governance is in place and scaling up to all councils, two councils have been covered</li> <li>• Developed Standard Operating Procedures for</li> </ul>

SN	Recommendation	Comment(s)	Action(s) to be taken
			quantification and ready for application
2.	MoHSW in collaboration with MOF should ensure timely disbursement of funds as per approved budget to MSD to enable efficiency in its operations.	<ul style="list-style-type: none"> <li>• Need for more advocacy for health to become the priority number one</li> <li>• Need for establishing quarterly meeting between MoHSW and MOF to address critical issues</li> </ul>	<ul style="list-style-type: none"> <li>• Timely submit disbursement schedule to MOF</li> </ul>
3.	The MoHSW need to strengthen the way it monitors performance of MSD as well as developing the performance agreement with MSD.	<ul style="list-style-type: none"> <li>• Need for MoHSW delegating direct supervision PSS</li> </ul>	<ul style="list-style-type: none"> <li>• Establish mechanism/ MoU and indicators for performance monitoring and information sharing between MSD and MoHSW, in coordination with the MSD Board</li> </ul>
4.	MoHSW has to consider reviewing its arrangement on how to finance	<ul style="list-style-type: none"> <li>• See how best the handling charges can</li> </ul>	<ul style="list-style-type: none"> <li>• The MoHSW is currently reviewing all the handling</li> </ul>

SN	Recommendation	Comment(s)	Action(s) to be taken
	<p>the cost related to clearing, storage and distribution the donated medicines from the vertical programs.</p>	<p>be reduced to health facilities</p>	<p>charges done through MSD</p> <ul style="list-style-type: none"> <li>• Consultant has been identified and assigned to review based on terms of references and the report be ready by end of February,2015</li> </ul>
5.	<p>The MoHSW in collaboration with MOF has to develop the strategy which will ensure the government commitment in settlement of the MSD debt in specified timeframe.</p>	<ul style="list-style-type: none"> <li>• MoHSW and MOF to come up with compensation strategy</li> </ul>	<ul style="list-style-type: none"> <li>• The MoHSW is committed to pay MSD debt wherever the budget allows</li> <li>• A debt of 41.5 billion has been identified, out of it 30 billion has been paid</li> <li>• Part of the debt is yet not verified and is underway by june,2015</li> <li>• Strategy to ensure the debt do not grow is in</li> </ul>



SN	Recommendation	Comment(s)	Action(s) to be taken
			place

## Appendix 2: Responses from Medical Stores Department

### A: Overall responses

MSD is engaged in improving stock availability through strengthening the demand forecast process by developing a system that would ensure a steady availability of consumption data from LGAs that could be used as input in the computation of demand forecasts. Also Introduction of eLMIS, ILS gateway and HMIS assists in the development of quality demand forecast from LGAs, Zonal Offices and MSD central based on actual consumption data and not on sales

### B: Specific responses

SN	Recommendation	Comment(s)	Action(s) to be taken	Timeline
1.	MSD in collaboration with MoHSW need to consider how best they can integrate process of developing demand forecast in the CCHP Guideline in order to	MSD will harmonize Business planning timetable in order to capture inputs of demand forecasts from CCHP	The establishment of the Electronic Logistic Management information System (eLMIS) will help MSD in developing the demand forecast on time.	30 <sup>th</sup> April 2015

SN	Recommendation	Comment(s)	Action(s) to be taken	Timeline
	<p>save time and cost for both parties LGAs and MSD by benefiting from the already established structure.</p>		<p>However, MSD is currently taking initiative to link the Demand Planning Technical Working Manual (DPTWM) with Comprehensive Council Health Planning (CCHP) Guideline in order to streamline the forecast exercise in the LGAs. Meanwhile two areas have been identified to be potential in linking the two documents (DPTWM and CCHP Guideline);</p> <ul style="list-style-type: none"> <li>a) O and SP excel tool of MSD to be linked with the CCHP electronic web based MSD Forecast excel</li> </ul>	

SN	Recommendation	Comment(s)	Action(s) to be taken	Timeline
			tool templates to be integrated in the CCHP quantification electronic web based.	

SN	Recommendation	Comment(s)	Action(s) to be taken	Timeline
2.	MSD management should ensure that the Zonal offices are involved in assessing the quality of demand forecasts reports received from the LGAs under their zone before submitting to the MSD HQ.	Implementation in progress	With the current set up zones are required to do analysis, assessing reports and be responsible in analyzing and converting raw forecast data into order forecast before submitting the same to HQ.	31 <sup>st</sup> March 2015
3.	MSD should strengthen their demand forecast process by developing a	We concur with auditor recommendation	The Ministry of Health and Social Welfare (MoHSW) has established a Logistics	30 <sup>th</sup> June 2015

SN	Recommendation	Comment(s)	Action(s) to be taken	Timeline
	system that would ensure a steady availability of consumption data that could be used as input in the computation of demand forecasts.		Management Unit (LMU) to help MSD obtaining the consumption data through an electronic logistics management information system (eLMIS. MSD is hoping that this system will ensure a steady availability of consumption data throughout.	
4.	MSD has to consider establishing the performance criteria, assess the level of productivity per individual person in whole process of processing and delivery of orders to its clients	We concur with auditor recommendation	MSD will develop standard time for order processing through improving distribution calendar. We will also strengthen the capacity of staff of proper maintenance of registers for recording time taken for each key activities	30th June 2015

SN	Recommendation	Comment(s)	Action(s) to be taken	Timeline
5.	MSD needs to establish and review regularly the standard time as benchmark for measuring various operations such as order processing and use them effectively to improve performance.	We concur with auditor recommendation	MSD will develop standard time for order processing through improving distribution calendar. We will also strengthen the capacity of staff of proper maintenance of registers for recording time taken for each key activities	30th June 2015
6.	MSD should consider developing a manual which will guide in details the issue of monitoring and evaluation including how the information can be used to improve performance	We concur with auditor recommendation. MSD M&E manual will be updated to reflect the current M&E framework under balance-Scorecard taking on board detailed steps which clarifies how	The M&E Manual to be prepared within 2014/15.	31 <sup>st</sup> March 2015

SN	Recommendation	Comment(s)	Action(s) to be taken	Timeline
		<p>monitoring is planned, executed and reported and taking adequate directives like how target are set in different levels, the benchmark data such as processing times, how the other managers are responsible for using the monitoring reports and data to measure the targets</p>		

SN	Recommendation	Comment(s)	Action(s) to be taken	Timeline
7.	MSD should review the performance of its EPICOR 9 enterprise system to see if it promotes to improvements in service delivery of MSD.	<p>The MSD epicor-9 system has improved a lot as explained below:</p> <ul style="list-style-type: none"> <li>• The improvement of connectivity through use of both fiber optics and Vodacom's Microwave from previous use of TTCL Copperware.</li> <li>• The periodic assessment of E-9 performance through progress reports prepared using balance scorecard framework.</li> </ul>	The upgrade of epicor-9 to version epicor-10 as when the financials will be available.	31 <sup>st</sup> June 2015

SN	Recommendation	Comment(s)	Action(s) to be taken	Timeline
		<ul style="list-style-type: none"> <li>• Staff are now conversant with the epicor-9 applications as continuous training has been made</li> <li>• The problem of slowness of the system will be permanently resolved through upgrade of epicor-9 to version Epicor-10</li> </ul>		

### Appendix 3: Audit Questions and Sub Questions

This report provides the results obtained from the following two audit questions:

**Audit Question 1: Does MSD conduct and comply effectively with the demand forecast practices so as to ensure realistic forecast?**

Sub questions	
Sub question 1.1	Does MSD's planning of the demand forecast activities address the issues of improving the quality of forecast?
Sub question 1.2	Does MSD ensure demand forecast is conducted effectively and all actors submit their reports as per requirements?
Sub question 1.3	Are the tools used in conducting demand forecast ensuring the production of realist demand forecast reports?
Sub question 1.4	Are the factors considered in conducting demand forecast are in line with the best practices of conducting demand forecast?
Sub question 1.5	Does the MSD ensure the data collected are analyzed effectively and used for improvement by all actors?
Sub question 1.6	Is there effective reporting mechanism of demand forecast results for ensuring action are taken for improving the quality of the reports.

**Audit Question 2: Does MSD effectively distribute essential medicines and medical supplies for ensuring timely availability of medicines and medical supplies in health facilities in Tanzania?**

Sub questions	
Sub question 2.1	Does MSD have effective mechanism of ensuring orders processing is done timely?
Sub question 2.2	Does MSD have effective mechanism of ensuring orders delivery is done timely?
Sub question 2.3	Does MSD have effective mechanism of ensuring order fulfillment rate is improving?

**Audit Question 3: Does the MoHSW effectively monitor and evaluate the implementation of its objectives and targets relating to the timely availability of medical supplies in health facilities?**

Sub questions	
Sub question 3.1	Does MSD has appropriate monitoring plan for distribution of medicines medical supplies at different level?
Sub question 3.2	Does MoHSW has developed and make effective use of indicators for monitoring distribution of medicines and medical supplies?
Sub question 3.3	Does the tools used by MoHSW for monitoring distribution of medicines and medical supplies work effectively?
Sub question 3.4	Does MoHSW have effective mechanism for reporting and assessing performance in the monitoring of distribution of medicines and medical supplies?

## Appendix 4: Methods of Data Collection

The main elements of our fieldwork, which took place in piece meal between September 2013 and April 2014, were interviews and reviews of documents were done.

### Interviews

Interviews were conducted in order to confirm or clarify information from the documents reviewed, and to find clues to relevant information in cases where information in the formal documents was lacking or missing. Officials from Medical Store Department, Ministry of Health and Social welfare, officials in the visited LGAs and Incharge of Health facilities were interviewed in order to obtain overall knowledge on demand forecast, order processing and delivery and monitoring and evaluation systems in supply of EMMS. The officials interviewed included:

#### Medical Store Department

- Director of Zonal Operations
- Director of Logistic
- Director of Finance and Planning
- Warehousing Manager
- Quality Assurance Manager
- Sales manager
- Corporate and Public Affairs Officer
- Monitoring and Evaluation officer
- Zonal Manager in visited zones
- Warehousing officer in visited zones
- Sales officers in visited zones
- Demand planning officer
- Supplying Planning officer

#### Ministry of Health and Social welfare

- Chief Pharmacist
- Officers in Pharmaceutical Service Section

- Officers in Health Services Inspectorate and Quality Assurance
- Officer responsible for Monitoring and Evaluation

### Local Government Authorities

- District Executive Director
- District Medical Officer in visited LGAs
- District Pharmacists I visited LGAs
- Incharge of Health Facilities visited
- Health staff responsible with dispensing of medicines in Health facilities visited
- Health Staff responsible with stores management in Health facilities visited

### Document Review

During the course of the audit various documents were reviewed in order to get various information regarding demand forecasting, order processing and delivery of EMMS as well as associated monitoring and evaluation systems in place for supply chain. It was also used to verify information obtained through interviews and observations at entry points. The documents reviewed fell within the period of the audit (2010/2011 – 2012/2013)

The reviewed documents included:

MSD Medium Term Strategic plan 20014-2020

- Health Sector Strategic Plan III (HSSP Iii) July 2009- June 2015
- Strategic Review of the National Supply Chain for health commodities in Tanzania 2013
- Council Comprehensive Health Plan Guideline of 2011
- Integrated Logistic System Manual 2012
- MSD Client Service Charter
- Medical Store department, Zonal Replenishment Ordering SOP with reference WH-SOP-09, 2013
- Medical Store Department, Supply and Demand Planning Process. SOP with reference no: INV-SOP-01.), 2013

- Medical Store department, Order fulfillment SOP with reference no: Wh/SOP/06 of 2013
- Medical Stores Department, Order Dispatch procedures SOP with reference no: Wh/SOP/04 of 2013
- MSD Zonal stock ledgers 2010-2013
- Zonal Transfer in and out reports
- Report and request made (R&R) 2010-2013
- MSD quarterly progress reports
- MSD financial reports

## Appendix 5: Comparison between the percentages of total quantity forecasted against total sales

The comparisons were made for a period of three financial years 2010-213 for 15 selected medicines and medical supplies.

Item Description	2010/2011	2011/2012	2012/2013
Albendazole tabs 200 mg	(26)	1	(25)
Amoxicillin caps 250mg	(24)	1	(19)
Paracetamol tabs 500 mg	(48)	1	(40)
Oral rehydration salts (ors) for 1 litre powder	(36)	1	(70)
Oxytocin 1ml inj 5iu/ml	(43)	0	(26)
Quinine 2ml inj 300mg/ml	(16)	0	(41)
Povidone iodine 10 % solution	(18)	(38)	(94)
Gloves examination latex non-sterile disposable large	6	14	(29)
Syringe disposal with needle 5cc	(66)	(35)	(96)
Cotton wool absorbent 500 g	(23)	3	(46)
Bed hospital	6	0	(57)
Hot air sterilizer 20 litre capacity ss	(2)	0	51
Sphygmomanometer aneroid (bp machine) giant wall model	(89)	41	(24)
Scale adult metric 140 kg x 100g	(88)	100	4
Hemaguhb machine <sup>38</sup>	-	-	-

<sup>38</sup> The audit could not get the data for this item

## Appendix 6: Comparison between the percentages of quantities forecasted against procured

The comparisons were made for a period of three financial years 2010-213 for 15 selected medicines and medical supplies

ITEM DESCRIPTION	2010/2011	2011/2012	2012/2013
Albendazole tabs 200 mg	191	(100)	(100)
Amoxicillin caps 250mg	6	81	(84)
Paracetamol tabs 500 mg	(35)	90	(56)
Oral rehydration salts (ors) for 1 litre powder	330	(100)	(100)
Oxytocin 1ml inj 5iu/ml	(64)	(45)	(100)
Quinine 2ml inj 300mg/ml	(100)	(40)	(16)
Povidone iodine 10 % solution	(29)	(40)	(1)
Gloves examination latex non-sterile disposable large	(100)	99	(41)
Syringe disposal with needle 5cc	(33)	(100)	(100)
Cotton wool absorbent 500 g	(14)	24	(24)
Bed hospital	(100)	119	(55)
Hot air sterilizer 20 litre capacity ss	(100)	(100)	(100)
Sphygmomanometer aneroid (bp machine) giant wall model	51	(100)	(100)
Scale adult metric 140 kg x 100g	(100)	(100)	(100)
Hemaguehb machine <sup>39</sup>	-	-	-

<sup>39</sup> The audit could not get the data for this item.