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Ministry of Health and Social Welfare



Tanzania: Strategic Review of the National Supply Chain for Health Commodities

April 2013



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Acronyms

AIDS	Acquired immunodeficiency syndrome
ARVs	Antiretrovirals
BoT	Board of Trustees
CCM	Country Coordination Mechanism
CHF	Community Health Fund
CSO	Civil society organization
DANIDA	Danish International Development Agency
DFID	Department for International Development
DMO	District Medical Office
EML	Essential medicines list
EMT	Executive Management Team
EPI	Expanded Program for Immunization
ERP	Enterprise resource planning system
EUV	End Use Verification
GOT	Government of Tanzania
HBF	Health basket fund
HIV	Human immunodeficiency virus
HMIS	Health management information systems
HR	Human resources
HRH	Human resources for health
HSSP	Health Sector Strategic Plan
ILS	Integrated Logistics System
JSI	John Snow, Incorporated
LGAs	Local Government Authorities
LMIS	Logistics management information system
LMU	Logistics Management Unit
MOF	Ministry of Finance

MOHSW	Ministry of Health and Social Welfare
MSD	Medical Stores Department
NACP	National Aids Control Program
NEMLT	National Essential Medicines List for Tanzania
NBS	National Bureau of Statistics
NGO	Nongovernmental organization
NHIF	National Health Insurance Fund
NMCP	National Malaria Control Program
NTD	Neglected and tropical diseases Program
NTLP	National Tuberculosis and Leprosy Program
OI	Opportunistic Infections
PIFTWG	Pharmaceutical Infrastructure and Food Safety Technical Working Group
PMO-RALG	Prime Minister's Office – Regional Administration and Local Governments
PPRA	Public Procurement Regulatory Authority
PR	Principal Recipient
PSI	Population Services International
PSS	Pharmaceutical Services Section
R&R	Report and Requisition
RHCS	Reproductive and Child Health Services
SCMA	Supply Chain Management Advisors
SCMS	Supply Chain Management System
SDP	Service delivery point
SMS	Short messaging service
SOPs	Standard operating procedures
STGs	Standard treatment guidelines
TFDA	Tanzania Food and Drugs Authority
TB	Tuberculosis
UNDP	United Nation Development Program
UNFPA	United Nations Population Fund
UNICEF	United Nations International Children's Emergency Fund

USG	United States Government
USAID	United States Agency for International Development
WHO	World Health Organization

Executive Summary

Significant gains have been made in improving the performance of the public sector supply chain in Tanzania. The Government of Tanzania, through the Ministry of Health and Social Welfare (MOHSW), has increased its focus in ensuring continuous medicines availability at service delivery points (SDPs). At the 2012 parliamentary session, concerns were raised by parliamentarians (on behalf of their constituents) on the lack of product availability at SDPs. In response, the MOHSW began preparations to undertake an assessment of the national supply chain for health commodities, and requested technical assistance from USAID for this assessment. This assessment examined and synthesized broader systems issues affecting the availability of commodities, the performance of the supply chain, and the ability of Medical Stores Department (MSD) to fulfill its responsibilities.

Quantitative data analysis was completed, and found that the availability of essential medicines, family planning products, maternal and child health products, and malaria medicines is limited, while the availability of antiretroviral (ARV) medicines is significantly better. The following thematic areas are covered, for findings, ongoing and planned interventions, and recommendations: financing, human resources, data visibility, accountability, leadership and governance, operational processes (with a focus on MSD), and the private sector.

Financing

Findings

- There is no consensus on how much funding is required to meet all medicine needs in the country.
- Given current estimates of requirements, funding is insufficient
- The GOT contribution to the national medicines and health commodity requirements has not increased significantly in tandem with population growth, inflation and other factors over the last six years
- The formula for allocating funding for medicines and supplies has been revised and disseminated; however, allocation of funding for medicines and supplies is not adequate.
- There is no agreement on whether all quantities allocated to MSD are disbursed.
- Disbursements are consistently delayed
- An unsustainable level of debt has been accumulating steadily since 1996
- Collection and utilization of cost-sharing funds in the public sector is inefficient
- Challenges with the allocation formula were evident from facility level interviews

Ongoing and Planned Interventions

- The MOHSW, through the National Institute for Medical Research (NIMR) is leading a national quantification for essential medicines
- The Pharmaceutical Infrastructure and Food Safety Technical Working Group (PIFTWG) is reviewing the formula for setting quantities to be allocated to health facility accounts held at MSD, focusing on hospitals and primary health centers (PHCs)

Recommendations

- MOHSW/MOF should pay the debt owed to MSD
- Create an emergency forum involving development partners and GOT to find long term solutions to handling fees that continue to heap debt on MSD.
- Create a special vote from the national treasury to recapitalize MSD.
- Review and conduct a thorough analysis of handling fees charged by MSD to examine whether the current level is sufficient to cover operating costs.
- De-link the allocation of funds from the actual disbursements to MSD by pooling funds (both GoT and health basket fund) to a MOHSW holding account at MSD.
- Use the inter-ministerial forum between MOHSW and MOF to examine realistic mechanisms of reducing the burden of bureaucracy that unnecessarily lengthens the commissioning and allocating of funds for medicines and supplies
- Test and implement innovative plans to boost and standardize collection of cost sharing funds from health facilities
- Implement the recommendations made from the Special Audit Report of MSD

Operational Processes: Focus on MSD

Findings

- While there are undoubtedly challenges with implementing the new ERP, all operational challenges at MSD cannot and should not be attributed to this change in software

Product Selection

- Adherence to Standard Treatment Guidelines (STGs) and the National Essential Medicines List for Tanzania (NEMLT) reported to be limited.
- The MSD catalog was reorganized to be more user friendly and facilitate decision making at the facility level, given budgetary constraints
- Some items on the NEMLT are not routinely kept in stock at MSD
- There does not seem to be a mechanism that would limit health facilities from only accessing products approved on the NEMLT or STGs

- Technological changes around laboratory equipment leading to obsolete equipment is not timely communicated to MSD

Quantification

- Given the historically low stock availability of some products, past consumption information may not be a reliable source of data.
- Different mechanisms are employed by different role players to quantify requirements

Procurement

- Procurement by MSD can only be done when funds are available
- Procurement agreements, following PPRA guidelines, take long to finalize, usually 6 to 8 months
- To reduce the lead time for supply against order, MSD now utilizes framework contracts
- Local suppliers reported dealing with MSD is risky, as they plan for requirements for products after they are contracted with MSD; however, not all contracted quantities are ordered.
- Supply lead times are long
- MSD has recently introduced a strategy to source products for facilities from prequalified local suppliers in case MSD is out of stock.

Order Processing

- Standard bi-weekly resupply from MSD central to zones has not been adhered to.
- Some hospitals complained that their orders are not ready for collection from MSD when they are supposed to be.
- At times, zonal stores act as cross-docking facilities rather than stockholding facilities.
- Health facilities have not been receiving supplies on a quarterly basis, as designed.

Distribution

- Facilities seem to prefer direct deliveries from MSD, but it is unclear whether this has actually improved product availability, given the delays that have been noted at certain facilities in receiving commodities from MSD.
- The delivery charge to facilities is a flat of 120 000 TSh per delivery, which may not be equitable across facilities (also compared to budgets and volume of goods delivered).
- Facilities reported that they are not aware of the exact delivery date from MSD
- Distribution of medicines from MSD does not always follow prescribed schedules

Product Quality

- MSD, hospitals, and health center report quality problems in both medicine and equipment

- The head of the Quality Control Unit at MSD is a nurse, rather than a pharmacist.
- Facilities visited consistently reported receiving short dated and expired stock from MSD
- Expired stock is accumulating, especially at the district levels

Ongoing and Planned Interventions

- Rollout of direct delivery to SDPs.
- Continued roll-out of the new ERP system (EPICOR 9).
- MSD warehouse upgrades, primarily through warehouse-in-a-box
- Review of MSD structure
- Strategy to source products for facilities from prequalified local suppliers, in case MSD is out of stock.
- Accenture Development Partnership work streams
- Network optimization, including options for cross dock facilities, mobile warehouse, and route optimization
- Inclusion of Marks on Tablets procured under MSD

Recommendations

- Facilitate adherence to the NEMLT through limiting the distribution of products only to dedicated levels of care and by implementing or strengthening Drugs Therapeutics Committees to provide input to the list and monitor compliance to the NEMLT and the STGs at facility levels.
- PPA should be reviewed to allow for the provisions for the procurement of medicines, as MSD has already done this.
- Strengthen the coordination and information about procurement between MOHSW, MSD, donor agencies, and other sources of supply.
- Institutionalize quantification efforts
- Improve HR at MSD
- Demonstrate the impact of insufficient funding, delayed funding, and outstanding debt on procurement
- Improve communication with suppliers
- Investigate ways to shorten the total supply lead time
- Continue investments in upgrading MSD zonal facilities
- Determine whether direct delivery has had a causal impact on product availability at service delivery points, and assessing the zonal managers
- Outsource transportation between MSD Central and Zones.

- Establish fee structure for distribution to facilities, relative to volume of goods, distance to facility, etc.
- Map and segment facilities according to lead time; determine the appropriate distribution and resupply schedules based on segmentation
- Develop and adhere to a fixed delivery schedule and disseminate this to facilities well ahead of deliveries to ensure that all facilities know by when to submit their orders and exactly when the delivery will be done.
- Ensure that all changes recommended from the network optimization activity demonstrate value for money and improvement in service
- Establish processes and build additional capacity for post registration assay testing of more batches of products entering the public sector supply chain
- Explore the possibility for MSD to enter into quality control partnership agreements with other local institutions
- Provide clarity on disposal procedures for expired and damaged stock at facility level

Accountability

Findings

- The MOHSW is concentrated at zonal levels; beyond that – regions, districts, and health facilities – fall administratively under the PMO/RALG. Although the perceived and technical performance of facilities is under the MOHSW, it is the PMO/RALG that holds ultimate accountability.
- Health facility staff are supposed to be held accountable by the districts, but the consequences for not fulfilling their responsibilities is unclear
- Community Health Teams have responsibilities for holding facility level staff accountable for stock availability, but are not functioning as designed
- District level staff, especially the district pharmacist, routinely perform supervision as part of the ILS, but this does not seem to impact accountability of lower level facilities.
- Stakeholders do not fully understand what is within MSD’s control and what is not
- Mechanisms for holding MSD accountable are clear
- There is no formal linkage between MSD and local governments
- It is unclear who, and by what mechanism, the MOHSW should be held accountable for some responsibilities

Ongoing and Planned Interventions

- Civil Society Organizations (CSOs), such as Wajibika and Sikika, are increasing and publicizing challenges in the health system (such as product availability), where accountability is lacking
- NGOs are working to strengthen local government capacity to improve accountability

Recommendations

- Link supportive supervision with performance reviews and subsequent rewards (either monetary or non-monetary).
- Review the current supervision mechanism and check list to adequately address commodity availability and staff development at health facilities
- Refine/cement supply chain roles and responsibilities as part of the development of a supply chain master plan
- Implement communication campaign to ensure that all supply chain actors understand their own roles, and the roles of others
- Map and explicitly state mechanisms for how each actor is held accountable (and how they are measured), by whom, and what consequences are for filling designated responsibilities
- Review and refine the working relationship accountability mechanism between MOHSW, PMO-RALG, and MSD and develop quarterly meetings between the various entities to discuss supply chain related issues
- Formally collaborate with CSOs and NGOs working on accountability interventions
- Reactivate the District Health Boards and Facility Health Committees to permanently include commodity availability on the agenda.
- Continue to follow the recommendations of the World Bank program of open governance where the MOHSW is required to put in the public domain all funds provided to the facilities and the facilities to inform what they received from MSD.

Leadership and Governance

Findings

- There is strong political commitment to supply chain strengthening
- Significant organizational change is being undertaken by both MSD and MOHSW
- Not all actors are clear about their own supply chain responsibilities and those of others
- There are several acting staff in positions at MOHSW
- Although PSS has responsibility for overall supply chain performance, there are other entities which duplicate PSS responsibilities. The position of PSS in the MOHSW organogram may compromise its ability to fulfill this responsibility effectively.

- Though the PMO-RALG has the responsibility of holding facilities and staff accountable, the specific responsibilities of the PMO-RALG in the supply chain seem are unclear
- Currently there is no supply chain master plan in place that would guide all role players on implementing and monitoring supply chain actions interventions

Ongoing and Planned Interventions

- The Strategic Review of the National Supply Chain; February/ March 2013
- A health policy is currently under review. The MOHSW reported a pharmaceutical master plan has been drafted but the assessment team was unable to obtain a copy of the draft.
- Inter-ministerial meetings between PMO-RALG that has been started with supply chain matters high on the agenda. It has also been reported that there are intentions to include the President's Office into this forum
- The development of the Logistics Management Unit (LMU) that will be a focal point for information to inform management at MOHSW, MSD and other role players on decision making and strategic direction.
- Proposal to change the status of PSS to a directorate, reporting directly to the CMO, is currently under discussion.

Recommendations

- Empower the identified appropriate entity that owns the supply chain, with requisite decision making power, and solidify the position of PSS.
- Finalize the reporting line for the LMU
- Fill positions of acting staff with permanent staff.
- Review the terms of establishment of MSD Board of Trustees and the MSD Act
- Engage PMO-RALG to secure their support in supply chain strengthening activities on a quarterly basis in coordination with the MOHSW and MSD. The appropriate department within PMO/RALG should be strengthened to focus on supply chain issues.
- Develop a Supply Chain Master Plan, to form the basis for the strategic direction and coordination for supply chain support, interventions and improvement

Data Visibility

Findings

- Reporting rates in the ILS are lower than the reporting rate for the ARV logistics system
- Reporting rates for the laboratory logistics system quarterly reports are much higher than for the laboratory logistics system monthly reports.
- Reporting rates are lower for the paper-based R&R than in the ILSGateway mobile health system

- In the ILS R&R, there are 1,580 separate boxes which the facility staff must fill in.
- There are reports of R&Rs being copied from one reporting period to the next
- The percent of facilities with up to date Stock Cards remains low, at around 50%.
- At one facility, the same data may be captured in different registers
- Same data from the same facility may be reported through multiple channels
- For most products, no national level data on SOH or consumption is currently available.
- MSD must frequently develop ad hoc reports for various stakeholders, including programs and partners, which distracts them from their core business

Ongoing and Planned Interventions

- Continuing rollout of revised ILS.
- Continuing rollout of ILSGateway.
- Continuing rollout of the new ERP, E9
- Development of the eLMIS.
- Implementation of laboratory supplies logistics system
- Implementation of TB and leprosy logistics system

Recommendations

- Revise components of the ILS: who is responsible for data submission, how the data are submitted, what data are submitted (including which products), and/or who is doing the quality checks and calculations
- Pilot facilitated ordering system
- From the facility level, harmonize and simplify the number of ways in which data are being collected and submitted
- Develop routine, standard reports that can be shared with stakeholders
- Develop and implement change management strategy that improves the use of data for decision-making

Human Resources

Findings

- Some facilities do not have sufficient staff.
- Some staff do not have sufficient capacity, especially at the primary health center (PHC) level
- Several facilities have developed and implemented innovative solutions.
- Human resource management and retention is a challenge

- District level staff wear multiple hats, which affects their ability to fill these roles effectively
- District pharmacists have significant responsibilities for ensuring performance of the various logistics systems, which are compromised because of the heavy workload
- At the zonal level, Supply Chain Management Advisors (SCMAs) provide critical oversight and management to ARVs and laboratory items within the zones; however, there is no equivalent for the ILS
- At MSD, HR functions are centralized, limiting the autonomy at the zonal level for HR decisions.
- At MSD multiple interventions and ad-hoc requirements derail and limit staff ability to focus on their core functions and routine activities
- HRH coordination is faced with a number of challenges, in part emerging from decentralization
- In MOHSW, some supply chain responsibilities are currently spread across several different entities (programs, units, divisions) which makes coordination difficult.

Ongoing and Planned Interventions

- SCMAs are active and critical to the functioning of the HIV and laboratory logistics systems
- Vertical programs have a central-level presence (NMCP, NACP, NTLP, RCHS) within the MOHSW
- A logistics management unit (LMU) is in development. The LMU will act as the central coordination unit for all supply chain functions in the public health sector
- Significant capacity building efforts are made towards facility and district staff through ILS trainings and other trainings
- The MOHSW is implementing a Human Resources for Health strategic plan 2008 – 2013
- MSD is also implementing a five year Human Resource plan
- The MOHSW, with assistance from the USAID | DELIVER PROJECT, has taken significant steps to introduce pre-service training in supply chain management for pharmacy students. At the time of the assessment, a curriculum for undergraduate pharmacy students was being rolled out at one university
- MOHSW is planning to build capacity in health facility staff on the management of TB and leprosy medicines and roll out a TBL logistics system

Recommendations

- Align supply chain responsibilities with capacity and sufficiency of staff.
- Review the current role of the District Pharmacist and introduce a new position of District Commodity Manager, in line with the LMU structure

- Identify high performing facilities and districts and scale up sustainable practices that contribute to improved commodity availability
- Devote a portion of the resources obtained through cost-sharing needs to funding performance driven supportive supervision visits especially to primary care health facilities
- Develop motivation and incentive pay-for-performance package that targets staff in primary care facilities
- Engage professional councils to recognize and add supply chain proficiencies to the schedule continuous professional development.
- Develop a master list of all trainings, including pre-service and in-service trainings
- Retain a small portion of collections from health insurance funds to finance operations of facility health committees

Private Sector

Findings

- Local manufacturing is insignificant in relation to the total public sector supply chain needs; MSD is reliant on international suppliers
- Local suppliers felt that they are not competing on the same level with international suppliers
- MSD does not always order products as indicated in framework arrangements
- Local suppliers reported that there were delays in tender adjudication at MSD, and difficulties in tender management and communication
- Suppliers reported significant delays in payments from MSD since July 2012.

Recommendations

- At MSD, improve contract management and communication about needs and performance with its suppliers
- Improve on time payments to suppliers
- Utilize local vendors to supply certain selected low volume products, specialized items, or emergency items on pre agreed terms and more direct supply
- Investigate the modalities and costs to outsource certain functions (e.g. transportation) and support the local private sector; for example, extended delivery by local suppliers
- Explore the potential of increasing procurement from regional suppliers to shorten lead times
- Determine cost efficiency of direct delivery to MSD zones from international or local suppliers

Next Steps

1. Specifically identify who will move this stream of work forward. The MOHSW should identify a specific body or agency to move the recommendations forward
2. Build consensus around each recommendations. Though a formal presentation of the findings and recommendations were given at a stakeholder's workshop, consensus on each recommendation was not obtained.
3. Develop a Supply Chain Master Plan. As noted in the recommendations in the Leadership and Governance chapter, developing a Supply Chain Master Plan can provide an overall framework for strategic interventions and activities to improve the public sector supply chain in Tanzania. The strategic interventions part of the Supply Chain Master Plan can build off of the recommendations offered in this assessment.

Background

Significant gains have been made in improving the performance of the public sector supply chain in Tanzania. Supply chain strengthening efforts for vertical programs have resulted in increased availability of antiretroviral drugs (ARVs), drugs to treat opportunistic infections, and other related commodities. However, general essential medicines availability remains uneven due to a number of various factors. A number of assessments in recent years have attributed frequent stock out of medicines to one or a combination of the following factors:

- inadequate financing
- limited efficiencies within the national supply chain
- poor infrastructure
- outdated and/or manual management information systems
- human resource related challenges
- poor stakeholder coordination

The Government of Tanzania, through the Ministry of Health and Social Welfare (MOHSW), has increased focus on ensuring continuous medicines availability at service delivery points (SDPs). Augmented by development partners' support, several initiatives are currently under implementation to address some of the noted challenges. These include—

- Infrastructure enhancement for Medical Stores Department (MSD) warehouses and delivery fleet expansion
- Ongoing implementation of the Enterprise Resource Planning (ERP) system at MSD
- Strengthening MSD procurement management, performance management, and human resource management
- Distribution system optimization for direct delivery
- Development of electronic Logistics Management Information System (eLMIS) for MOHSW, districts, and higher-level health facilities
- Optimization of the Integrated Logistics System (ILS)
- Design and rollout of laboratory commodity logistics system
- Establishment of the Logistics Management Unit (LMU) under MOHSW
- Implementation of new budget allocation formula at district and facility level for health commodities

However, it is not known whether the initiatives being undertaken are adequate to eliminate product stock-out situations at the central level, including at MSD and all SDPs. At the 2012 parliamentary session, significant concerns were raised by parliamentarians (on behalf of their constituents) on the

lack of product availability at SDPs. In response, the MOHSW began preparations to undertake an assessment of the national supply chain for health commodities, and requested technical assistance from USAID for this assessment.

The focus of the assessment was initially on MSD, a central player in the public sector supply chain, responsible for several key supply chain functions such as procurement, storage and distribution. In 2010, it was mandated to be responsible for last-mile delivery to all 5,000+ public health facilities. However, MSD is not the only actor in the supply chain. MSD is affected by policies—such as the mandate for direct delivery to the last mile—and financing, which is often inadequate to ensure full supply of essential medicines or effective operations at MSD. Furthermore, supply chain performance is also depended upon thousands of health care workers, hundreds of council health management team members, and many regional and central personnel who all play roles and carry responsibilities for ensuring a well-functioning system and adequate supplies.

Stakeholders ultimately agreed that the assessment should include, but not be limited to, a review of MSDs performance. Recognizing the importance of the context in which MSD operates, the assessment would also examine and synthesize broader systems issues affecting the availability of commodities, the performance of the supply chain, and the ability of MSD to fulfill its responsibilities. The objectives of the assessment were as follows:

- Describe the national health commodities supply chain system and MSD’s current core business, functional responsibilities, roles, and relationship to other supply chain actors and functions. Also detail the role of other key stakeholders, including the MOHSW and the Local Government Authorities (LGAs) in the supply chain.
- Review the current role and potential of private sector manufacturers and suppliers in improving product availability in the public health supply chain¹.
- Describe the constraints to overall product availability at the central, zonal and SDP levels, including the strengths and limitations of the existing public sector supply chain. Consider and characterize any differences in supply chain management between MSD-owned products and products owned by a ‘third party’ and distributed by MSD.
- Highlight any policy, legislation and regulatory bodies such as Tanzania Food and Drugs Authority (TFDA) and the Public Procurement Regulatory Agency (PPRA) which have significant impact on MSD, local governments and health institutions fulfilling their current roles and responsibilities.
- Develop a master list of current and planned supply chain interventions (and related impact) focused on improving some aspects of MSD’s work or of supply chain performance as well as their anticipated impact.
- Develop and prioritize short, medium, and long term recommendations on the role of MSD and other stakeholders within the public sector supply chain with a focus on:

¹ The recent experience with private sector participation in the health supply chain through the Affordable Medicines Facility for Malaria (AMFm) will be very relevant here.

- Pathways for mainstreaming and integrating the supply chains for externally financed or subsidized products
- Identifying areas in MSD’s operations that could be improved for efficiency or effectiveness with an emphasis on the financial implications of any proposed changes that ultimately result in improved product availability. These recommendations would feed into the Health Sector Strategic Plan (HSSP) III review and healthcare financing strategy.
- Developing costed proposals on distribution and delivery models that MSD could adopt for all levels of the supply chain.
- Improving the performance of supply chain actors such as the LGA and large hospitals, whose functions are outside of MSD’s scope but that influence MSD’s performance.
- Implementing accountability mechanisms at all levels of the supply chain that would guarantee consistent product availability at the last mile and access by end-users.

A team of four advisors from the Supply Chain Management Systems project (SCMS) and the USAID | DELIVER PROJECT were in Tanzania for four weeks to conduct the assessment. The Terms of Reference used for the assessment can be found in Annex 1.

Methodology

The team used the following methodology for the assessment:

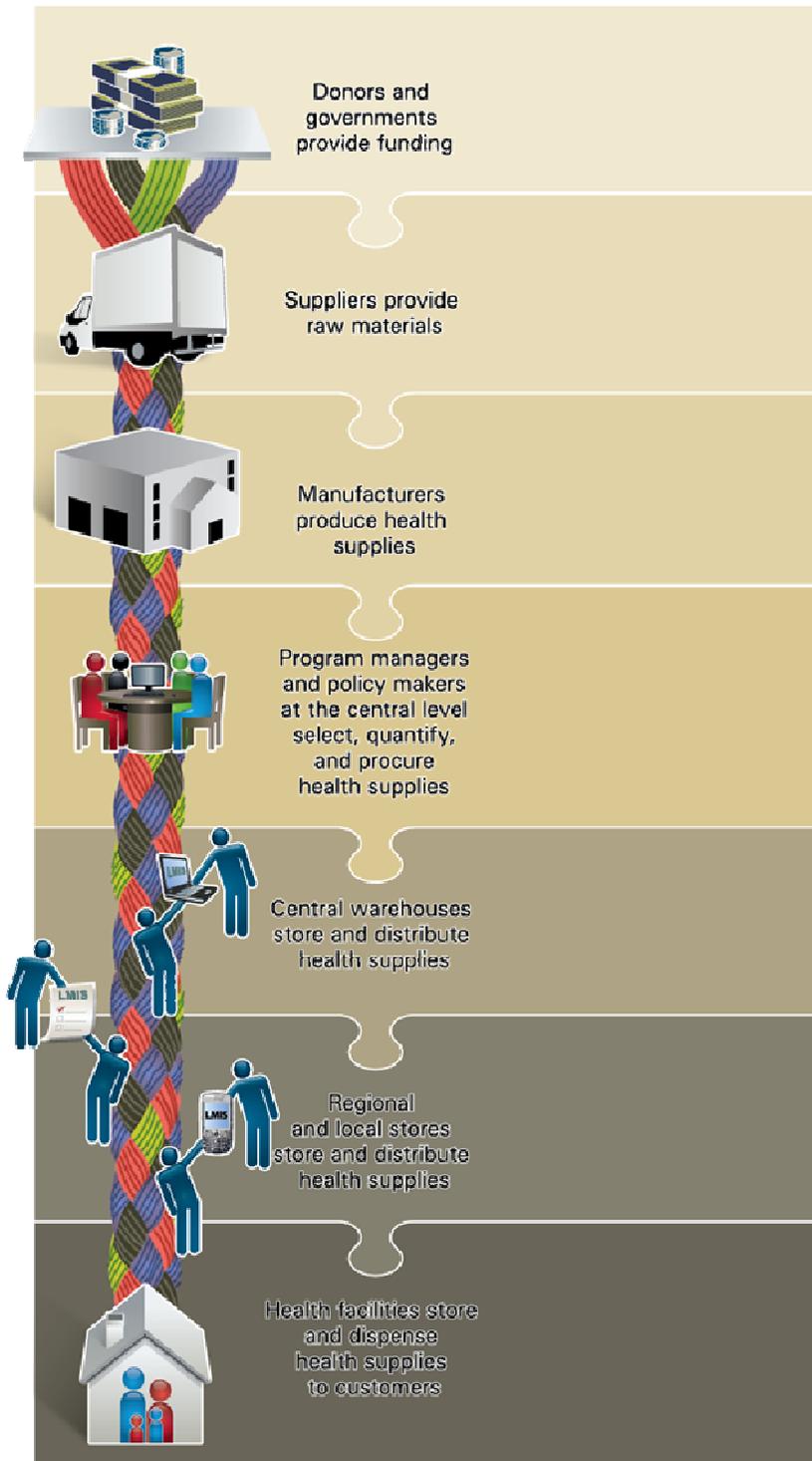
- **Background reading.** Several previous supply chain-related assessments have been conducted in Tanzania. The team reviewed numerous documents, from the MOHSW, MSD, and a range of development partners, to understand different aspects of the supply chain and the context in which it operates and to draw on recommendations that have previously been made. Key reports reviewed included the *Report of the Controller and Auditor General on Special Audit on Drugs Availability at Medical Stores Department for the Period from 30 June 2009 to 30 June 2011* (2011), and *MSD's Medium Term Strategic Plan 2006 – 2013* (updated 2012). Some reports included quantitative data on product availability, such as the GIZ report *Availability and Management of Medicines and Medical Supplies: Findings from an Assessment of 87 Health Facilities in Four Regions in Tanzania* (2011). A full list of documents reviewed can be found in Annex 2.
- **Quantitative data analysis.** There are several sources of quantitative data on product availability, which the assessment team drew from to draw a picture of overall product availability in Tanzania. Sources of quantitative data included the following:
 - The End Use Verification activity (EUV) is a quarterly data collection activity that helps provide improved visibility of health facility level data, implemented by the USAID | DELIVER PROJECT. Data are collected on the availability of essential medicines, family planning products, maternal and child health medicines, and malaria products, as well as reporting rates and whether Stock Cards are up to date. Each quarter's data is a nationally representative sample of all facilities in the country.
 - The ILSGateway is an SMS based reporting system that complements the paper based Report and Requisitions (R&Rs) submitted by facilities. On a monthly basis, facilities submit stock on hand of key family planning and malaria commodities. Currently being rolled out nation-wide, the ILSGateway also monitors the reporting rate of R&R forms and confirms deliveries from MSD.
 - SMS for Life is also an SMS based reporting system, where facilities submit stock status of malaria products on a weekly basis.
 - Supply Chain Management Advisor (SCMA) monthly reports. SCMAs, supported through the SCMS project, are located at MSD zones, and focused on improving availability of ARVs, HIV test kits, and laboratory commodities, as well as improving the visibility of information about those products. The SCMAs submit monthly reports to the SCMS office on stock availability of ARVs, and other key indicators with regards to the performance of the logistics systems for ARVs, HIV test kits, and laboratory commodities.

- **Engagement with key stakeholders.** During the first week of the assessment, the consultants met with key stakeholders including MOHSW (including Deputy Minister for Health, Chief Pharmacist, and Pharmaceutical Services Section [PSS]), MSD (including the Executive Management Team [EMT]), and USAID.
- **Workshop with small group discussions.** A stakeholders meeting was held on February 25th, where preliminary findings were presented (based on initial interviews with key stakeholders and background reading), along with the approach for conducting the rest of the assessment. Several different stakeholders were engaged during the second week of the assessment. When possible, small group discussions were held. For example, representatives from MOHSW programs (including National Malaria Control Program [NMCP], National AIDS Control Program [NACP], National Tuberculosis and Leprosy Program [NTLP], and Neglected Tropical Diseases [NTD]) participated in a roundtable discussion to share experiences and perceptions of the supply chain, and recommendations that they would offer to improve the supply chain. Customized questionnaires were developed for each type of stakeholder interviewed. The following stakeholders were included in discussions:
 - MOHSW sections (PSS, Quality Assurance)
 - MOHSW units and divisions (Information and Communication Technology, Diagnostic Services, Finance and Accounts, Monitoring and Evaluation, Procurement Management Unit)
 - MOHSW programs (NMCP, NACP, NTLP, NTD)
 - NGOs and development partners (see participant list in Annex 3 for a full list)
 - MSD Directorates and Board of Directors
 - Multilaterals (World Health Organization, UNHCR, UNFPA)
 - Bilaterals (USG, Danish International Development Agency [DANIDA], SwissAid)
 - Tanzania Food and Drug Authority (TFDA)
 - Prime Minister’s Office – Regional Administration and Local Government
 - National Health Insurance Fund (NHIF)
- **Site visits to customers of MSD.** Three teams visited three different MSD zones: Mtwara, Mwanza, and Moshi. MSD zonal managers and zonal staff were interviewed, and each team visited a referral hospital, a regional hospital, a district hospital, a health center, and a dispensary. Depending on the time available, some teams visited more facilities. One questionnaire was developed for the MSD zone, and another for the facility level. It was not intended to gather nationally representative quantitative data as part of these site visits, since existing data sources with those data were already available. Rather, the purpose of the assessments was to verify findings at the central level, gain perspective on supply chain performance from end users, and ensure that recommendations offered will be appropriate to the local context.

- **Analysis and presentation.** The last week of the assessment was focused on analyzing all of the quantitative and qualitative data into specific findings and to develop recommendations.

In terms of an overall framework for the assessment, the team adopted the integrated supply chain framework, developed by JSI. This framework explores how to better link demand with supply, and to link funders and suppliers to customers, to ultimately better serve customers and improve product availability. Through this framework, although there may be separate product streams (such

Figure 1. Integrated Supply Chain



as is the case in Tanzania), the levels and functions are managed together into one supply chain. An integrated supply chain is shown in figure 1.

Characteristics of an integrated supply chain include:

- Clarity of roles and responsibilities
- Streamlined processes
- Visibility of logistics information
- Agility
- Trust and collaboration
- Alignment of objectives

Throughout the assessment, the framework was used to determine how the supply chain is currently performing, identify strategic interventions to address challenges that prevent attaining this high performing supply chain, and to understand the influence of all stakeholders on the supply chain.

Logistics Systems and Supply Chain Actors

This chapter provides brief overviews of the different logistics systems in Tanzania, and descriptions of the responsibilities of key supply chain actors.

Overview of Logistics Systems

The following section describes the ILS, the HIV/AIDS Commodity Logistics System, and the Laboratory Logistics System. Some commodities, such as vaccines, are managed vertically. For tuberculosis (TB) commodities, a logistics system has been designed, but not yet implemented. The TB logistics system is planned to be implemented beginning in June 2013.

Integrated Logistics System

The Integrated Logistics System (ILS) was designed in 2004, and integrated several of the previous vertical distribution systems in country. More than 150 products are managed as part of the ILS, including but not limited to: malaria products, family planning products, some laboratory supplies, and a range of essential medicines and medical supplies. The final stages of the ILS rollout were completed in late 2009.

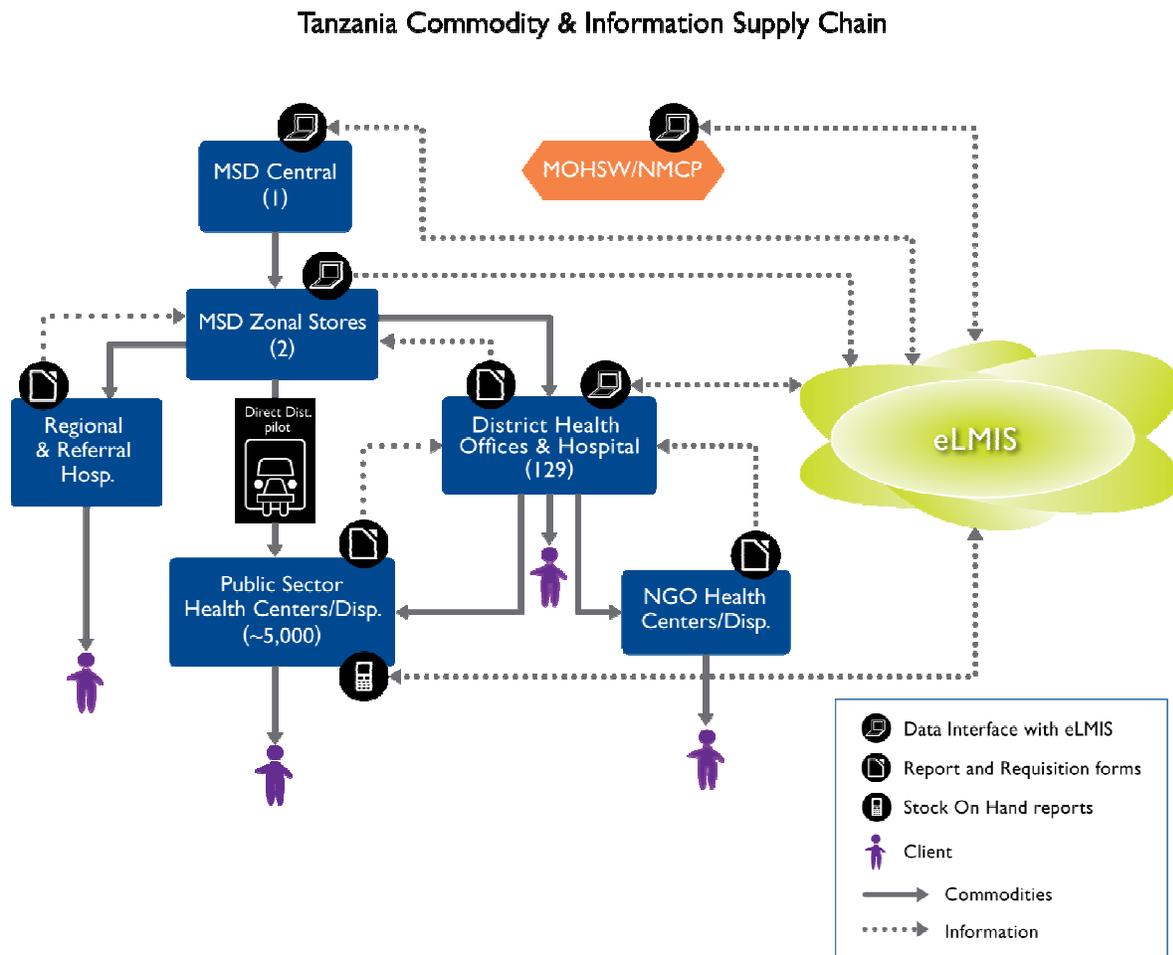
In the ILS, essential logistics data are collected at the facility level and reported up to the district. A combined R&R is completed by facilities on a quarterly basis. Facilities within each district are divided into three delivery groups: A, B, and C. Each month, only facilities within one specific delivery group are expected to submit their R&R forms, providing the district level with time to review and compile R&R forms from relevant facilities. The districts combine facility reports for the entire district and forward them to the appropriate MSD zonal store for order fulfillment.

MSD, a semi-autonomous government entity with 9 zonal stores, is responsible for storage and distribution of all public health commodities in Tanzania. The flow of products in the ILS is illustrated in figure 2. The description of how the system operates follows below.

- Products arrive in country at MSD Central from a variety of funding sources and procurement mechanisms.
- From Central MSD, products are distributed to nine MSD zonal stores through a push system based on the issues data of the previous order period. MSD zones are supposed to receive supplies from MSD on a bi-monthly basis. MSD does not generally adhere to the designed bimonthly distribution frequency.
- Tertiary (Referral Hospitals, 4 in total) and Secondary level hospitals (Regional Hospitals, 21 in total and FBO Hospitals) send their requisitions quarterly and get their supplies directly from the MSD zonal stores.

- Lower level facilities (Health Centers and Dispensaries) determine their needs and send a quarterly request to MSD via their designated district. The district is responsible for compilation, quality checking and approval of all facility orders originating from lower level facilities and passing them on to the zonal MSD.
- MSD delivers individually packed facility orders either directly to the facility or to the district, which then is responsible for distribution to lower level facilities. In a bid to address some of the challenges with product availability and equity in distribution, MSD is currently rolling out the direct delivery of health commodities from the Zonal MSD stores to the facility without going through the district health offices as before. This is currently being implemented in 10 out of the 26 regions with a goal of covering the whole country by the end of 2012.

Figure 2. Flow of products and information



At the MSD zonal stores, data on order quantities (but not essential logistics data) are captured in Excel. An ERP is now being implemented and will be used to manage data. The R&Rs do not flow up to the MSD central from the MSD zonal stores, and an average reporting rate is not routinely available. An electronic logistics management information system (eLMIS) is currently in development. The eLMIS will enable online ordering from facilities that have that capacity; for facilities that do not have that capacity, paper-based forms will still flow up through the district to the MSD zone, where they will be entered into the eLMIS. Once established, the eLMIS will provide more robust data visibility into the national supply chain for better informed distribution to the zonal stores.

Each MSD zonal store has an ILS coordinator, who has responsibility for managing the LMIS. ILS coordinators are supported by USAID | DELIVER PROJECT Public Health Logistics Advisors (PHLAs) who go to the zones every month to review and analyze R&Rs, follow up with districts not reporting, and conduct physical counts of ACTs at the zones.

HIV/AIDS Commodity Logistics System

The HIV/AIDS Commodity Logistics System includes anti-retroviral medicines (ARVs), HIV rapid test kits, and some opportunistic infection (OI) medicines. It is similar to the ILS in the flow of information and products (MSD Central to MSD zones, and either direct to facilities or via the district for those areas that have not yet implemented direct delivery). There is a separate R&R for HIV commodities. As in the ILS, these are submitted on a quarterly basis. One key difference is that in the HIV/AIDS Commodity Logistics System, the District Pharmacist is supposed to aggregate all of the information from the facility level R&Rs.

Laboratory Supplies Logistics System

The laboratory logistics system manages a range of laboratory supplies. As in the ILS and the HIV logistics system, orders are passed through the district, and then submitted to the MSD zones. There is a separate R&R for laboratory supplies. There are a couple of key differences between the laboratory logistics system and the ILS and HIV/AIDS commodity logistics system.

- Some laboratory supplies are ordered every three months while others are ordered on a monthly basis.
- Some laboratory reagents such as controls have very short shelf life (some have three months of shelf life). For these products, MSD coordinates with manufacturer for direct delivery to laboratory facilities. Information on these products are included in the monthly R&Rs.

Overview of Supply Chain Actors

Tanzania's public health supply chain is complex, with many actors and stakeholders. These supply chain actors have various responsibilities, authority and roles, which have either a direct or indirect effect on supply chain outcomes in the country. This section lists these actors and briefly describes their current roles in the supply chain. Each of these stakeholders was interviewed for their

perspectives on the performance of the supply chain, and their role in ensuring product availability at SDPs.

Government of Tanzania Ministries, Departments and Agencies

The Government of Tanzania (GoT), through its Ministries, Departments and Agencies influence the design and performance of the entire supply chain in the country. Through its enactment of laws, regulations and policies, the government determines the mandate and environment in which the supply chain functions. Being the principal source of resource mobilization and allocation, the government can be credited with the provision of the resource envelope for the public health supply chain. As exemplified by the purpose and the genesis of this assessment, the GoT is has the ultimate mandate over the performance of the supply chain.

The Ministry of Finance (MOF) is a key actor among the government entities that has a direct impact on the supply chain. Being responsible to decisions regarding the budgets and its disbursement to the various implementing arms of the supply chain, the role of the MOF is crucial. A fairly commonly held perception is that if there were adequate funds available to procure and distribute required commodities, the public health supply chain would have been able to deliver on the expectations. This perception drives home the crucial role of the MOF, and particularly its Budget and Treasury offices in the performance of the supply chain. The MOF provides direct fiduciary oversight over the financial performance of MSD.

The Tanzania Food and Drugs Agency (TFDA) is another crucial government agency that has a direct impact on the national supply chain, particularly through policies and regulations. TFDA is the regulatory body over product quality, safety and efficacy issues, among others.

The Public Procurement Regulatory Agency (PPRA) is an oversight body, set up by the GoT to ensure that procurement actions undertaken by key actors in the supply chain when appropriate are in compliance with the national laws and regulations. The objectives of PPRA are to ensure the application of fair, competitive, transparent, non-discriminatory and value for money procurement standards and practices; harmonize the procurement systems in Tanzania between the local and central governments; set standards for the public procurement systems in Tanzania; monitor compliance of procuring entities; and build procurement capacity in the country.

The National Health Insurance Fund (NHIF) was established for public sector employees and their dependents, where six percent of employees' salary is contributed, equally shared between the employer and the employee. The Fund's benefits package include: Consultation Fees, Outpatient Services, Medicines, Diagnostic Tests, Inpatient Services, Surgical Services, Physiotherapy and Optical Services. NHIF also provides oversight for the Community Health Funds (CHF) for the non-government employees and private participants in the insurance scheme. NHIF is a key source of financing for the supply chain and a significant stakeholder in its performance.

Ministry of Health and Social Welfare

The Ministry of Health and Social Welfare (MOHSW) is the most significant actor in the public health supply chain. Its relationship to the supply chain can be characterized in many different ways, some of which might even be in conflict with one another. Through multiple arms of the MOHSW, decisions about budget allocation, disbursement, engagement with the donor community, liaising

with other government agencies, such as Customs and Ports, etc., are made. Through the government's decentralization processes, much of the implementation of supply chain functions at the lower levels of the system are devolved to other bodies discussed later; however, the MOHSW has overall responsibility for policies, regulations as well as resource mobilization and allocation for activities in the health sector that has direct bearings on the supply chain.

The Quality Assurance Division of the MOHSW houses the Pharmaceutical Services Section (PSS), a unit within the MOHSW that has the most direct responsibility for exercising the leadership required for the supply chain within the ministry. Decisions about resource allocation for commodities are discharged within this unit. Over the years the PSS and its antecedent the PSU had led the design and roll out of various supply chain interventions in the country with the aim of improving performance and developing sustainable capacity for the supply chain. Through its working relationships with other stakeholders, and the crucial Pharmaceutical Infrastructure and Food Safety Technical Working Group (PIFTWG), various initiatives including the active monitoring of the supply chain is undertaken.

Ministry of Health and Social Welfare Programs

The MOHSW has a number of key vertical program units that have a significant impact on the supply chains. Notable ones among these are the NMCP, the NACP, the Reproductive and Child Health Services (RCHS), the Expanded Program for Immunization (EPI), NTD and the NTLP. These programs have responsibilities that extend through resource mobilization to technical supply chain functions including forecasting and supply planning and may even participate in actual procurement of commodities. Several of these programs play a direct role in determining distribution quantities and plans for commodities that are used within their respective programs. Decisions made by these programs have a direct and often immediate impact on several key performance indicators that are used to monitor supply chain performance in the country. Annual forecasts emanating from quantification exercises led by or undertaken by these programs often dictate resource allocation and procurement of commodities for use in country. The programs are expected to use MSD as a provider for the storage and distribution services, for which the programs are expected to directly pay.

Medical Stores Department

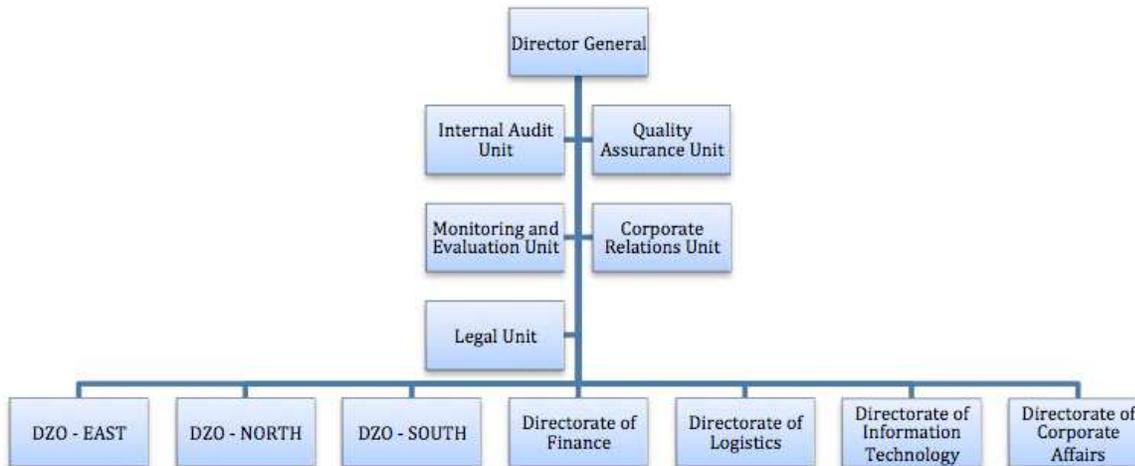
The Medical Stores Department (MSD) is a parastatal supply chain organization that was created by an act of Parliament in 1993 with the expressed objective of making available quality medicines and medical supplies at reasonable prices for use at all approved government and non-government agencies throughout Tanzania. MSD is an autonomous department of the MOHSW and operates on a commercial basis, and is expected to be financially self-sustaining. The organization has a board of trustees (BoT) appointed by the Minister of Health and a Chairman appointed by the President. MSD's commercial operations provide funds for the maintenance and growth of the department without drawing upon outside resources. The organization has 9 zonal warehouses purposefully situated to cater for the geographic spread across the country, in addition to its central facilities in Dar es Salaam.

MSD recently restructured to align with its evolving operations. Key among the objectives of management was to restructure MSD with a view for broader management focus on key core

functions such as Customer Sales and Service, Information Technology, Logistics and Distribution. With strong support from the Director of Finance, more emphasis was placed on Administration and Human Resources. The diagram of the Executive Management Team (EMT) is shown in figure 3. The EMT manages the administration of MSD. This team includes:

- The Director General
- Director of Finance
- Director of Corporate Affairs
- Director of Logistics
- Director of Information and Communication Technologies
- Directors of Zonal Operations x 3 (Northern, Southern and Eastern Clusters).

Figure 3. Executive Management Team of MSD



Restructuring also provided the means for greater participation by personnel in programs, designed to build capacity, train and reinforce critical task management, creating a sense of urgency and also ownership that demands the full participation of everyone. MSD believes strongly that promotion from within is an essential task coupled with succession planning to assure management for the future. Human Resources section under Directorate of Corporate Affairs is responsible to manage the challenge of meeting the needs of over 300 employees.

PMO-RALG, District Health Management Teams and Service Delivery Points

A significant proportion of all the supply chain activities take place in the more than 5,000 health facilities across the nation, where service delivery actually takes place, and the importance of product availability is at its greatest. The government decentralization by devolution, which has a long history and is generally accepted to have begun in 1972, transferred authority to the subnational levels. The creation of Village Councils in 1975 consolidated this devolution and made all the health facilities

and the management structure thereof at the district and sub-district level. Further strengthening of the decentralization process including the establishment of Local Government Authorities (LGAs) ensured that health facilities will no longer be a part of the MOHSW, but that of the Prime Minister's Office – Regional and Local Government Authority (PMO-RALG). Oversight and accountability for performance is the remit of the PMO-RALG.

NGOs and Development Partners

Tanzania's health sector has received significant support from a number of donors and development partners. The supply chain sector has been actively supported over time in various ways. A number of donors provide commodities; in addition, significant investments have been made in providing technical assistance, including several assessments to identify the causes of the non-optimal performance of the supply chain. Several interventions have been made to address the identified issues. Technical assistance has also been provided to address the organizational capacity and technical supply chain design as well as the human capacity challenges that have been identified. A number of technological and/or innovative approaches have been tried or are in the process of being developed with some interventions such as the development and roll out of the ILS.

Bilateral and Multilateral Donor Agencies

The support and impact of the activities of bilateral and multilateral donor agencies on the operations of Tanzania's supply chain cannot be underestimated. Significant aspects of the national programs in malaria, HIV/AIDS, TB, immunization and family planning are driven by and undertaken through donor investments from USAID, the UK's Department for International Development (DFID), Global Fund, UNFPA and the World Bank, among others. The quantities and timing of significant proportions of the commodity requirements for these program areas rest with the planning cycles, timelines and performance in these donor driven programs. Often, donors have unique reporting requirements, and can rely on MSD directly and/or MOHSW programs to provide required information.

Private Sector Suppliers

Like many developing economies, Tanzania relies extensively on international suppliers to meet their medicines and medical supply needs. There are very few pharmaceutical manufacturers in the country. A cursory count suggests that there are about 5 manufacturers and the range of products they produce locally is very narrow, and limited to basic analgesics and simple antibiotic formulations. Almost all the raw materials are imported. There are a few pharmaceutical wholesalers who import products for local distribution and on occasion also supply MSD. Most of the public sector procurements are done through international tenders although local manufacturers and distributors may be allowed to participate in such tenders.

Quantitative Data Analysis

The assessment team reviewed quantitative data on product availability, to develop a pattern of what product availability at the facility level has looked like over the past year (2012).

- Availability of essential medicines is limited.** As shown in figures 4 and 5, key essential medicines are often out of stock. Amoxicillin suspension and cotrimoxazole suspension are the products most often out of stock. In September 2012, more than 40% of facilities did not have paracetamol in stock.

Figure 4. Percent of facilities stocked out on the day of visit: essential medicines

Source: End Use Verification

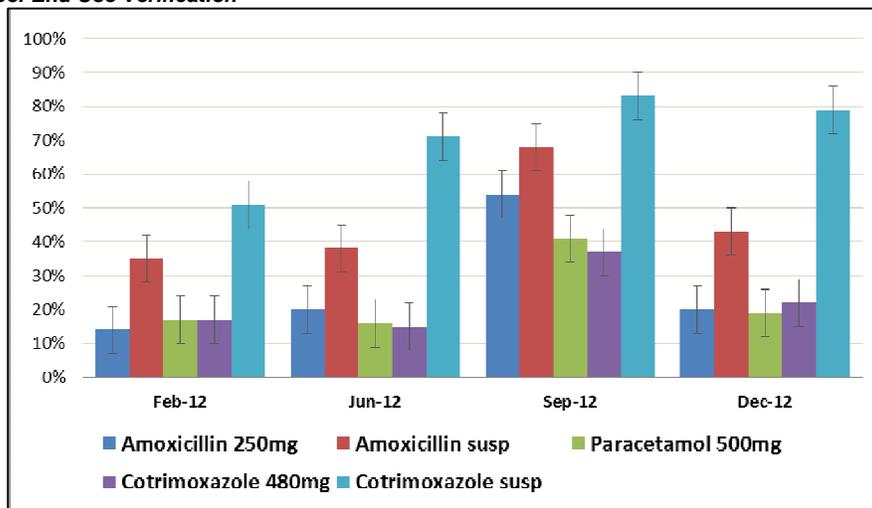
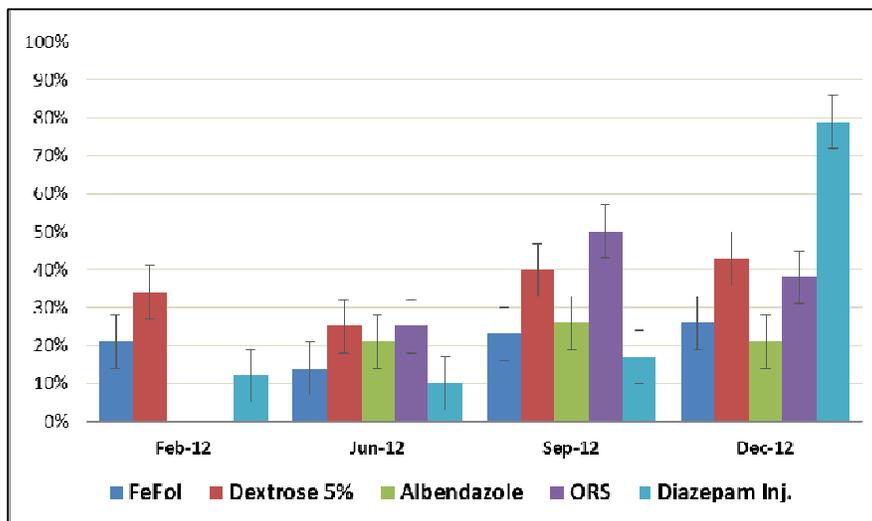


Figure 5. Percent of facilities stocked out on the day of visit: essential medicines

Source: End Use Verification



- Challenges remain with availability of family planning products and maternal and child health products.** Though the availability of family planning products is slightly better than essential medicines, challenges remain. The availability of condoms, Depo-Provera, implants, intra-uterine devices, combined oral contraceptives and progestin only contraceptives in 2012 is in figure 6 below. Magnesium sulphate, oxytocin injection, misoprostol, and SP availability is shown in figure 7 below.

Figure 6. Percent of facilities stocked out on the day of visit: family planning commodities *Source: End Use Verification*

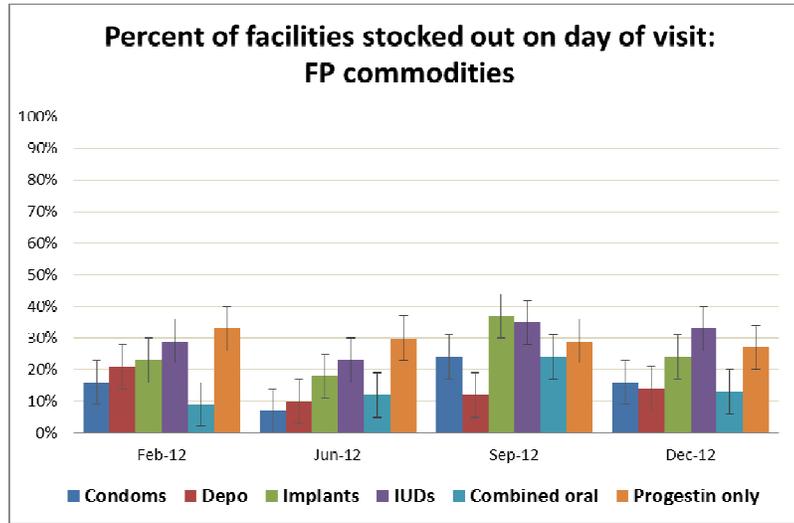
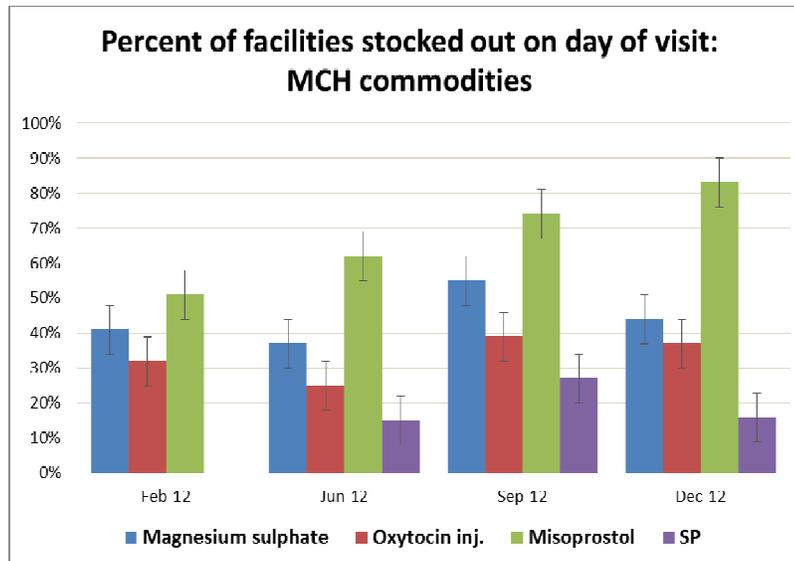


Figure 7. Percent of facilities stocked out on the day of visit: maternal and child health commodities *Source: End Use Verification*



- Availability of malaria commodities also remains limited.** Malaria commodities have been the most challenging to keep in stock at the facility level. There are several considerations unique to malaria which may make ensuring availability particularly difficult. For example, demand is seasonal. Manufacturers continue to struggle with keeping up with increasing demand from countries. Figures 8, 9, and 10 show malaria commodity availability from two different data sources, End Use Verification Activity and the ILSGateway. For ILSGateway, the number that is reported is the percent of facilities that reported a stockout of all 4 presentations of artemether/lumefantrine (ALu), according to the ILSGateway data. Malaria stockouts are also included in SMS for Life, where 5,081 report malaria commodity stock status each week. The 2012 reports showed an average annual stockout rate of 35%.

Figure 8. Percent of facilities stocked out on the day of visit: malaria commodities

Source: End Use Verification

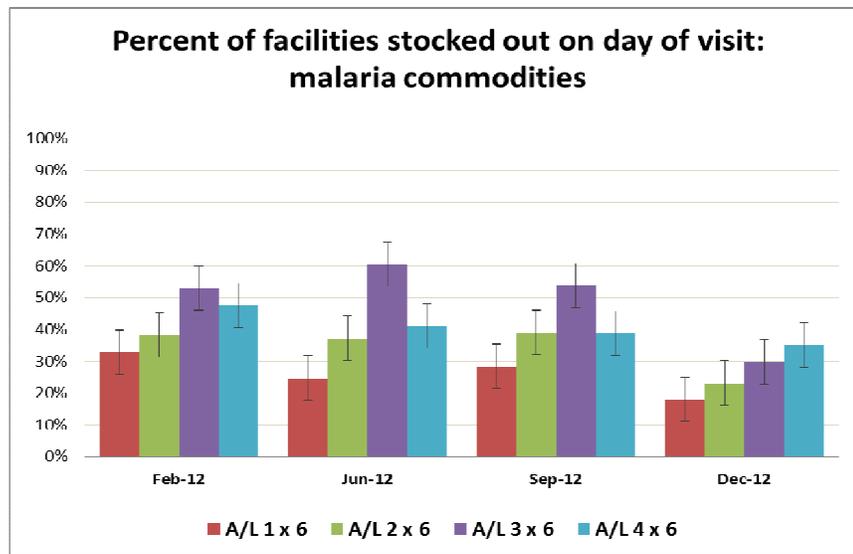


Figure 9. Percent of facilities stocked out on the day of visit: malaria commodities

Source: End Use Verification

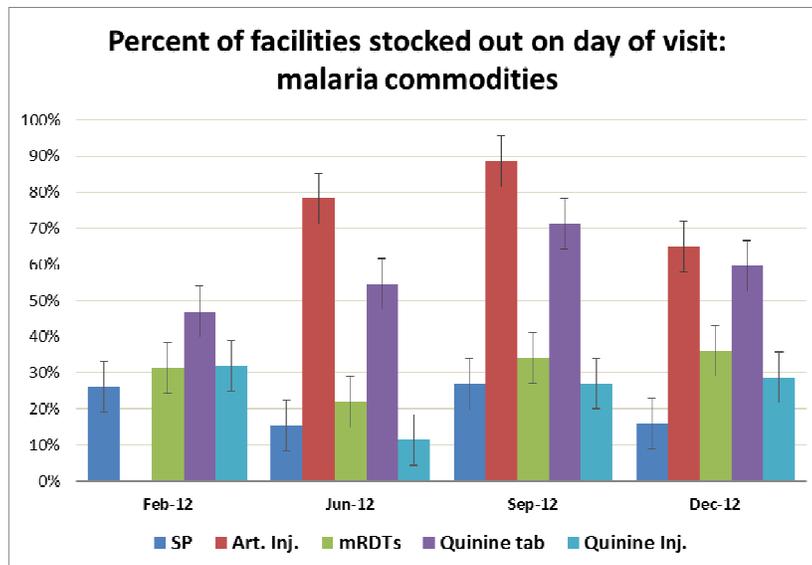
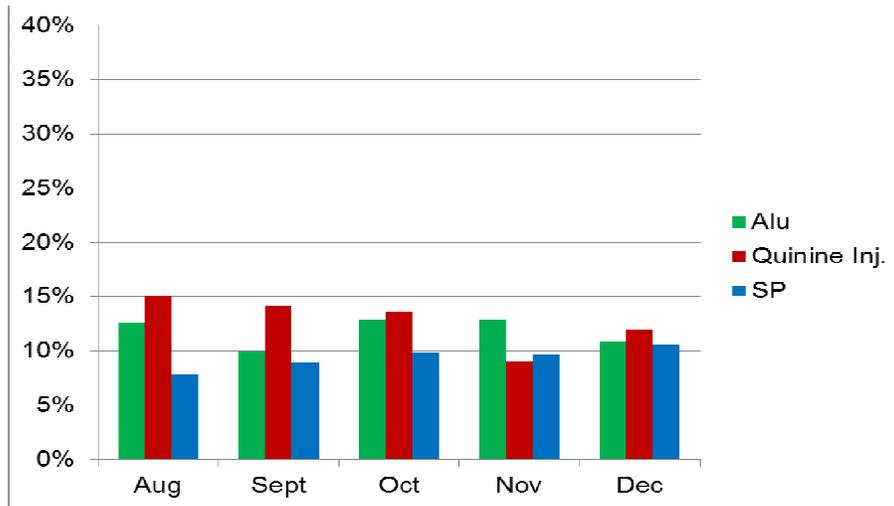


Figure 10. Percent of facilities stocked out on the day of visit: malaria commodities

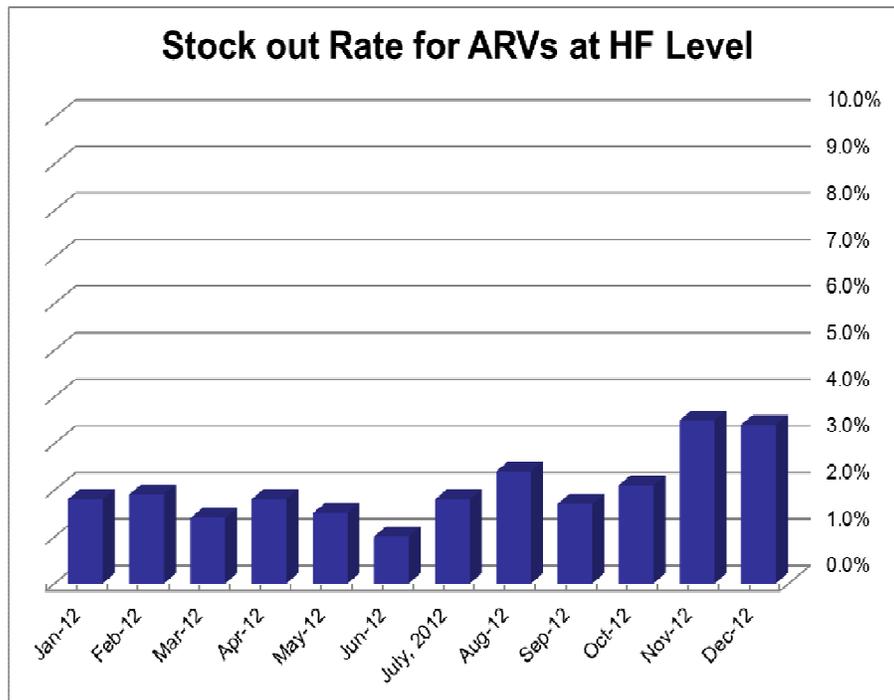
Source: ILSGateway



- Stock availability for ARVs is significantly better.** Compared to other product groups, ARVs have registered very low stockout rates throughout 2012, as shown in figure 11 below. Stockout rates for ARVs were below 4% in 2012, according to monthly reports submitted from Supply Chain Management Advisors (SCMAs) based at the MSD zones. The SCMAs report on whether a facility has experienced a stockout of any of 30 different ARVs.

Figure 11. Percent of facilities stocked: ARVs commodities

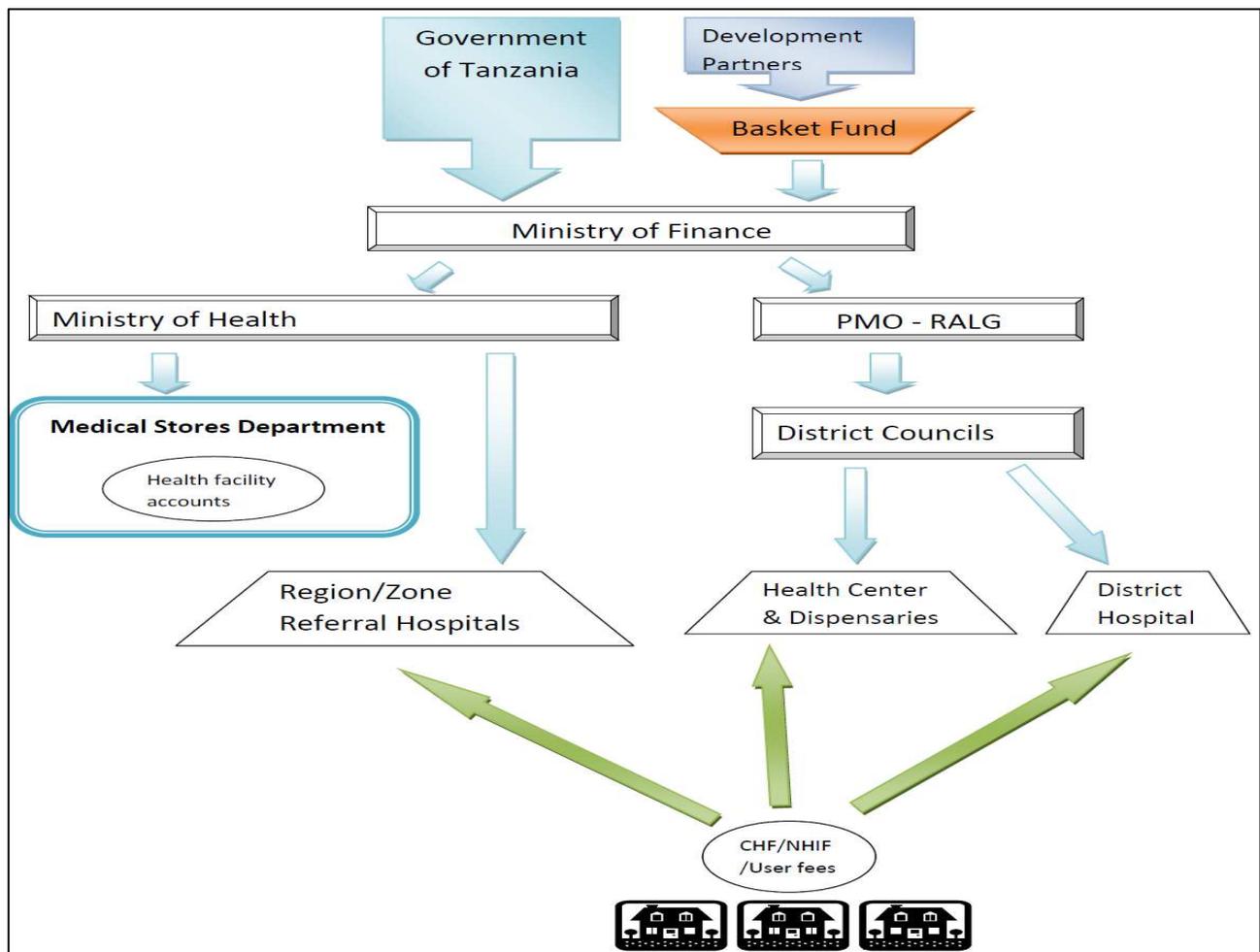
Source: SCMA Monthly Reports



Financing

The assessment team examined the flow of money in the supply chain, including central level sources and cost-sharing arrangements at various levels, to recommend how these financial processes can be optimized to boost supply chain performance. First, the assessment team began by mapping out the flow of funds in the public health supply chain in Tanzania. This is illustrated in Figure below.

Figure 12: The flow of funds in the public health supply chain in Tanzania



The budget of the health sector is directed to the MOHSW and its directorates, and to local governments through the PMO – RALG. Generally, there are three sources of public sector funding for healthcare in Tanzania:

1. GOT health sector annual recurrent budget allocation:

- In 2010/11, 35% of the national health sector allocation was contributed by GOT. This allocation was approximately 9% of GDP, but was still below the Abuja declaration target of 15%
2. Basket funding:
 - This consists of pooled contributions from donor partners to the national development budget. A portion of this is earmarked for health ('the health basket fund'). In 2010/11, this accounted for about 60% of the national health sector allocation from the MOF. The basket fund is primarily meant to boost administration and management of local governments and hence is administered through the PMO-RALG
 3. Cost – sharing funds contributed by users:
 - These are either collected by SDPs in the form of user fees and/or community health funds (CHF) or from public service employees who contribute 6% of their income to the National Health Insurance Fund (NHIF). In 2010/11, cost-sharing accounted for less than 5% of national public healthcare expenditure.

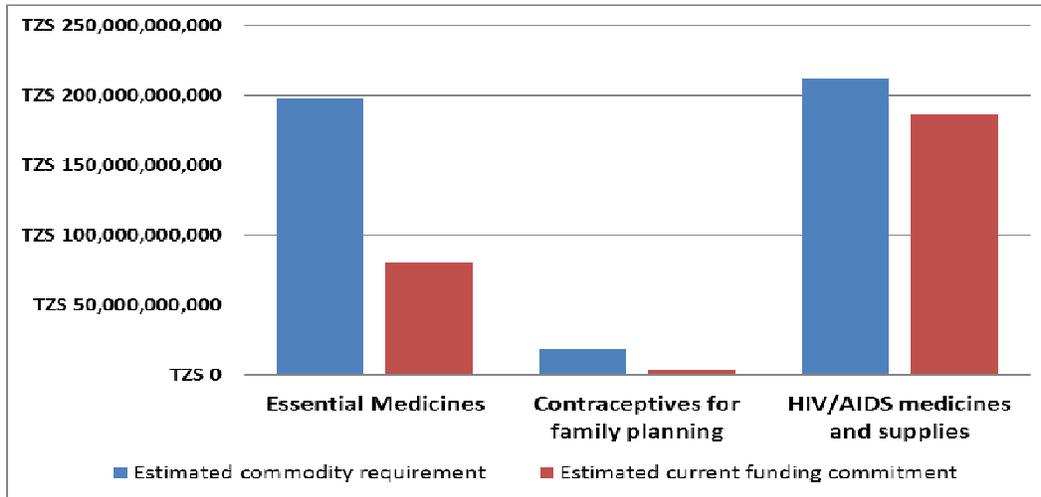
In 2011/12, 44% of the MOHSW budget was spent on medicines and health commodities. MSD holds facility accounts that are commissioned by MOHSW. Facilities can order medicines and supplies according to their commissioned allocation at MSD.

Findings

- **There is no consensus on how much funding is required to meet all medicine needs in the country.** All financial processes in a supply chain should be anchored around sound estimates of commodity requirements and estimated costs of purchase and delivery. These estimates are created during regular national quantification exercises that bring together relevant stakeholders and supply chain experts to generate assumptions that are used to create projections of anticipated commodity requirements, based on expected morbidity, services, demographic, or consumption data. The assessment team found several reports of national quantifications for program commodities like HIV/AIDS, family planning and malaria. However, there was a conspicuous absence of any agreed upon national projections for the quantity and costs of essential medicines and commodities needed in the public sector. Without these estimates, it is very challenging to accurately budget for the national commodity needs or to even bring stakeholders together to develop short or long term mechanisms for ensuring adequate funding for these commodities. Nevertheless, the assessment team worked with the estimate of approximately TShs 180 bn for the financial year 2012/13 (obtained from various sources in the MOHSW and based on a guestimate of 25% increase based on previous annual requirements).
- **Given current estimates of requirements, funding is insufficient.** Figure illustrates further challenges with financing of medicines and supplies at national level. There is a considerable funding gap between estimated requirements and actual funds committed by GOT and development partners. Financing remains skewed towards HIV/AIDS and

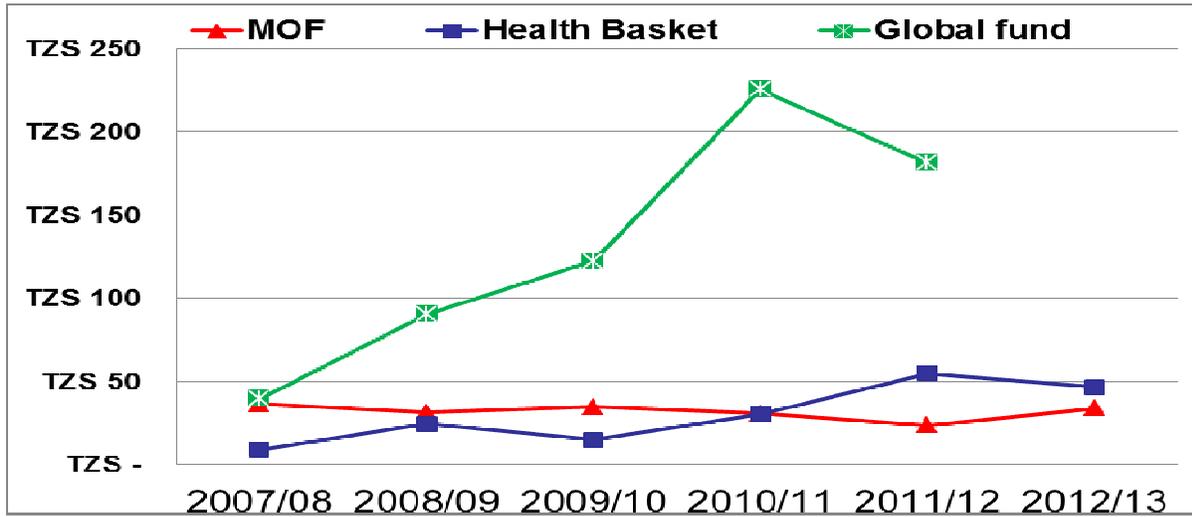
malaria; however, essential medicine needs continue to grow in tandem with changing population demographics and emerging chronic non-communicable diseases. For instance, there were less than 50% of the funds required in 2012/13 for the purchase of essential medicines and family planning commodities. Evidence from reports seen by the assessment team suggests that this has been a longstanding problem that has perpetuated the chronic scarcity of medicines and supplies in the public sector.

Figure 13: Estimated funding gap for selected health commodities for 2012/13



- The GOT contribution to the national medicines and health commodity requirements has not increased significantly in tandem with population growth, inflation and other factors over the last six years.** Analysis of the relative contributions of GOT and two other sources (health basket fund and Global Fund) to the national budget for medicines and supplies is illustrated in Figure . The ‘health basket fund’ from development partners is primarily meant to supplement GOT contribution to the national health budget. However, the current level of contribution from GOT to the national health budget is still very low. According to the Abuja Declaration, countries pledged to set a target of allocating at least 15% of their annual budget to improve the health sector. Figure shows that by 2011/12, development partners’ contributions to the medicines and commodity requirements through the ‘Health basket fund’ had exceeded GOT contributions. Contributions from the Global Fund for AIDS, TB and Malaria have increased significantly over the years and have remained the top source of funds for medicines and supplies in the public health supply chain. The comparatively higher availability of funds for commodities financed through Global Fund grants may partly explain why these commodities are more readily available in the public sector compared to non-program commodities (See chapter on data visibility for details).

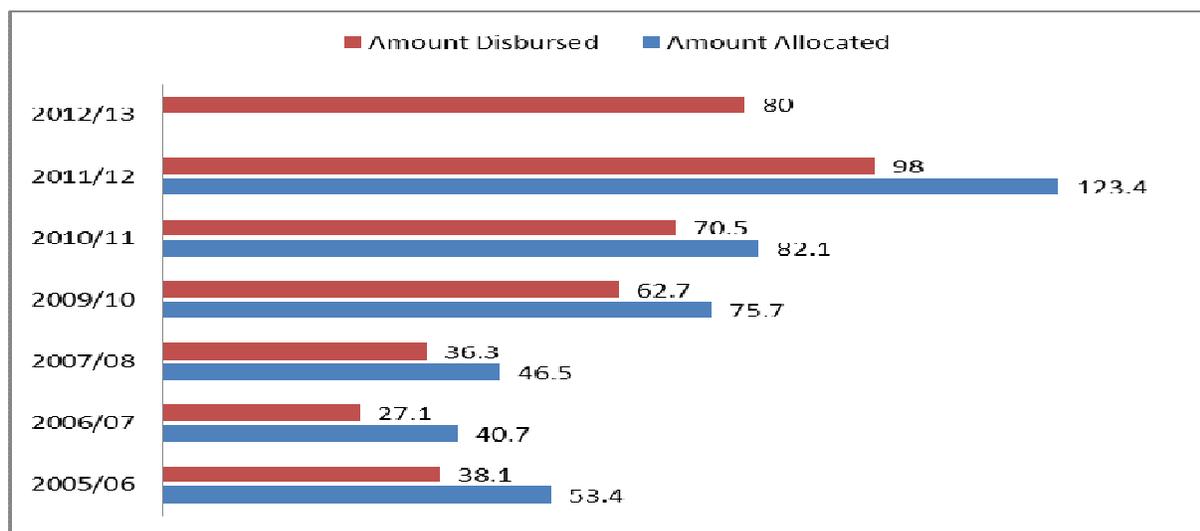
Figure 14: Contributions (in billions) to the national medicine and commodity requirements for Tanzania from three sources



- **The formula for allocating funding for medicines and supplies has been revised and disseminated; however, allocation of funding for medicines and supplies is not adequate.** Within the MOHSW, PSS is responsible for undertaking the allocation of resources for medicines and health supplies at facility level. The current formula is based on parameters including: population in the coverage area of the facility, under five population, and the poverty index. These data are collected from the National Bureau of Statistics (NBS). Some facilities complain that the formula yields funding amounts which are not sufficient for their needs. There are also challenges with the data that is used in the formula. It is not certain if the latest values of these parameters are being used. Furthermore, to lack of predictability of funding coming through MOF, the allocation tends to be based more on actual funds available than on estimated needs. For instance, when funds disbursed are lower than anticipated, more funds are allocated to hospitals than to primary health units. In reality, the allocations tend to be fixed amounts and so may be inequitable given the actual workload seen at the health facilities. As a result of the use of flat rate to allocate funds to primary health facilities, some health centers and dispensaries overdraw their credit allocation limits at MSD.
- **There is no agreement whether the quantities allocated to MSD are disbursed.** The assessment team examined the financing mechanisms at MSD given its priority position in the national supply chain. There are routine inconsistencies between the amounts allocated to MSD (for crediting the health facility accounts) in the MOHSW budget and the subsequent actual funds disbursed to MSD for the same period from the MOF. This is illustrated by figure 15. On average, only about 75% of the annual funding allocation is actually released, which implies that MSD has to operate on a deficit budget each year. On the other hand, the MOHSW maintains that the amounts budgeted for MSD are released. There may also be differences between the amount budgeted for MSD by MOHSW, the

amount allocated to MOHSW for MSD, the amount disbursed from MOHSW to MSD, and the amount received by MSD.

Figure 15: Comparison of amounts disbursed with amounts allocated to MSD for purchase and distribution of medicines and supplies Source: Auditor General’s Special Report and interviews with Health Basket Fund Coordinator at MOHSW, and the MOHSW accountant



The assessment team was able to obtain information regarding release of funds to MSD from GOT and HBF for 2012 – 2013. This was compared to amounts budgeted for the same period. The national budget for medicines and health supplies for 2012 – 2013 was 106 bn TShs. Of this, 80bn was allocated to MSD.

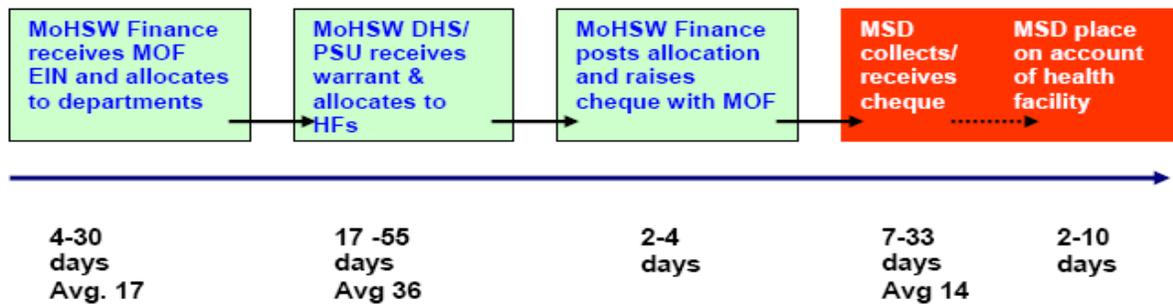
Table 1: Comparison of budgeted and released amounts for health commodities at MSD for 2013

Source	Amount Budgeted (TShs)	Amount Released (TShs)	Percentage released	Balance (TShs)	Percentage Balance
GoT	34,000,000,000	26,166,667,000	77%	7,833,333,000	23%
HBF	46,459,574,800	26,459,574,800	57%	20,000,000,000	43%
Total	80,459,574,800	52,626,241,800	65%	27,833,333,000	35%

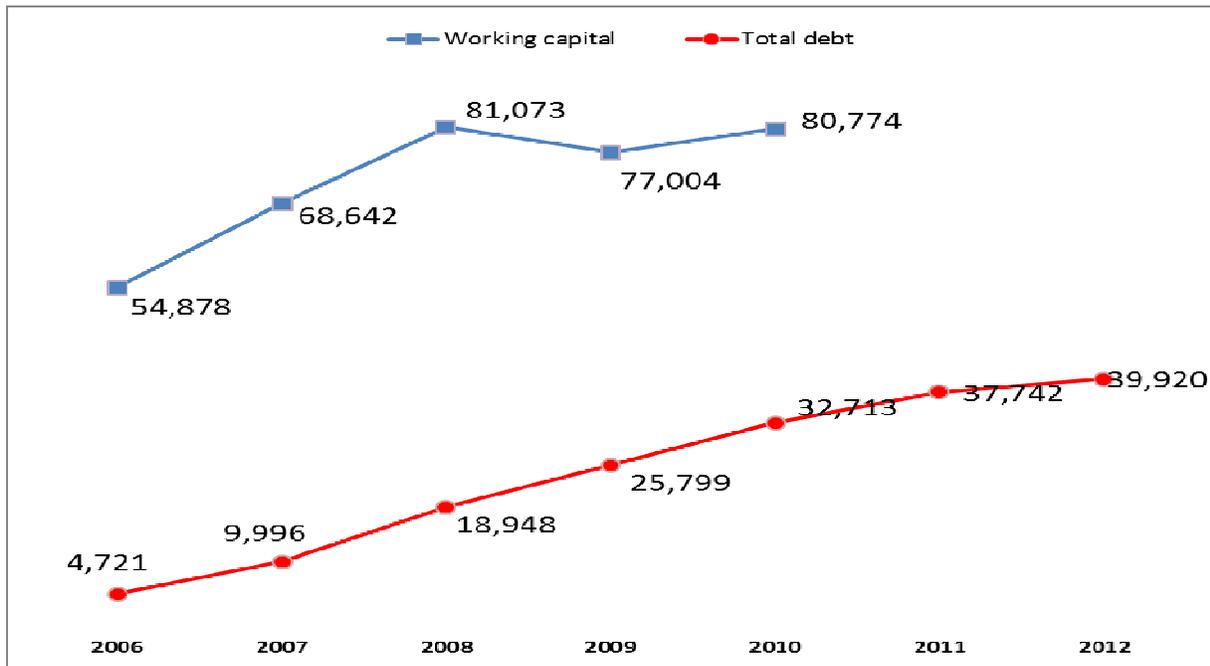
From Table 1, 80bn TShs has been budgeted for medicines and health commodities to be purchased through MSD for 2013 – 2013. However, to date about 65% has been released to MSD (about 52bn) from both GOT and health basket fund sources. This leaves a deficit of about 28bn at MSD. A comparison of allocated and disbursed funds for previous years is shown in Figure 15 below.

- Disbursements are consistently delayed.** Two previous assessments, one a report commissioned by the World Bank in 2008 and another carried out by the controller and auditor general in 2011, both estimated that funds can take between 32 to 132 days to move from the national treasury to a health facility account at MSD. This is illustrated in Figure . This long bureaucratic process has significant trickle down effects on the internal processes that need to be set up at MSD in order to execute its procurement, warehousing and distribution functions adequately. There is an urgent need to review the process of allocation and reallocation of funds between the ministries involved (and their departments) in order to expedite the process of disbursement. Note that the figure does not include the time that it takes for the MOF to actually disburse funds to the MOHSW.

Figure 16: Summary of the medicines and supplies commissioning process for public sector facilities in Tanzania Source: 2011 National supply chain audit report, World Bank



- An unsustainable level of debt has been accumulating steadily since 1996.** Although MSD is a not-for-profit government institution, it operates on a commercial basis to ensure its own sustainability without drawing from external resources. The most significant threat to the financial viability of MSD in the medium and long term is the unsustainable level of debt that has been accumulating steadily since 2006, as illustrated in
- In 2006, MSD was owed less than 10% of its working capital by various creditors. By 2010, MSD was owed close to 40% of its working capital. Putting this more precisely, the debt level had increased by about four times within the period of 4 years. The current level of debt from financial statements and audit reports is approximately 40 billion TShs.

Figure 17: Comparison of amount (in millions of TShs) of annual working capital and total debt at MSD

According to records and reports accessed by the assessment team, the main sources of debt at MSD are:

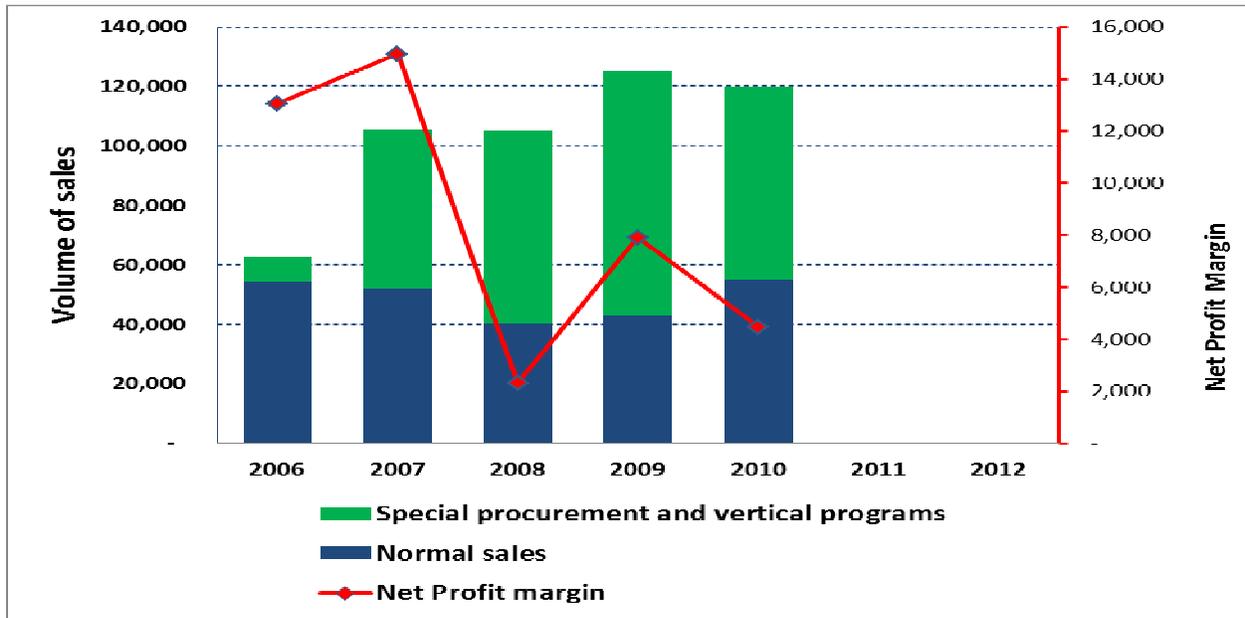
- Handling fees owed to MSD by vertical programs
- Health facilities, which overdraw their account allocations (e.g. approximately 8 – 10 billion TShs from 2010 – 2012)

There is currently disagreement about the optimum amount that MSD should recoup in handling fees for storage, distribution and warehousing. According to memoranda of understanding between GOT and development partners, MSD charges a 14% handling fee for vertical program commodities (although other commodities are charged 18.5%). The same memoranda stipulate a shared commitment to settling these handling fees, with development partners contributing 8% and GOT 6%. However, both parties do not fulfill this commitment reliably.

The net effect of this perpetual debt has been drastic on operations at MSD (see chapter on operational processes for details). Figure illustrates one example. Using data obtained from balance sheets and other resources, the assessment team compared sales volumes with ‘net profit margin’ at MSD over a five year period. As the figure shows, the total volume of sales at MSD doubled from about 60 bn TShs in 2006 to just less than 120 bn TShs by 2010. However, closer examination shows that this increase was caused by higher volumes of special procurements and vertical program commodities. ‘Normal sales’ for essential medicines and supplies to health facilities remained between 40bn and 60 bn TShs for the same period. As explained earlier, the costs for handling program commodities are not fully

reimbursed to MSD. In effect, MSD has continued to handle an increasing amount of commodities without substantial reimbursement for costs of operation. The reality is that the operating profit for MSD has decreased significantly despite the large increase in volume of sales.

Figure 18: Comparison of annual sales volumes (in millions of TShs) with 'net profit margin' at MSD over 5 years



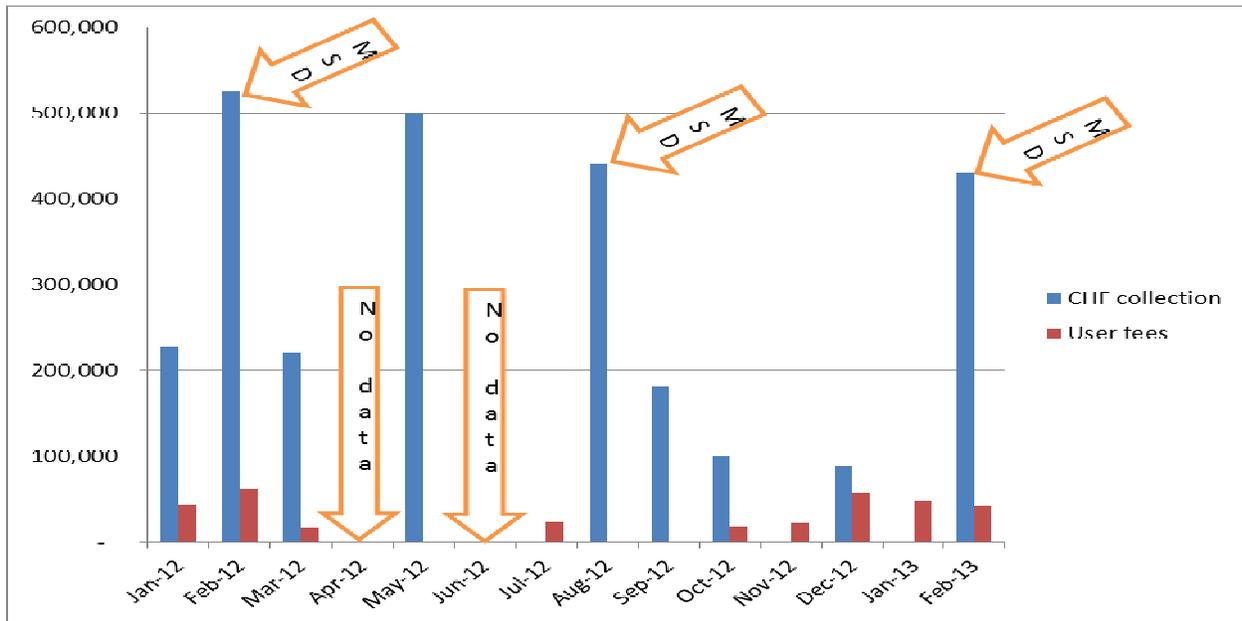
The assessment team found that MSD was last recapitalized in 1994. Debt, inflation and inefficient processes have led to significant de-capitalization of the organization. This has hampered MSD from achieving its strategic objectives. For instance, we found that several suppliers were dissatisfied with the rate of payment from MSD for goods and services offered.

- Collection and utilization of cost-sharing funds in the public sector is inefficient.** The preeminent contribution of cost – sharing funds to the national medicines and health supplies requirement is managed through the NHIF. Although funds coming through the NHIF are currently less than 5% of the national health care budget, this source of funding has been growing steadily. The NHIF management has a target of covering 30% of the population by 2015. Currently, there is underutilization of this stream of funding in public sector health facilities. 60% of NHIF reimbursements are for medicines and supplies. At the same time, records availed to the assessment team from the NHIF management show that less than 33% of these reimbursements go to public health facilities. Most clients who utilize their NHIF contribution attend NGO and private health facilities. This may be a reflection of the perception about the quality of services or availability of medicines and commodities in the public sector.

Health services are not ‘free’ at the point of service in the public sector in Tanzania. Health facilities collect direct out-of-pocket payments for items of service (user fees) or accept member contributions to community health funds to offset these payments. These funds are pooled at the district level or are deposited on health facility accounts managed by the district administration. The assessment team examined the collection and utilization of these funds and identified several challenges.

- There are substantial disparities in the amounts charged for the same health services between districts, even for districts in the same region. These disparities may partly account for why health facilities in districts that charge lower fees see comparatively more patients. This movement of patients across district lines grossly distorts the allocation formula for medicines and supplies to primary health facilities.
- There are unclear procedures for pooling these funds at district levels, as found through interviews with health facility staff in sampled districts. In some districts, the funds are held on individual health facility accounts and utilized to purchase consumables for the health facility at the direction of the district medical officer (DMO). In other districts, the funds are pooled on a district account and used to purchase supplementary health supplies for distribution to the health facilities. In both instances, the health facilities expressed dissatisfaction with the level of their involvement in deciding how these funds are utilized.
- There is a lack of transparency and consistency around collections at health facility level. The assessment team collected and analyzed data for some health facilities visited during this assessment. An example taken from one facility in Bariadi district is shown in Figure . Records at the health facility showed that it received about 150 patients per day. The facility was staffed with two nurses, one clinical officer and one lab assistant. From the financial records at the facility, combined monthly collections of user fees and CHF contributions were about TShs 250,000. However, there were a few months where there were no records of any collections at all in spite of evidence that the facility remained open. It is possible that collections were made but there was no accountability. It is also clear from Figure that the highest collections occurred in the months where there was a delivery of commodities from MSD (stock keeping records at the facility were used to determine when they received deliveries from MSD). This suggests that collections from cost-sharing at primary health care level could be significantly boosted in the long term if availability of medicines and supplies is more assured.

Figure 19: Monthly cost - sharing collections from one health facility in Bariadi district



- Facilities complain that they do not receive enough funding for commodities to serve their populations.** At one district hospital that was visited, we found a medicines and supplies budget of approximately 300M TShs for the period of May to December 2012, and yet the hospital had only been allocated 28M TShs in its MSD account for the same period. The hospital had managed to raise a further 25M TShs through cost – sharing but still this was highly insufficient to meet its medicines and supplies needs over the period. And yet, the assessment team also learnt from the facility level interviews, that there are unspent allocations in MSD facility accounts due to stock outs at MSD. Facilities sometimes do not spend all the amounts allocated in their accounts held at MSD. Several facilities sampled indicated that on average, MSD fills about 60% of the commodities ordered in each commodity cycle. These funds are sometimes carried over to the next fiscal year or are utilized by facilities to buy supplies at MSD that they did not necessarily budget for in that fiscal period, such as hospital beds and equipment.

Ongoing and planned interventions

Interventions being implemented to improve supply chain financing include:

- The MOHSW, through the National Institute for Medical Research (NIMR), is leading a national quantification for essential medicines. This project will forecast the quantities of medicines and supplies needed to meet the needs of public health facilities over the next five years, look at a selected list of products and facilities. The quantification will use a variety of data sources, including consumption data from health facility level, MSD, MOHSW programs and disease morbidity data from mainly the HMIS.

- The Pharmaceutical Infrastructure and Food Safety Technical Working Group (PIFTWG) is reviewing the formula for setting quantities to be allocated to health facility accounts held at MSD. This will address the current inequity by linking allocations to up to date data on morbidity, population coverage and workload at health facilities

Recommendations

The following recommendations are offered:

- **The MOHSW/MOF should pay the debt owed to MSD.** Lack of working capital at MSD represents the single most important risk to its operations and to the long term viability of the public health supply chain in Tanzania in general. The current level of debt, coupled with the significant decapitalization of MSD is unsustainable. A special vote from the national treasury should be created and the debt must be settled by the MOF.
- **Create an emergency forum involving development partners and GOT to find long term solutions to handling fees that continue to heap debt on MSD.** This forum should also be used to review the memorandum of understanding with MSD for handling vertical program commodities. Without a resolution for paying these handling fees, even if the current debt is serviced, new debt will begin to accumulate almost immediately.
- **Create a special vote from the national treasury to recapitalize MSD.** These funds should be used to finance strategic investments that will empower MSD to carry out in legal mandate, especially the scaling up of direct delivery
- **Review and conduct a thorough analysis of handling fees charged by MSD to examine whether the current level is sufficient to cover operating costs.** A review should investigate the difference between volumetric-based and price-based charging at MSD. The results of this review should contribute to finding a long-term solution to the increasing debt at MSD. This is of heightened importance given the impending shift to voluntary pooled procurement
- **De-link the allocation of funds from the actual disbursements to MSD by pooling funds (both GoT and health basket fund) to a MOHSW holding account at MSD.** The smaller remittances from GOT and the bulk remittances from the basket fund will balance out, resulting in a more even accrual. This will mitigate the impact of irregular patterns of release on MSD operations, especially procurement. The pooled funds will support a systematic and regular allocation plan. For example, allocations could be carried out each quarter to ensure predictable allocations to facilities. Also, the pooling mechanism could considerably reduce the time for processing releases from MOF through MOHSW to MSD by removing the need for a new calculation each time funds are disbursed.
- **Use the inter-ministerial forum between MOHSW and MOF to examine realistic mechanisms of reducing the burden of bureaucracy that unnecessarily lengthens the commissioning and allocating of funds for medicines and supplies.** This should be done through:

- Process mapping in order to identify redundant processes between government departments
- Creating ways for MOF to transfer funds directly to MSD, based on MOHSW allocations. The MOHSW would continue to provide direction on how much is allocated to MSD, as well as the facility accounts within MSD.
- **Test and implement innovative plans to boost and standardize collection of cost sharing funds from health facilities.** Guidelines for cost sharing have been developed, but have not yet tested. Additional plans for cost sharing could involve:
 - pay for performance (P4P) mechanisms that reward facilities for boosting collections
 - enhanced supervision by CHMT and district executive or council members, similar to the model used in Iramba district
- **Implement the recommendations made from the Special Audit Report of MSD.** In 2011, a Special Audit of MSD was conducted, through the National Audit Office. Recommendations were made in that report, and an action plan was created to move these recommendations forward; however, there has been little traction. Several of the recommendations in this financing section echo and build off the recommendations in the Special Audit Report, such as debt recovery, increasing budgets for medicines, improving the flow of funding.

Operational Processes: Focus on MSD

Several assessments have been done of MSD; for this strategic review, the assessment team looked at the role of MSD within the larger supply chain. At the time of the assessment, MSD was in the process of implementing a new ERP system. A number of teething problems were experienced with the implementation as was expected when implementing such large IT projects. As a result, the procedures followed could not be effectively assessed as not sufficient time passed for their stabilization or even their finalization. This did affect some stakeholder perceptions with regards to the efficiency and performance of MSD. The observations for MSD should be seen in light of the limitations during the implementation.

One problem reported was around the transaction response time on the system. Delays were to such an extent that operators reverted to manual transactions in an effort to provide products to fill orders from facilities. The following problems were reported:

- Delays in product receiving
- Reported delayed payments to suppliers
- System inaccuracies in stock levels
- Delayed order processing, picking and deliveries to facilities (some facilities reported no stock received since October 2012; in March, the processing of one customer order took almost one whole day)
- Inefficient operations resulting in additional cost to MSD to pay staff overtime.
- Reporting to facilities on stock outs and expenditure not done effectively.

However, though there are problems with the implementation of the new system, there are other challenges within MSD's control that need to be addressed. These include:

- Reluctance of MSD staff accepting the new system as compared to Orion
- Batches in the system that do not match the physically available parts number
- Vertical items have multiple grades for both ARVs and laboratory items
- Items do not appear on sales invoices while they are available physically
- Items appear to be available in the system and captured on the sales invoice while physically not issued
- Mismatching of packing slips and invoices
- Products physically available in the warehouse but not seen in the system
- Partial fulfillment of orders from central to zones and no tracking of back orders

While there are undoubtedly challenges with implementing the new ERP, all operational challenges at MSD cannot and should not be attributed to this change in software. The SCMA's have compiled

a list of challenges at MSD; some of these are due to the new software, while others are irrespective of the software and point to operational issues within MSD that should be addressed.

The assessment team could not be provided with measurement information on the key performance areas of the business. MSD did share a list of the indicators that they plan to measure once the reporting functionality on the system has been finally set-up.

Findings

Product Selection

- **Adherence to Standard Treatment Guidelines (STGs) and the National Essential Medicines List for Tanzania (NEMLT) reported to be limited.** Tanzania has both STGs and NEMLT in place that guides prescribers and health workers on what to prescribe and what to keep in stock at the various levels within the supply chain. In previous reports (see the *In Depth Assessment of the Medicines Supply Chain in Tanzania*) it was reported that the adherence to these guidelines was only around 52% and that a third of the facilities felt that the guidelines did not address the needs to effectively treat their patients. It was also reported by 22% of facilities that guidelines were not followed as a number of the products were not available and out of stock. It was also reported that procurement at MSD is not limited to the NEMLT as tertiary items that are not on the list are procured for tertiary facilities.
- **The MSD catalog was reorganized to be more user friendly and facilitate decision making at the facility level, given budgetary constraints.** The assessment team noted that MSD has a list in excess of 650 items in the Main Catalogue section of the 2012/13 Price Catalogue of Medicines, Diagnostics and Hospital Supplies. Pharmaceutical items represent around 250 items, Medical Equipment and Supplies represents around 300 items, X ray items 17 and Laboratory items 100. The list has been improved from previous years and has been re-arranged in pharmacological and other meaningful categories in order for facilities to easily find products and their possible alternative choices in case of stock outs. The catalogue also provides basic procedures on how to place an order with MSD and has all necessary contact details for customers to contact MSD for assistance.
- **Some items on the NEMLT are not routinely kept in stock at MSD.** MSD aims to keep the items listed on the Main Catalogue and items on the NEMLT in stock at the Central and Zonal levels, however there are a number of items not kept in stock and are only ordered once a request is received from a facility. This leads to special procurements of items that are not on the essential medicines list. There is not a clear indication on whether the funding for items not on the essential drugs list are supported through GOT or not.
- **There does not seem to be a mechanism that would limit health facilities from only accessing products approved on the NEMLT or STGs.** This may lead to a situation where GOT allocations that represent budgeting for essential medicines are actually utilized to procure items not on the NEMLT and therefore create a shortage of funding for essential medicines listed.

Quantification

There are significant challenges around accurate quantification of needs for medicines and medical supplies. In general, PSS leads the quantification process, and coordinates with all stakeholders. MSD also conducts quantifications, primarily based on historical sales data.

- **Given the historically low stock availability of some products, past consumption information may not be a reliable source of data.** Facilities may use alternatives, procure products from private providers or simply ask patients to obtain the products from elsewhere). Days out of stock, and missed consumption are not currently reported or aggregated, and included into the historical data sets centrally.
- **Different mechanisms are employed by different role players to quantify requirements.** MSD runs a committee that oversees the quantification process. Information is collected from lower level facilities through MSD zonal facilities on an annual basis. MSD zones involve the DMOs and hospitals within their zones to complete their annual requirements for all MSD catalogue items on a spreadsheet. These are then aggregated by the zonal facility and at MSD HQ. It was also noted that MSD zones hold annual conferences that assists stakeholders at zonal levels in discussing and supporting amongst other topics quantification and its importance. MSD analyze the data centrally by comparing it with historical data, current stock information, seasonality, donations or expected donations and incidence of expiry. MSD then cost the needs and provides the information to the PSS unit in the MOHSW to inform budget input. Partners or donors supporting the MOHSW, use different methodologies to quantify the requirements for vertical programs they support. The MOHSW units and MSD are involved in these quantification exercises and they are often supported and coordinated by donors. Information from the ARV system, the ILS, ILSGateway, population and disease statistics, planned scale up activities etc. are used to quantify these requirements.

Procurement

MSD does the bulk of procurement of essential medicines for public sector facilities. Hospitals and DMOs also procure smaller quantities where MSD are out of stock and where they have funds available to procure these items. DMOs can do this on behalf of health centers and dispensaries in their district. MSD mainly procures items from international suppliers by following the procurement regulations laid down by the PPRA. MSD governs the procurement process through the MSD Tender Board who takes responsibility for oversight on and compliance to the Procurement Act and its Regulations. MSD also appointed an evaluation committee to manage the technical aspects of the tenders and recommendation for award to the MSD Tender Board.

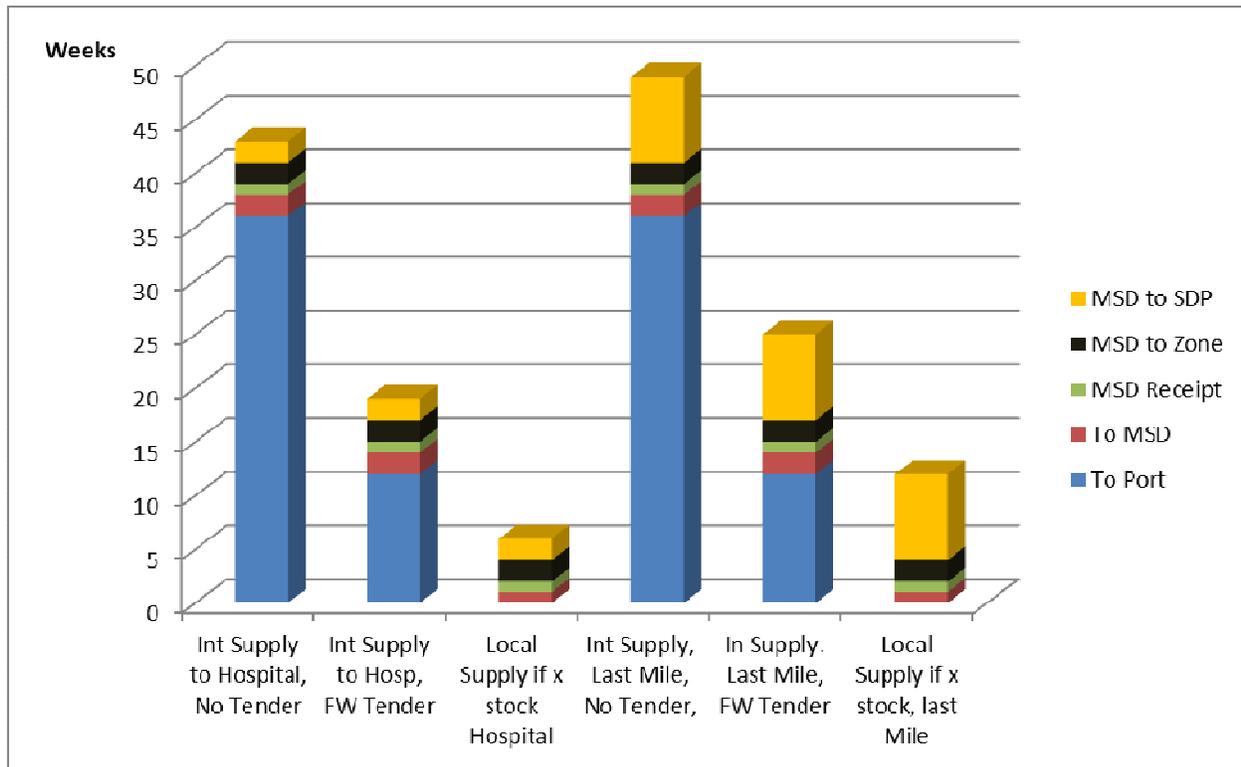
Previous assessments of the MSD procurement function indicated good performance, and in compliance with PPRA and its own regulations; however, the MSD Special Audit Report, Dec 2011 reported the shortcomings such as: procurement plans are not monitored or updated appropriately; some procurement methods used were not properly justified; delays were evident between stages in the procurement process; tender opening attendance records were not properly kept; the time lapse between tender closure and opening was reportedly long (in cases up to 128 days); the composition

of the evaluation team was not appropriate; and MSD awarded tenders beyond their bid validity periods in certain instances.

The procurement process is the most sensitive process in assuring timely supply of sufficient quantities of medicines to facilities. It has been noted by the assessment team that this process cannot currently be managed effectively by MSD for the following reasons:

- **Procurement by MSD can only be done when funds are available.** Delays in fund release as previously described in the report therefore have a direct effect on availability of medicines as orders can only be placed with suppliers at this time. This is also affected by the increasing debt at MSD, and lower profit margins. Because of the cash flow issues, MSD is unable to adhere to procurement plans.
- **Procurement agreements, following PPRA guidelines, take long to finalize, usually 6 to 8 months.** Per the regulations explained in the PPRA, 45 days are required for international tender. There are no special provisions for medicines and laboratories under the PPRA.
- **To reduce the lead time for supply against order, MSD now utilizes framework contracts.** These contracts can be arranged once the procurement plan has been finalized which also depends on the budget allocation for drugs by MOHSW. MSD can then call off orders from the framework contracts which allow more flexibility and enables MSD to keep less stock, and reduce the risk of expiry.
- **Local suppliers reported dealing with MSD is risky.** Local suppliers plan their requirements for raw products or the finished products that they are contracted for with MSD with their international suppliers some time in advance. Then, not all the contracted quantities are ordered by MSD, due to insufficient funding or late fund release to actually place orders with these suppliers. This increases the risk for suppliers, especially local suppliers that have limited markets, to deal with MSD and it was reported that one local supplier are not interested supplying products to MSD any longer.
- **Supply lead times are long.** Supply lead times, especially from international suppliers are long. Figure 24 shows the minimum lead times (in weeks) in supply SDPs for different scenarios. The first three bars in the graph represent the supply time to Hospitals whilst the last three bars represent supply times to health facilities included in the last mile delivery by MSD. The scenarios reflected are:
 - International supply without a framework tender in place (1st and 4th bars)
 - International supply with a framework tender in place (2nd and 5th bars)
 - Local supply with a framework tender in place and sufficient stock in country (3rd and 6th bars).

Figure 20. Supply Lead Times



It is assumed that local suppliers that do not have stock available in country will have similar timelines as international suppliers on both scenarios with and without framework tenders as they have to import stock or raw materials in any case if they don't have stock available in country. From the graph the following conclusions can be drawn:

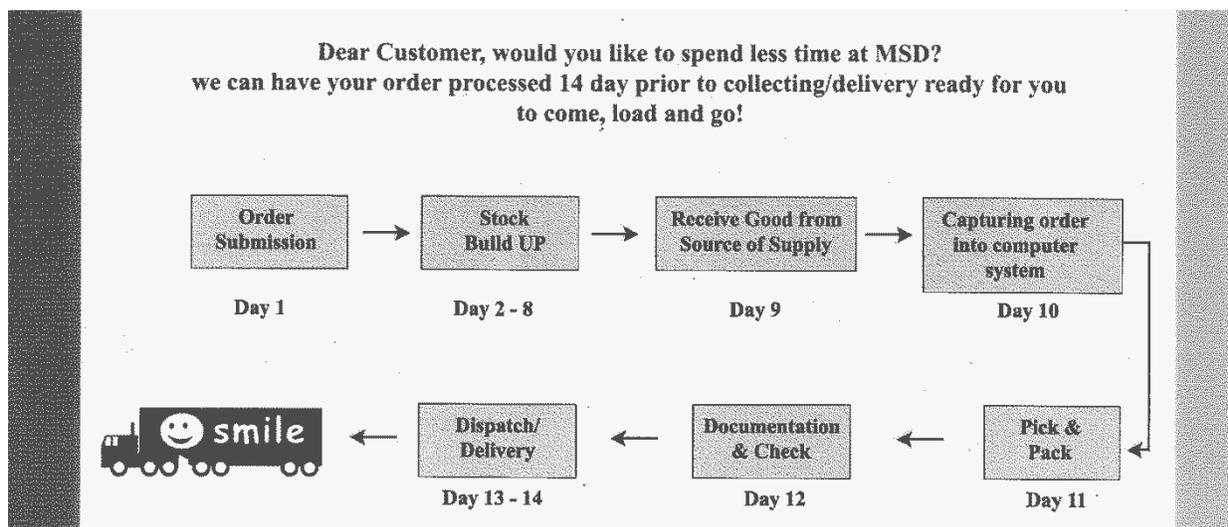
- Procurement and supply lead times into country has the largest influence on the total lead time to supply a facility when the pipeline is empty. Some items were reported out of stock for several months by facilities visited during the field visit. This is a reflection of procurement not initiated timely
- The use of framework tenders reduce the total lead time with more than 20 weeks and has a considerable influence on responsiveness of supply, has the benefit of lowering stock levels and the risk of expiry and don't tie up as much money in stock
- Awarding framework contracts to local suppliers will result in the shortest lead times to MSD. In this case local suppliers take up all the risk for bringing the products into country in time for supply to MSD. The local supplier will also carry the financial risk and the risk of storage. The opportunity also exists to contract the local suppliers to deliver stock directly to MSD zonal facilities. It has to be stressed however that in this scenario good communication and firm commitment are required from both MSD and the local supplier. A cost benefit analysis may be required for using this scenario for direct delivery to MSD zonal facilities

- Delivery lead time to the last mile facilities is 8 weeks minimum. It was noted however that deliveries to these facilities are quarterly. This is not reflected in this graph and may add to the lead time depending on the facility schedule
- Customs clearance timeline is set at minimum 2 weeks, but a number of instances were reported where clearance has been extremely long. One vertical program reported incidences of up to 3 months. In this case additional demurrage costs were incurred.
- **MSD has recently introduced a strategy to source products for facilities from prequalified local suppliers in case MSD is out of stock.** In this model, MSD utilize different local suppliers in the vicinity of its zonal stores to supply stock temporarily until the stock-out has been resolved through the normal supply arrangement. This is seen as a proactive way to address stock out situations; however, MSD should continue to concentrate on efforts to make stock available in the first place through the most cost effective scenario.

Order Receipt and Processing

- **Standard bi-weekly resupply from MSD central to zones has not been adhered to.** Zonal stores order stock from MSD HQ every two weeks. MSD central is supposed to deliver stock to its zonal stores twice per month; however, adherence to this procedure has not been standard. Often, MSD zones send their own trucks to MSD central for resupply. This prevents the transportation resources at the zonal level to be used as they were designed; if the zonal trucks are traveling to MSD central for resupply, they cannot perform their core function of transporting products to districts and health facilities.
- **Some hospitals complained that their orders are not ready for collection from MSD when they are supposed to be.** Hospitals order stock from MSD as and when needed and then collect stock themselves from the MSD zonal store. The requirement from MSD is for hospitals to submit orders two weeks in advance and the MSD catalogue stipulates the process as noted in figure 25 below.

Figure 21. Order Processing at MSD



- **At times, zonal stores act as cross-docking facilities rather than stockholding facilities.** From figure 25 it can be seen that most of the time allocated to prepare an order for a hospital is to acquire stock to fill the order. This would mean that the zonal store does not necessarily keep in stock items that are being ordered, and that the zonal stores are not stockholding facilities but essentially act as cross-docking facilities for stocks coming from MSD Central.
- **Health facilities have not been receiving supplies on a quarterly basis, as designed.** Health center orders are filled on a quarterly basis and on a rotating schedule. The allowed lead time for health center orders is 8 weeks from order to delivery, whether the delivery is done directly to facilities or via the district who then deliver the stock to health centers and dispensaries. In practice, health centers have not been receiving supplies on a quarterly basis. At the time of the assessment, some facilities reported that they had not received a delivery in the last six months. The control over authorized signatories to orders, authorized officers to collect stock and availability of finance seems to be well documented in procedures and facilities reported during the field visit that MSD strictly controls these matters

Distribution

There are a number of new warehouse facilities (Dodoma, Mbeya and Keko) and more are planned (Tabora & Tanga). These new warehouses have considerably improved storage capacity and the quality of storage for pharmaceutical products by MSD. The new facilities are fully equipped with racking, temperature control systems and cold rooms. Several of the old warehouses have substantial areas of concern, especially around cold chain.

MSD currently distributes stock between MSD Central and the zonal stores; zones distribute stock either to districts who then deliver stock to health centers or directly to health centers where the last mile delivery mechanism has already been rolled out. Hospitals currently collect stock from MSD zonal facilities. It has been noted that MSD also plans to deliver to hospitals in the future. MSD received the mandate for direct delivery to facilities (also called last mile delivery) in 2010 after a pilot study was done in the Tanga region. MSD since introduced it in a staggered manner to nine more regions in 2011 and plans to eventually cover all districts by mid-2014. It has the benefit that it is more secure, puts MSD in closer direct contact with SDPs and has one less level of manipulation of stock which requires human resources and storage. Less manipulation also has the benefit to reduce lead time, errors and interference towards for example pilferage.

- **Facilities seem to prefer direct deliveries from MSD, but it is unclear whether this has actually improved product availability.** Some health facilities on the last mile delivery indicated that when districts used to deliver stock, there were delays in deliveries to them as a result of limited capacity with transportation in the districts. It is not clear yet whether the last mile delivery has improved product availability. The availability of product at zonal stores to distribute is a major determining factor to effectively measure the impact of the last mile delivery methodology. It is possible to measure its impact selecting a few well stocked items and track whether this delivery methodology provides a more reliable, shorter lead time to provide these items to the health facilities, than the district delivery methodology.

- **The delivery charge to facilities is a flat of 120 000 TSh per delivery, which may not be equitable across facilities (also compared to budgets and volume of goods delivered).** Although far outlying facilities will attract a larger proportion of travelling costs, the quantities distributed to them are less and co-loading of more facilities can be achieved than for larger facilities on the same size vehicle. Hospitals indicated that they will be charged by MSD and they were not sure about the delivery fee to be charged. They also indicated that currently they have to travel to MSD and waste valuable time waiting for the stock to be checked and loaded so there may not be a considerable difference in cost in any case.
- **Facilities reported that they are not aware of the exact delivery date from MSD.** MSD informs the districts about the delivery dates but districts do not effectively convey this information resulting in facilities not aware that the MSD delivery is on the way. MSD also does not publish a fixed delivery schedule from the zonal facilities to health facilities but only measure delivery against a lead time of 8 weeks since order submission from facilities. This makes planning for small facilities difficult as sometimes the officer responsible for receiving the stock needs to attend to meetings or training sessions and is then not available or has not made alternative arrangements for receipt when MSD arrives at the facility.
- **Distribution of medicines from MSD does not always follow prescribed schedules.** According to system design parameters, facilities are supposed to receive products on a quarterly basis, roughly a month to six weeks after they place their report/order. However, some facilities visited had not received a delivery since October 2012, meaning that they had not received deliveries for the last two quarters. Some of this may be attributed to the out of stock status of some products at MSD; however, this is not the only cause, as every product needed by facilities is not out of stock.

Product Quality

The Tanzania Food and Drugs Authority (TFDA) was formed in 2003 through the Tanzanian Food, Drugs and Cosmetics Act. TFDA has the authority to register medicines for sale in Tanzania and has the responsibility to ensure the safety and efficacy of medicines. The TFDA also license and regulates importers, manufacturers, exporters and sellers of medicine in Tanzania. Additionally the TFDA also approve regulate and register any premises where medicines are kept. Only registered pharmacists may sell medicines, but due to the general shortage of pharmacists in the country this was found not to be the case at public facilities especially in rural areas following the field visit undertaken by the assessment team.

TFDA engage in pre and post registration testing of pharmaceutical products. Evidence of post registration testing was reported by some of the MSD zonal stores. The capacity (both financial and facilities/equipment) of TFDA and MSD to assay test all batches of all products entering Tanzania was reported to be limited. Identification testing (for evidence of active ingredients) was reportedly done at approved entry points into Tanzania.

- **MSD, hospitals, and health center report quality problems in both medicine and equipment.** The assessment team was unable to obtain quantitative data on the frequency of complaints of product quality, but in interviews with MSD zones and health facilities, anecdotal evidence shows that there problems with quality problems (medicines of a different color than they should be, expired products, etc.) are frequent.
- **The head of Quality Control Unit at MSD is a nurse, rather than a pharmacist.** Since 70% of what MSD manages are medicines and equipment, value could be added in having a pharmacist as the head of the Quality Control unit rather than the nurse. The job description, qualifications, and expectation of the Quality Control Unit should be reviewed and finalized.
- **Facilities visited consistently reported receiving short dated and expired stock from MSD.** This was reportedly a possible result of long lead times for supply and previous system limitations in effective rotation or First Expire First Out (FEFO) management by the Orion system. Stock rotation was manually managed previously, which is difficult in large volume environments such as MSD main warehouse and zonal stores. The new EPICOR system will reportedly assist in addressing batch management and stock rotation problems previously experienced.
- **Expired stock is accumulating, especially at the district levels.** A significant problem at all facilities visited was the existence of expired stock that has been accumulating for a number of years. Facilities reported that it is difficult to dispose expired stock; either the procedures were unknown, confusing, or too cumbersome to follow. Some facilities have transferred their expired stock up to the district level. Expired stock is not only taking up valuable space at facilities, but has the potential of illegally re-entering the distribution system if not properly controlled.

Ongoing and Planned Interventions

The assessment team noted the following current interventions:

- **Rollout of direct delivery to SDPs.** Districts that receive direct deliveries previously arranged the deliveries to district facilities themselves, had to provide vehicles and took up the transportation costs from their own budget in any case. Whether MSD can provide the direct or last mile delivery at a lower cost than the district was not studied as part of this assessment. Direct delivery puts a lot of responsibility on MSD and will require further financial input of which especially capital input to procure more vehicles for delivery.
- **Continued implementation of EPICOR 9.** The replacement of the Orion system was undertaken and EPICOR 9 was implemented in 2012. This resulted in some teething problems to the extent that a negative impact on customer care has been noticed by both suppliers and health facilities. Since the reporting on EPICOR 9 has not yet optimally set-up, the assessment team could not evaluate the performance of MSD against certain key performance areas using system data as planned.

- MSD warehouse upgrades. A number of MSD facilities have been upgraded to world class standards. This will assist in more effective workflow, accuracy and ensuring protection of efficacy of products stored. Combined with the new multi facility ERP system, MSD will have increased visibility and will enable more effective stock management over all its branches. It was noted that some zonal facilities still needs upgrading.
- Strategy to source products for facilities from prequalified local suppliers, in case MSD is out of stock. This pro-active strategy has to be carefully undertaken to ensure that it does not become the norm, but stay the exception. It may however have cost benefits over the individual procurement done by facilities themselves. MSD should concentrate on making available the essential drugs in the most cost effective way. The following should be considered in using this methodology:
 - The procurement process should be competitive
 - Only small quantities to cover the need for the gap to be procured
 - Only certain essential or vital products to be procured through this methodology
 - The data of these products procured should be included into future needs and quantifications
 - Trending should be done to measure and share information on the top products, top facilities, top suppliers utilized and price differences against normal bulk suppliers as well as measures to ensure the methodology is not misused.
- Accenture Development Partnership work streams. ADP is providing ongoing technical support to MSD in the following areas:
 - Performance Management (including building a performance management culture)
 - Monitoring and Evaluation (executive management Balance Score Card)
 - Development of the next Medium Term MSD Strategic Plan (2013- 2018)
 - Last mile delivery transportation
 - Improvements in Procurement and Planning.

The inputs provided through the partnership will build capacity with MSD management in general management areas as well as some specific areas (last mile and procurement) and is valuable in providing a platform for MSD Management to plan, implement, monitor and evaluate business activities into the future.

- Network optimization, including options for cross dock facilities, mobile warehouse, and route optimization. This stream of work, supported by USAID through the USAID | DELIVER PROJECT and SCMS will cause a significant change in how MSD does business. Additionally it may provide additional opportunities to MSD and private providers or customers to MSD.

- Inclusion of Marks on Tablets procured under MSD. This is a quality control measure to ensure that whatever is procured by MSD bears the name of the medicine (e.g. paracetamol) and the GOT label to prevent pilferage to the private sector.

Recommendations

The following recommendations are offered:

- **Facilitate adherence to the NEMLT through limiting the distribution of products only to dedicated levels of care and by implementing or strengthening Drugs Therapeutics Committees to provide input to the list and monitor compliance to the NEMLT and the STGs at facility levels.**
- **Strengthen the coordination and information about procurement between MOHSW, MSD, donor agencies, and other sources of supply.** This will help ensure that no overstocks of the same or similar items are created through duplicate procurement activities. Eventually the country should strive to create a combined procurement plan.
- **Institutionalize quantification efforts.** The yearly estimates should be reviewed every six months, where necessary differences should be investigated and adjustments should be made for changes or possible errors. Additional meetings and training to hospitals, districts and health facilities on quantification and its importance needs to be undertaken.
- **Improve HR at MSD.** MSD needs to ensure the right people, with the necessary technical skills (for example, pharmacists) are in the right positions, to ensure increased accountability. One example would be implementing the necessary QA procedures to help eliminate counterfeit or fake medicines moving through the system.
- **Demonstrate the impact of insufficient funding, delayed funding, and outstanding debt on procurement.** MSD has to demonstrate with substantial evidence on a regular basis what the influence of insufficient, late fund releases and outstanding debt are on effective on time procurement. This can be achieved by regular reporting to MOHSW on the cash flow situation at MSD with planned inflow and outflow information.
- **Improve communication with suppliers.** MSD should actively follow up with suppliers on non- conformance to supply lead times and changed off-take estimates especially on Framework contracts. This will provide suppliers with information to plan production changes in time.
- **Investigate ways to shorten the total supply lead time.** Framework tenders has the largest influence and already made a considerable difference to shorten the lead time. Another area that needs attention is the lead time from MSD zones to health facilities at district level in particular. Shortening the total lead time will result in a more responsive supply system and will reduce the risk of expiry. MSD should monitor lead times throughout the procurement and distribution processes and constantly measure and publish performance and improvements made.

- **Continue investments in upgrading MSD zonal facilities.** Cold chain equipment needs to be validated and upgraded or replaced where needed. Fridge alarm systems needs to be installed in all zones and temperature logging needs to be implemented during transportation of cold chain items. Thermometers and data loggers need to be calibrated.
- **Determine whether direct delivery has had a causal impact on product availability at service delivery points.** The direct delivery service should also be extended to hospitals by MSD zones. Hospitals are already on routes or close to health facilities already served.
- **Outsource transportation between MSD Central and Zones.** Transportation resources could then be concentrated at the zonal levels, and better support the direct delivery model. A cost benefit analysis should however be undertaken first.
- **Establish fee structure for distribution to facilities, relative to volume of goods, distance to facility, etc.** The fee structure should take into account the handling fee that MSD is already charging, and not cover the same costs.
- **Map and segment facilities according to lead time; determine the appropriate distribution and resupply schedules based on segmentation.** All facilities in the country do not have the same lead times. Currently, logistics systems in country are designed based on the longest lead time to an SDP. If a facility is geographically near MSD, they still only place an order once every three months. Lead times for different categories of facilities should be calculated, to determine whether there are more efficient ways of delivering commodities to facilities based on these lead times, thereby reducing inventory carrying costs at the facility level.
- **Develop and adhere to a fixed delivery schedule and disseminate this to facilities well ahead of deliveries to ensure that all facilities know by when to submit their orders and exactly when the delivery will be done.** Facilities do not have confidence in the timing of MSD deliveries.
- **Ensure that all changes recommended from the network optimization activity demonstrate value for money and improvement in service.** As the network optimization activity could fundamentally change the way that MSD does business, any recommendations based on this activity should clearly show value for money.
- **Establish processes and build additional capacity for post registration assay testing of more batches of products entering the public sector supply chain.** The laboratory testing can be done through TFDA or a third party provider. The capacity should be sufficient to deal with high risk products or high risk suppliers. WHO prequalified suppliers are seen as low risk and may therefore not be tested, but new products or suppliers could be targeted as higher risk since no history of their reliability exists.
- **Explore the possibility for MSD to enter into quality control partnership agreements with other local institutions.** Ensuring quality products are moving through the supply chain is the responsibility of MSD; however, MSD should expand the attention given to quality control, since facilities consistently complain of receiving poor quality products.

Other local institutions may have capacity in quality control, and MSD should explore these potential partnerships.

- **Provide clarity on disposal procedures for expired and damaged stock at facility level.** MOHSW needs to also sensitize PMO-RALG on this problem. The procedures should then be communicated to all health facilities through the appropriate channels. Where GOT procedures are cumbersome and lengthy these may have to be taken up further by the two ministries to drive increased efficiency in this regard.

Accountability

Accountability is a theme which cuts across this strategic review. Supply chain actors – from one end of the supply chain to the other – are not always held accountable for ensuring commodity availability. Obstacles for accountability include:

- All supply chain roles and responsibilities are not clear. There is confusion about who is responsible for what actions, in some cases. For example, the responsibility for quantification, and ensuring adherence to procurement plans, is not clear.
- All actors do not appreciate/understand their own roles, and the roles of others. For example, some facilities visited thought that MSD is responsible for the funding available to them for commodity procurements.
- Standard mechanisms for accountability are not implemented. These mechanisms most often do not exist. In many cases, there are no consequences for supply chain actors not adhering to their designated responsibilities

The Quality Assurance (QA) department of the MOHSW is responsible for ensuring quality of services. PSS is responsible for ensuring the adherence to logistics system design parameters and procedures; however, programs also influence this, so ultimate accountability is somewhat confusing.

Findings

- **The MOHSW is concentrated at zonal levels; beyond that – regions, districts, and health facilities – fall administratively under the PMO/RALG.** Although the perceived and technical performance of facilities is under the MOHSW, it is the PMO/RALG that holds ultimate accountability. There are some coordination efforts between the MOHSW and the PMO/RALG. For example, there are quarterly inter-ministerial meetings to discuss common themes, such as HR. Management and accountability of supplies is also a common theme, but coordination in this aspect is limited.
- **Health facility staff are supposed to be held accountable by the districts, but the consequences for not fulfilling their responsibilities is unclear.** Health centers and dispensary staff are supposed to be responsible, among other activities:
 - Good record keeping and inventory management
 - Correctly completing reports, and submitting them on time
 - Good storage practices
- **Community Health Teams have responsibilities for holding facility level staff accountable for stock availability, but are not functioning as designed.** It is unclear as to why these teams are not functioning as envisioned.

- **District level staff, especially the district pharmacist, routinely perform supervision as part of the ILS, but this does not seem to impact accountability of lower level facilities.** Of the facilities visited, they had all received supervision visits within the last quarter; however, this did not equate to improvements in reporting rates or stock availability.
- **Stakeholders do not fully understand what is within MSD's control and what is not.** MSD is often blamed by facilities and others for lack of product availability. MSD is responsible for activities such as:
 - Storage, distribution, and procurement
 - On-time delivery, prompt order processing, and route optimization
 - Contract management, supplier communication, and on-time payment of suppliers

There are areas for improvement in some of these functions, as detailed in the section on Operational Processes. However, MSD is not responsible for:

- Mobilizing sufficient financial resources for procurement
 - Ensuring facility orders are submitted on time
- **Mechanisms for holding MSD accountable are clear.** MSD is held accountable by a Board of Trustees, the MOHSW (specifically the Permanent Secretary, the Minister, and PSS), as well as parliament. They are held accountable through yearly independent audits, routine updates on the implementation of their strategic plan, and the dissemination of key performance indicators (KPIs) which are routinely calculated and reported on the balance score card
 - **There is no formal linkage between MSD and local governments.** Local governments, under the PMO/RALG, and MSD, under the MOHSW, do not formally communicate. MSD is supposed to convene annual MSD stakeholder's meetings; however, these have not been held as planned.
 - **It is unclear who, and by what mechanism, the MOHSW should be held accountable for some responsibilities.** These include:
 - Providing sufficient information to enable proper planning and allocation of resources, and conducting quantifications
 - Efficiently managing the allocated resources, including prompt disbursement of funds to MSD and facilities, and paying invoices to MSD
 - Monitoring of the total supply chain activities, and conformance at all levels (including MSD) to identify and address problems

The PMO/RALG must also be held accountable.

Ongoing and Planned Interventions

As part of the assessment, there were no interventions addressing accountability being led by the MOHSW. However, other entities are implementing interventions, such as:

- Civil Society Organizations (CSOs), such as Wajibika and Sikika, are increasing and publicizing challenges in the health system (such as product availability), where accountability is lacking
- NGOs are working to strengthen local government capacity to improve accountability

Recommendations

The following recommendations are offered to improve accountability within the supply chain:

- **Link supportive supervision with performance reviews and subsequent rewards (either monetary or non-monetary).** Currently a standard performance review process is not in place. Although supervisions take place, it has not resulted in improvement.
- **Review the current supervision mechanism and check list to adequately address commodity availability and staff development at health facilities.** Supervision is already taking place. Because it has not resulted in improved performance, the supervision mechanisms and checklists should be reviewed to ensure that commodity availability issues are sufficiently addressed.
- **Refine/cement supply chain roles and responsibilities as part of the development of a supply chain master plan.** Before designing formal accountability mechanisms, it is necessary to clarify any supply chain roles which may be murky. The development of the supply chain master plan is an ideal mechanism for this clarification.
- **Implement communication campaign to ensure that all supply chain actors understand their own roles, and the roles of others.** All stakeholders must understand their own role, and the roles of others, before they can hold others or be held accountable.
- **Map and explicitly state mechanisms for how each actor is held accountable (and how they are measured), by whom, and what consequences are for filling designated responsibilities.** This is a significant stream of work, and would take time to develop and implement. This must be done from one end of the supply chain to the other. For example, how does MSD hold suppliers (both manufacturers and donors) accountable for deliveries of promised consignments? How does the MOHSW hold the MOF accountable for disbursements on time, and of an agreed upon amount? How does the community hold facility level staff accountable for product availability? To complete this stream of work, each stakeholder's responsibilities must be clear and documented, as well as how stakeholders relate with each other on supply chain matters.
- **Review and refine the working relationship accountability mechanism between MOHSW, PMO-RALG, and MSD and develop quarterly meetings between the various entities to discuss supply chain related issues.** The three primary central level bodies: MOHSW, PMO-RALG, and MSD all have key roles in ensuring a high performing

supply chain. The accountability mechanisms stated above should be applied to these central level bodies, to demonstrate the strong political will and coordinated effort required to improve overall supply chain functioning.

- **Reactivate the District Health Boards and Facility Health Committees to permanently include commodity availability on the agenda.** District Health Boards and Facility Health Committees are supposed to have responsibilities for commodity availability. However, these have not been functioning as designed. Under the new workstream of accountability, these entities should be reactivated, with explicit mandate for product availability.
- **Formally collaborate with CSOs and NGOs working on accountability interventions.** There are opportunities to formally collaborate with CSOs and NGOs working on accountability interventions, including monitoring product availability at service delivery points.
- **Continue to follow the recommendations of the World Bank program of open governance where the MOHSW is required to put in the public domain, all funds provided to the facilities and the facilities to inform what they received from MSD.** Keeping information transparent and accessible about funding provided to facilities, and for facilities to know what they received from MSD, helps ensure accountability.

Leadership and Governance

Various actors lead and govern the supply chain through laws, regulations, policies, strategic decision making, planning, implementation and monitoring of activities at different levels. Good leadership and governance are of utmost importance to set the parameters within which the actors in the supply chain may perform their functions. For this reason, the roles and responsibilities of all of these actors need to be clearly defined to ensure seamless management of the supply chain.

The MOHSW owns the supply chain for medicines and medical supplies and has to ensure the proper management and compliance of all actors involved. Through its different units, its responsibilities include:

- The selection of commodities through Standard Treatment Guidelines and Essential Medicines Lists
- The needs for those commodities, based on morbidity, demographic, services and logistics data
- Identifying and mobilizing necessary resources (financial, operational, capital and human resource)
- Monitoring and evaluation of supply chain activities
- Coordination of inputs and of internal and external actors
- Communication.

Annually, the MOHSW prepares the budget for supply chain activities through a vigorous process that includes input from all its units and presents that to the Ministry of Finance and Parliament for consideration. The GOT expects the MOHSW to lead and manage its portfolio in a manner that would be transparent and cost effective. To this the governance at MOHSW is aligned with that of public sector in all aspects. Compliance is strongly monitored in the areas of financial management and procurement through the office of the Auditor General and the PPRA.

MOHSW assigned the functions of procurement, warehousing and distribution to MSD which reports to the Permanent Secretary's office at MOHSW. It has been reported that a Memorandum of Understanding between MOHSW and MSD, which outlines and explains the monitoring of MSD's service to MOHSW, did exist but is now outdated.

The Minister of Health appoints the MSD board of trustees and chairman for three-year terms. The MSD Director General serves as the Secretary of the Board. The board holds quarterly scheduled meetings where MSD management reports on the financial and operational performance of the organization. During 2011/2012, the board held 10 extra-ordinary meetings. The MSD board manages its activities through three subcommittees as follows:

- The Audit and Risk Management Committee

- The Finance and Administration Committee
- The Technical Committee.

The PMO-RALG manages the functions of most of the SDPs (regional and district hospitals, district management offices, health centers, dispensaries etc.) that report separately at ministerial level into the GOT. The District Medical Office (DMO) manages the SDPs at district level in every district. At the district level, a district health management committee, formed from members of the community and the DMO, provides greater transparency at the district level in addition to shared ownership. Similarly, the health facility management committees have been established for health centers and dispensaries and were reportedly functional. Specialized tertiary care facilities report directly to the MOHSW structure and are supported for both commodities and other resources through the MOHSW budget.

Findings

- **There is strong political commitment to supply chain strengthening.** This was evident in discussions with the Deputy Minister, the management teams at MOHSW, MSD and other stakeholders. There have been continued investments especially over the last decade to improve processes and procedures and to collect and disseminate information about the consumption and availability of products, such as continued investments in strengthening the ILS, and a focus on last mile delivery. Additionally, there has been significant support for infrastructure developments and other capital input to support proper functioning of the supply chain, such as the construction of warehouses in Keko, Mwanza, Dodoma and Mbeya. This commitment is still strong and efforts to continuously improve and support the supply chain are ongoing. MOHSW and MSD manage to prioritize this with its partners as considerable input has been received from donors.
- **Significant organizational change is being undertaken by both MSD and MOHSW.** These changes aim to improve the managing of the supply chain and the monitoring of its performance. The development and implementation of the LMU will fundamentally change how the MOHSW manages and responds to supply chain needs. Reporting and communication channels for the LMU have been designed but not yet fully approved. Currently, the plan is for the LMU to be under PSS.
- **Not all actors are clear about their own supply chain responsibilities and those of others.** If an entity is responsible for the quantification of requirements, that entity or actor needs to take on the leadership and manage the responsibility assigned. All other actors need to understand, respect and support that mandate in a coordinated manner. If the leadership is assumed by another actor, then the effort becomes uncoordinated, unmanageable and ineffective as it creates friction between the actor who feels responsible and other actors.
- **There are several acting staff in positions at MOHSW.** The following positions had acting staff at the time of the assessment: Chief Pharmacist, Head of PSS, and Minister of Health. Additionally, the Director General at MSD is also Acting. This has the potential to affect the supply chain negatively as fast and effective decision making are sometimes

required in this highly operational type of environment. Some entities within the MOHSW assert that having acting staff does not affect decision making; however, some staff have been in acting positions for a long time, and acting positions should be filled as quickly as possible.

- **Although PSS has responsibility for overall supply chain performance, there are other entities which duplicate PSS responsibilities. The position of PSS in the MOHSW organogram may compromise its ability to fulfill this responsibility effectively.** The MOHSW is responsible for overall performance of the supply chain. PSS does have some responsibility for supply chain oversight and management; however, other entities such as program pharmacists from the vertical programs, also have responsibility. There are some aspects of supply chain that fall outside of PSS, and this makes it unclear which department, unit, or section is ultimately responsible. Further, the location of the PSS in the MOHSW organogram may compromise its ability to fulfill this responsibility effectively. PSS is currently under the Quality Assurance division, which is under the Chief Medical Officer, who then reports to the Permanent Secretary. Meanwhile, MSD reports directly to the Permanent Secretary. There is no formal reporting mechanism between MSD and PSS. PSS is responsible for overall, there are other parallel entities that overlap and duplicate the PSS responsibilities. Program pharmacists from NACP, NMCP, RCHS, NTLF etc... need to provide more information to PSS, for improved internal coordination
- **The responsibilities of the PMO-RALG in the supply chain seem are unclear.** Quarterly meetings between MOHSW and PMO-RALG have recently been started, which provides a critical avenue for discussing supply chain matters and the support that PMO-RALG can provide. It was also noted that donors do not generally engage the PMO-RALG in supply chain support activities.
- **Currently there is no supply chain master plan in place that would guide all role players on implementing and monitoring supply chain actions interventions.** There are several strategic plans in place; however, not specifically for the supply chain. Without a supply chain master plan, coordination of stakeholders may be limited, with duplication or gaps in roles and activities. A supply chain master plan can also help to align the objectives of various stakeholders.

Ongoing and Planned Interventions

The following interventions are currently under implementation or planned in the area of leadership and governance:

- The Strategic Review of the National Supply Chain; February/ March 2013
- A health policy is currently under review. The MOHSW reported a pharmaceutical master plan has been drafted but the assessment team was unable to obtain a copy of the draft

- Inter-ministerial meetings between PMO-RALG that has been started with supply chain matters high on the agenda. It has also been reported that there are intentions to include the President's Office into this forum
- The development of the Logistics Management Unit (LMU) that will be a focal point for information to inform management at MOHSW, MSD and other role players on decision making and strategic direction.
- Proposal to change the status of PSS to a directorate, reporting directly to the CMO, is currently under discussion.

Recommendations

The follow recommendations are offered for leadership and governance:

- **Empower the identified appropriate entity that owns the supply chain, with requisite decision making power, and solidify the position of PSS.** Significant money is budgeted for commodities; in the 2010/2011 MOHSW budget, 44% of total funding was targeted for commodities (298 billion of 678 billion Tshs). The MOHSW (including its various units) owns the responsibility for the supply chain, including the responsibility for outsourced activities and those where partners or donors are engaged. Supply chain issues and activities should be on the agenda of the top levels of the MOHSW. The MOHSW should clearly identify the entity within the MOHSW that has ultimate responsibility for the supply chain, and identify a supply chain champion. If PSS is the “owner” of the supply chain, they should be empowered with the necessary decision making power, and increase the pace of the approval process to their status as a directorate. The structure of the PPS needs to be finalized and its reporting line directly to the Permanent Secretary or much closer to the office of the PS should be considered, rather than reporting to the CMO.
- **Finalize the reporting line for the LMU.** As described previously, the LMU will fundamentally change how the MOHSW manages the supply chain; however, having this entity under PSS, where PSS is currently located, does not elevate supply chain to the highest levels of the MOHSW. This unit needs to be finally established and become operational. Stakeholders should consider having the LMU report directly to MSD, as it may be easier for MSD to manage the day to day operations of the unit.
- **Fill positions of acting staff with permanent staff.** The MOHSW needs to progress on the appointment of permanent staff in the positions where officers are acting. This will facilitate faster and more effective decision making. Additionally, MSD needs a Director General, who is not acting.
- **Review the terms of establishment of MSD Board of Trustees and the MSD Act.** The MSD board of trustees should be appointed with overlapping terms and replacing the whole board at the same time is not recommended. This will provide continuity in strategic planning and implementation monitoring. According to the current MSD Act, the Board Chairman should be appointed; however, the Acting Chairman was elected amongst the board members.. The board needs to invest in developing a Board Charter that will clearly

document its functioning and those of its committees. It will also describe induction of board members and describe a self-evaluation mechanism for the performance of the board and its individual members. Several previous assessments recommended to review and update the MSD Act. The Board of Trustees issues described in this assessment should be addressed as part of this larger revision.

- **Engage PMO-RALG to secure their support in supply chain strengthening activities.** The newly developed forum between MOHSW and PMO-RALG needs to be nurtured. The appropriate department within PMO-RALG should be strengthened to focus on supply chain issues.
- **Develop a Supply Chain Master Plan, to form the basis for the strategic direction and coordination for supply chain support, interventions and improvement.**

Data Visibility

Information is the engine driving the entire logistics cycle. In Tanzania, challenges with data are different for different types of commodities. Challenges with data include: reporting and on-time reporting, data quality, tools for managing data, and the overall visibility of logistics data

Findings

Data Reporting

- **Reporting rates in the ILS are lower than the reporting rate for the ARV logistics system.** Figure 20 shows the reporting rates and reporting timeliness for ARVs and for HIV test kits in 2012. For ARVs, the reporting rates in 2012 were between 90% and 100%, with around 80% on time reporting. The ILS, on the other hand, had an average on time reporting rate of around 30% and an overall reporting rate of 60% in 2012. Figure 21 shows the average reporting rates for the ILS R&Rs.

Figure 22. Reporting rate and reporting timeliness for ARVs and HIV test kits

Source: SCMA Monthly Reports

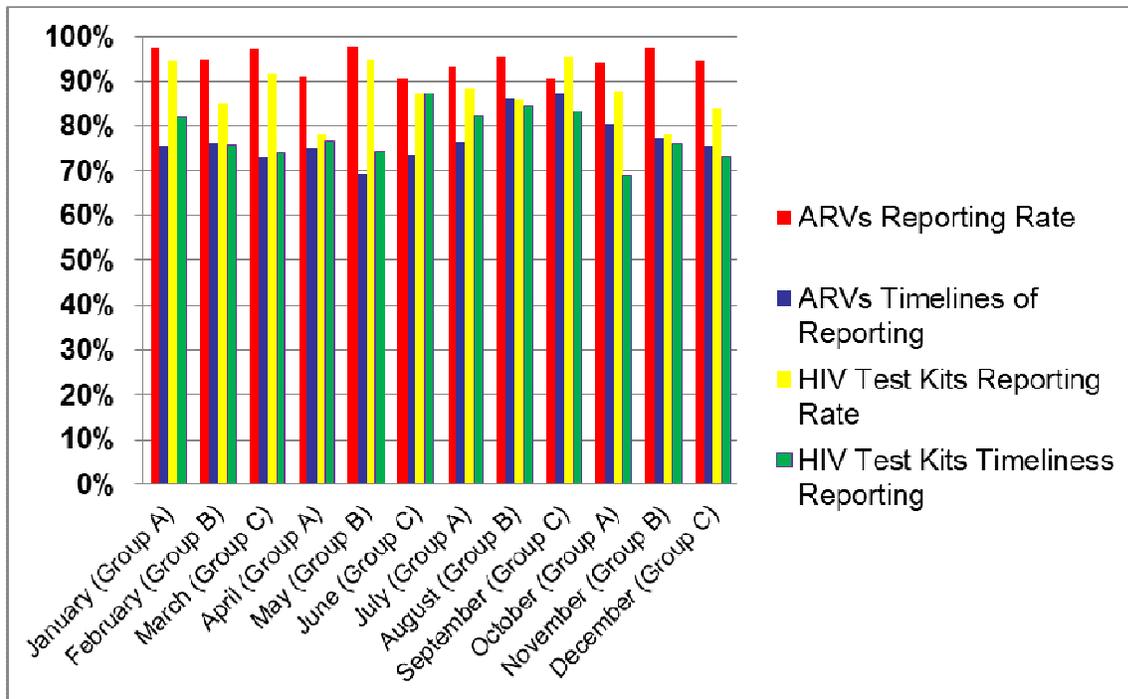
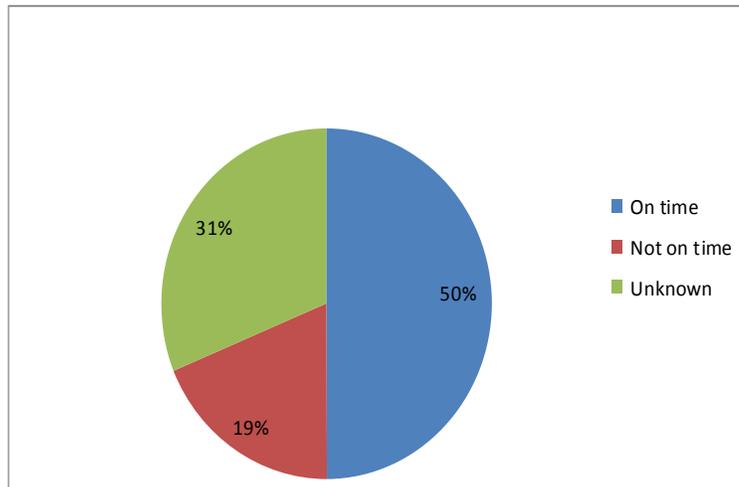


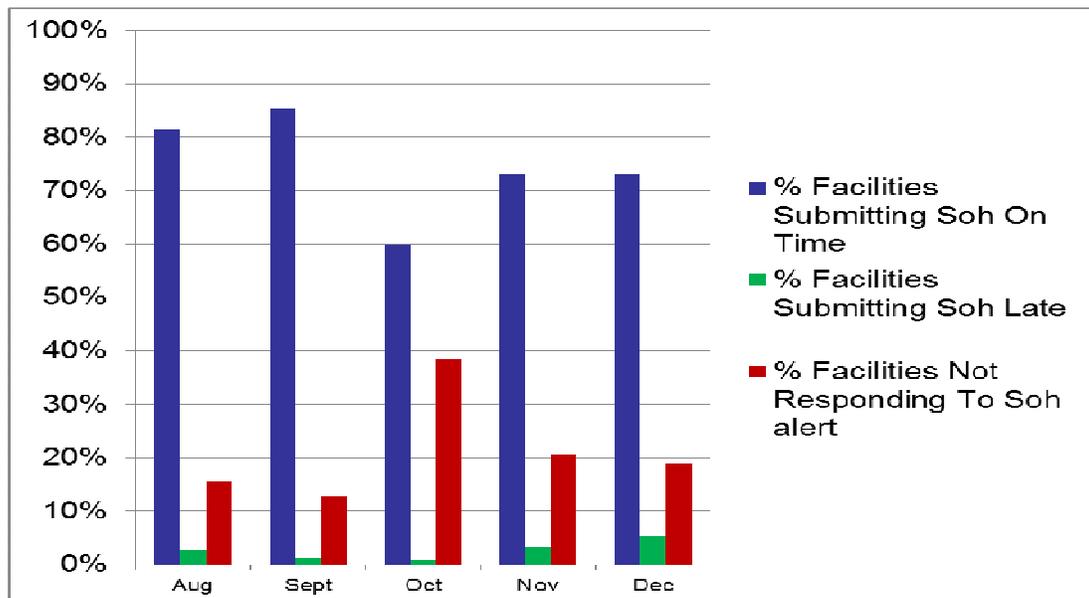
Figure 23. Reporting rate and reporting timeliness for ILS

Source: End Use Verification Survey



- **Reporting rates are lower for the paper-based R&R than the ILSGateway mobile health system.** The ILSGateway, though not an LMIS, requires facility level staff to send via SMS their current stock on hand of key health commodities, submitted monthly. Stock on hand is also a data item included in the paper-based R&Rs. Figure 22 shows the on time reporting rate of the ILSGateway, which averages at 75%, higher than the 31% for the paper-based R&R.

Figure 24. On time reporting rate for ILSGateway Source: ILSGateway



- Reporting rates for the laboratory logistics system quarterly reports are much higher than for the laboratory logistics system monthly reports.** Figures 22, 23, 24, and 25 show the quarterly and monthly reporting rates in the laboratory logistics system (October – December 2012 and January – March 2013). The overall reporting rate for laboratory supplies is much like those for ARVs, with a couple of region-specific exceptions: Iringa and DSM. The monthly reporting rate, however, looks more like the ILS reporting rates. Like for ARVs, the SCMAs follow up with facilities to submit their LMIS reports, both quarterly and monthly. The low monthly reporting rates may be due to a lack of time at the facility level.

Figure 25. Lab Quarterly Report Reporting Rates (October – December 2012) Source: SCMA Monthly reports

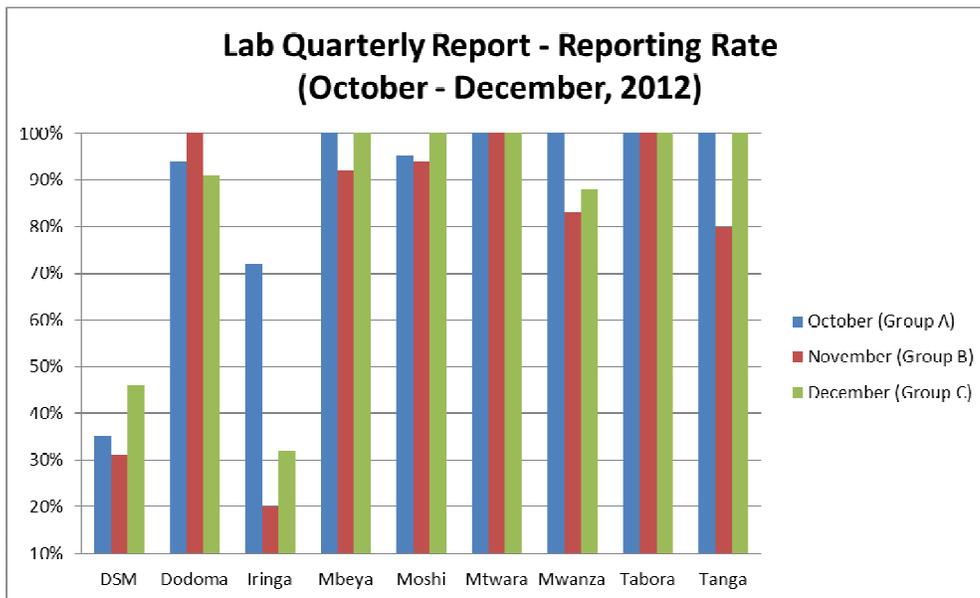


Figure 26. Lab Monthly Report – Reporting Rates (October – December 2012) Source: SCMA Monthly reports

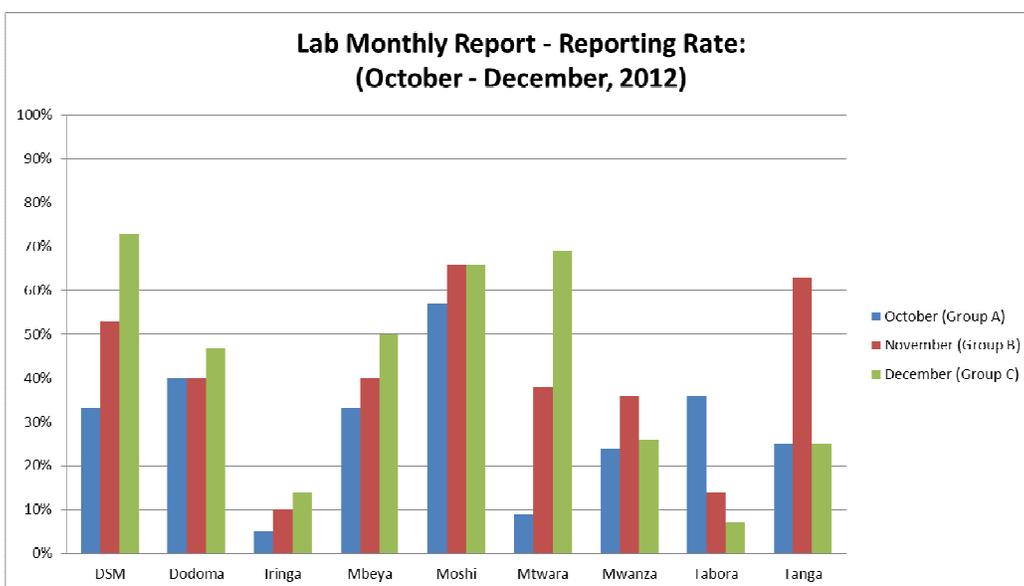


Figure 27. Lab Quarterly Report – Reporting Rates (January – March 2013) Source: SCMA
Monthly reports

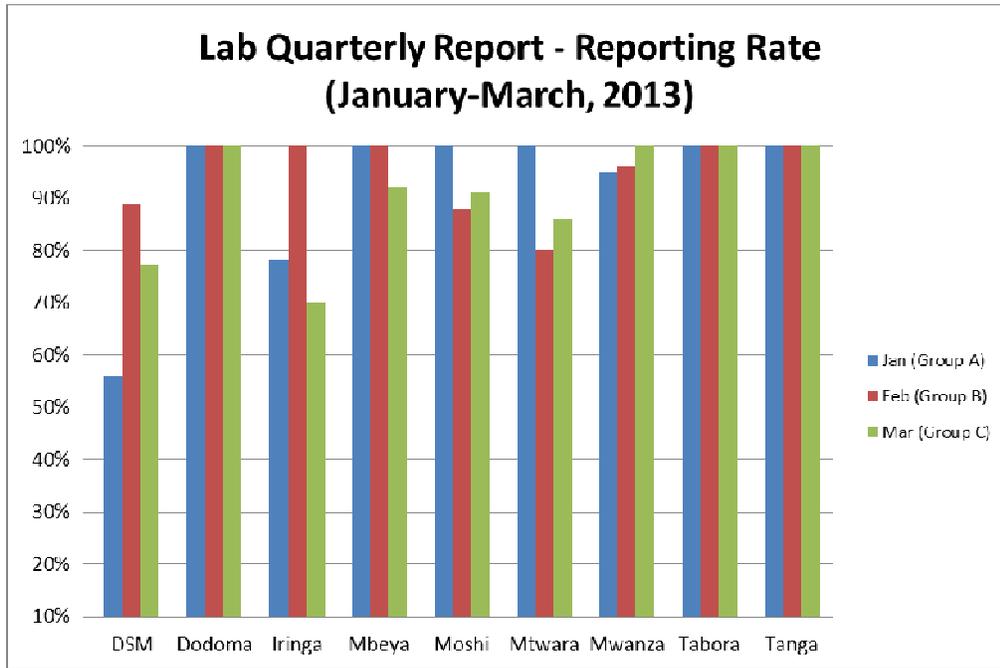
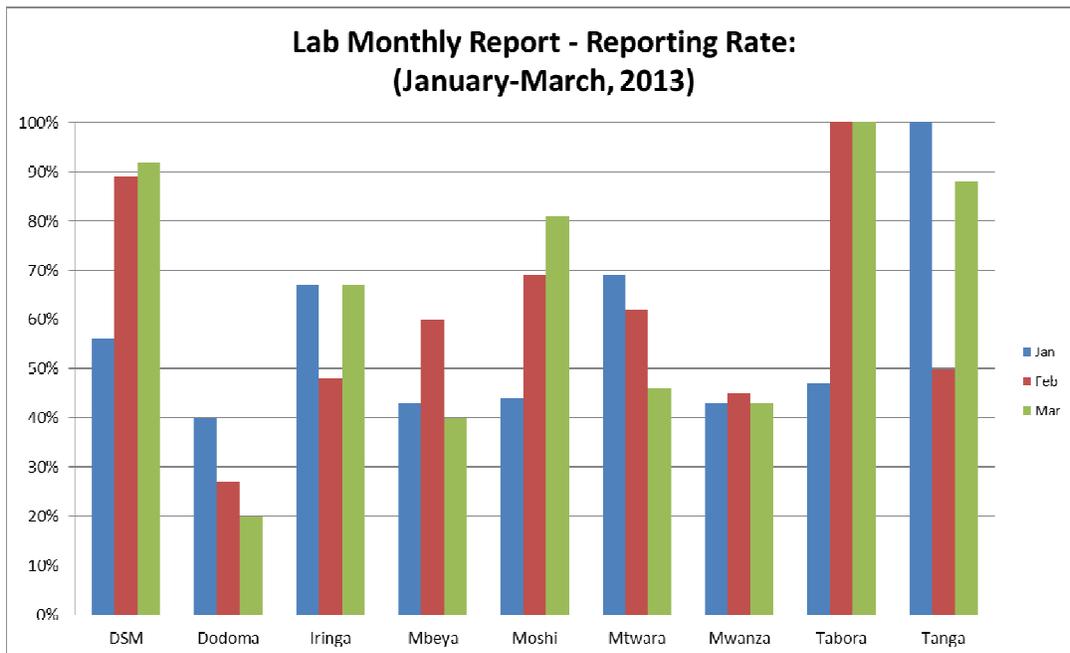


Figure 28. Lab Monthly Report – Reporting Rates (January – March 2013) Source: SCMA
Monthly reports

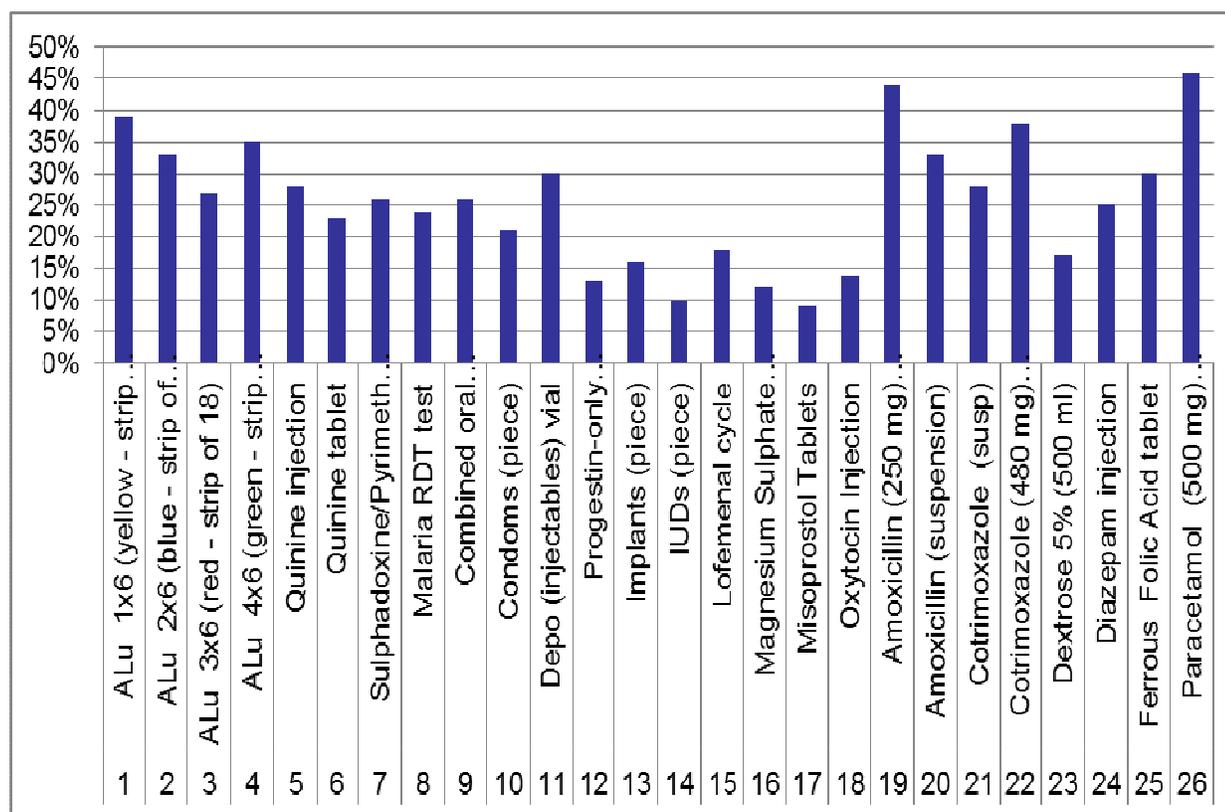


- There are several causes of low reporting, including but not limited to:
 - Forms not available
 - Not enough time to complete
 - Lack of capacity
 - Lack of motivation/incentives/accountability
 - No transport (or funding for transport) to get the report to the district.

Data Quality

In addition to actually getting the data up from the facility level, there are also challenges with the quality of the data that does come up. These include:

- **In the ILS R&R, there are 1,580 separate boxes which the facility staff must fill in.** With that number of unique data items, there are certain to be mistakes. Furthermore, the ILS R&R is only one of several reports that SDP staff must complete (see below section on data tools).
- **There are reports of R&Rs being copied from one reporting period to the next,** so that identical data is reported for two different quarters. Similarly, supervisory assessments have shown that sometimes staff may be fabricating data, as they perceive the form takes too long, or requires too much effort, to complete per the SOPs.
- **The percent of facilities with up to date Stock Cards remains low, at around 50%.** Stock on hand is a key piece of data used to calculate resupply quantities, and to assess months of stock. If the integrity of this data item is questionable, this affects important supply chain decisions up and down the supply chain. Figure 23 shows the percent of facilities with up to date Stock Cards, according to data from the EUV Activity.

Figure 29. Percent of facilities with up to date Stock Cards Source: End Use Verification

Data Tools

- **At one facility, the same data may be captured in different registers.** Facilities have a number of different registers that need to be completed. If a pregnant woman visits a health facility, she would likely need to be recorded in the outpatient register, the ANC register, the PMTCT register, possibly the HIV testing register, and depending on whether any medicines were given, in a number of dispensing registers.
- **Same data from the same facility may be reported through multiple channels.** In addition to the number of tools for data capture, there are several mechanisms and channels for data reporting. One example is the number of ways in which stock on hand of artemether/lumefantrine is reported. These include:
 - SMS for life (weekly)
 - ILSGateway (monthly)
 - Monthly malaria report (monthly, which is sent to the District Malaria Coordinator and contains information on both logistics as well as services, i.e. the number of malaria cases seen)
 - ILS R&R (quarterly)

Of all of the reports listed above, the ILS R&R is the only one which is linked to the resupply of commodities. As described above, there are concerns with the quality of data coming through the R&R as well as the timeliness with which those data are submitted.

Data Visibility and Information Sharing

- **For most products, no national level data on SOH or consumption is currently available.**
 - Vertical programs reported that they do not have insight into SOH at MSD. This is likely a result of some implementation challenges with the new ERP; however, SOH is a critical data item that should always be available
 - The eLMIS is currently under development; however, it is important to recognize that implementing an eLMIS will not address low reporting rates, or all issues with data quality. Utilizing a tool for aggregation and analysis will undoubtedly facilitate informed decision making, but data must be generated from facilities, and those data must be of the right quality
- **MSD must frequently develop ad hoc reports for various stakeholders, including programs and partners, which distracts them from their core business.** Several stakeholders – donors, programs, NGOs, implementing partners – affect or are affected by the supply chain. Each of these stakeholders has information requirements. All reported that they request specific information from MSD -- sometimes providing a unique template for them to complete – with information on the status of commodities.

Ongoing and Planned Interventions

There are several significant interventions being implemented to improve the visibility of data. These include –

- Continuing rollout of revised ILS. At the end of the rollout, around 12,000 people will be trained. Given challenges with staff retention and movement of staff, the training on ILS will continue to be ongoing. The training on the revised ILS and the ILSGateway have been combined.
- Continuing rollout of ILSGateway. At the time of writing of this report, around 50% of health facilities are participating in the ILSGateway. The ultimate goal of the ILSGateway is to make the ILS more efficient and effective by using mobile technologies to facilitate information flow and decision making.
- Continuing rollout of the new ERP, E9. The implementation of the new ERP affected almost every aspect of this strategic review. Stakeholders, including MSD staff, expressed concern with the timing of the ERP implementation, perceiving the implementation as taking too long, and the significant change to processes that the new ERP entailed. Some stakeholders said that the new ERP was problematic, and that they thought the Orion system worked better. The implementing partner for the ERP has developed a change management plan, and is engaging stakeholders accordingly.

- Development of the eLMIS. The MOHSW, in partnership with the USAID | DELIVER PROJECT and SCMS project, has begun to develop of an electronic logistics management information system (eLMIS). The eLMIS will provide integrated access to:
 - Accurate, timely and routine consumption data
 - Real-time logistics management capabilities covering point of origin to point of consumption
 - Demand forecasting, capacity planning & modeling based on consumption

A goal of the eLMIS initiative is to develop a technology platform that will incorporate the existing automated electronic data as well as support new proposed technology to assist in the data collection, dissemination and processing. The eLMIS will accept all R&R data for all health commodities and programs nationwide. The eLMIS then will provide the ability to analyze that data in ways that inform decision making. This project is expected to be implemented by September 2013

- Implementation of laboratory supplies logistics system. The laboratory supplies logistics system continues to be implemented in different health facilities.
- Implementation of TB and leprosy logistics system. The design of the TB and leprosy logistics system was completed in 2011. The implementation is beginning in 2013.

Recommendations

The following recommendations are offered, to increase data availability, quality, visibility, and use for decision-making:

- **Revise components of the ILS.** ILS strengthening efforts have been ongoing since 2006, when it was first implemented. However, challenges with reporting rates, on time reporting, and data quality continue to be faced. A critical examination of the ILS should be conducted, with a lens towards changing any (some, or all) of the following
 - Who is responsible for data submission, considering the level of effort required from facility staff as well as district pharmacist
 - How data are submitted, considering the reporting rates for ILSGateway are significantly higher than the paper R&R
 - What data are submitted (including which products). The ILS currently requires data on 157 products, and 15 different data points for each product. Stakeholders should determine if all those data items are necessary, and if all those products are necessary.
 - Who is doing the quality checks and calculations, considering the demands on the district pharmacist.
- **Pilot facilitated ordering system.** An option that should be explored is whether a facilitated ordering system could address many of the challenges experienced with the ILS. In the facilitated ordering system, facility staff do not place orders; rather, a district

commodity manager (a new position, as described in the section on human resources) travels to facilities and gathers data. Ideally, the district commodity manager would travel with a laptop (or other tool) loaded with a software into which data could be entered. Physical inventories would be conducted, alongside facility staff, and the counts would be entered into the software. This would address data quality issues, and non-reporting facilities. The district commodity manager could also address budget concerns at the time of data collection, and work with the facility staff to prioritize and agree upon which commodities to order, in which quantities. This type of system would dovetail nicely with the implementation of direct delivery from MSD. As a facility's report/order is complete, the information would be sent to MSD, who would then begin picking and packing, for facilities according to the distribution route.

- **From the facility level, harmonize and simplify the number of ways in which data are being collected and submitted.** There are several different registers and reports. An activity should be conducted to itemize each data collection tool, and every report, to determine which data items overlap across the different tools. The number of data tools should be streamlined to ease the burden of data management from the facility level.
- **Develop routine, standard reports that can be shared with stakeholders.** Although each stakeholder may have some specialized data needs, most stakeholders require the same information – for example, stock on hand and issues data (or consumption). MSD and PSS should work with programs to develop standard reports, and agree upon a routine dissemination schedule to share those reports. This would eliminate effort on both the requestor for information, and the provider of information.
- **Develop and implement change management strategy that improves the use of data for decision-making** (LMU-led). Supply chain decisions should be data driven. In the absence of routinely available, quality logistics data in Tanzania, supply chain managers have been in a position to make decisions based on anecdotes, perceptions, or instincts. Cultivating an organizational and institutional switch to data driven decision making will require a change management strategy. Decision-makers will need to shift their paradigms in terms of what to base their decisions on.

Human Resources

Findings

Building an effective supply chain involves engaging the *right people* in the *right quantities* with the *right skills* in the *right place* at the *right time* to implement the procedures and processes that ensure the supply of health commodities. To run effectively, public health supply chains require motivated, trained, skilled staff familiar with the standard operating procedures (SOPs) required for each logistics function. These staff should be empowered to make decisions, or participate in decision- and policy-making processes, that impact health supplies and the supply chains. The assessment team reviewed the current status of human resources (HR) especially their current capacity to implement the ILS in Tanzania

HR at Health facility level

The primary focus of staff at this level is on serving customers. However, in the current design of the supply chains, health facility staff have the additional responsibility of collecting logistics data about consumption of health commodities and supplies and compiling this information in relevant reports. In addition to reports for the health management information system (HMIS), there are a number of logistics reports that need to be completed at health facility level, including

- Report and requisition forms for medicines on the ILS
- Report and requisition forms for HIV/AIDS medicines
- Report and requisition forms for laboratory items

The completion of these reports is a major challenge for two main reasons: sufficient staff, and staff with sufficient capacity.

- **Some facilities do not have sufficient staff.** There are several positions that have not been filled due to the inability of the public health system to attract and retain skilled staff especially in rural areas. Salaries and benefits in the private sector and in urban areas are significantly higher. The situation is further exacerbated by high absenteeism. During the assessment, reasons identified for absenteeism included:
 - Short-term trainings/seminars/workshops
 - Official travel (e.g. collecting supplies from district office)
 - Outreach activities in the community
 - Long-term trainings
 - Annual or sick leave

- **Some staff do not have sufficient capacity, especially at the primary health center (PHC) level.** Despite the numerous trainings, there are still challenges with the competence of health facility staff to carry out supply chain tasks. As a result, the logistics information collected and supplied by health facilities is often late and innaccurate.
- **Several facilities have developed and implemented innovative solutions.** In part, these are done to mitigate the impact of lack of health workers in rural areas. For instance, we found that some districts had started recruitment and retention of health workers who have retired to rural areas. Another facility was producing its own IV fluids.

District level

- **Human resource management and retention is a challenge.** Under the current decentralized system, regions and districts have the mandate to identify and fill existing staff vacancies. However, low human resource management capacity has contributed to slow recruitment process, delay in staff placement and slow promotion process. In addition, human resource planning, forecasting, career development and succession planning capacity are still poorly developed. Financial resources available to districts are severely limited. Consequently, several regions and districts have set budget ceiling on personnel emoluments which limits the recruitment of required staff and the replacement of existing vacant positions.
- **District level staff wear multiple hats, which affects their ability to fill these roles effectively.** The main supply chain HR role of the district health management team is to recruit, supervise and mentor health workers in the district who have supply chain responsibilities. To a large extent, this key responsibility falls in the hands of the district pharmacist and the district medical officer (DMO). The assessment team found that often the DMO and district pharmacist play a multiplicity of roles. For instance, in one district visited during the assessment, the DMO was also district mental health officer, district malaria coordinator, district laboratory services coordinator, and the district AIDS Coordinator. The district pharmacist was also the pharmacist at the district hospital.
- **District pharmacists have significant responsibilities for ensuring performance various logistics systems, which are compromised because of the heavy workload.** Their effectiveness in these multiple roles is severely hampered by the obviously heavy workload. They must review all three report and requisition form from each health facility in their district (ILS, ARVs, labs). They must also perform resupply calculations, verify available funding, and prioritize which products to order, in which quantities (manually). For the ARV report and requisition form, they must manually aggregate data from facilities. For those districts not in the direct delivery system, they must transport products down to the health facilities.

Central and zonal levels

- **At the zonal level, Supply Chain Management Advisors (SCMAs) provide critical oversight and management to ARVs and laboratory items within the zones; however,**

there is no equivalent for the ILS. The SCMAs are funded by the SCMS project, based at MSD zonal stores.

- **At MSD, HR functions are centralized.** There is no autonomy at the zonal level to make decisions about recruiting staff or to carry out disciplinary procedures is necessary, or to quickly respond to HR needs. Currently, there are several vacant positions at some MSD zonal stores. At one zone visited, a vehicle had been procured, but they had been waiting for more than six months for a driver to be hired.
- **At MSD, multiple interventions and ad-hoc requirements derail and limit staff ability to focus on their core functions and routine activities.** MSD is undergoing several significant interventions – from the HR plan to the implementation of the ERP to network optimization. MSD staff must respond to needs of these interventions. The nature of their day to day activities is constantly evolving. This affects the performance of MSD.
- **HRH coordination is faced with a number of challenges, in part emerging from decentralization.** The MOHSW has mandate for coordinating policy formulation, guidelines, standards and the identification of priorities in the health sector. Management of human resource in the public health sector is a joint responsibility among multiple institutions including MOHSW and PMO – RALG. There is lack of comprehensive and reliable system for tracking information on which staff has obtained supply chain competencies in the country. Available information on supply chain cadres in all sources such as HMIS registrars of professional bodies and other sources is very limited for the purposes of proper planning and decision making.
- **In MOHSW, some supply chain responsibilities are currently spread across several different entities (programs, units, divisions), which makes coordination difficult.** Opportunities for coordination of these activities are limited. For instance, diagnostics services unit which coordinates and leads policy formulation for laboratory services in the country has little opportunity to contribute to the process of commissioning and allocating funds for laboratories services at health facilities. Currently, allocation of laboratory supplies is being done by the pharmaceutical services section. The assessment team also found that there was little evidence of coordination of trainings of health facility staff in supply chain and other health related issues.

Ongoing and planned interventions

The following are interventions in supply chain related human resource activities:

- SCMAs are active and critical to the functioning of the HIV and laboratory logistics systems
- Vertical programs have a central-level presence (NMCP, NACP, NTLP, RCHS) within the MOHSW. Essential medicines are under the purview of PSS, who is also responsible for all program commodities.
- A logistics management unit (LMU) is in development. The LMU will act as the central coordination unit for all supply chain functions in the public health sector

- Significant capacity building efforts are made towards facility and district staff through ILS trainings and other trainings
- The MOHSW is implementing a Human Resources for Health strategic plan 2008 – 2013
- MSD is also implementing a five year Human Resource plan
- The MOHSW, with assistance from the USAID | DELIVER PROJECT, has taken significant steps to introduce pre-service training in supply chain management for pharmacy students. At the time of the assessment, a curriculum for undergraduate pharmacy students was being rolled out at one university
- The MOHSW is planning to build capacity to health facility staff on the management of TV and leprosy medicines and roll out a TBL logistics system

Recommendations

The following recommendations are offered to strengthen HR in supply chain.:

- **Align supply chain responsibilities with capacity and sufficiency of staff.** Current designated supply chain responsibilities do not match the capacity at each level of the supply chain. For example, if capacity at the facility staff is lacking, then the supply chain responsibilities that are given to facility level staff must be reviewed and revised. Similarly, for the most part district level staff are overwhelmed with a range of responsibilities, and simply cannot fulfill all of their obligations due to competing priorities. A significant burden of work is placed on district level staff; the role of the district in terms of supply chain performance should be revised.
- **Review the role of the District Pharmacist and introduce a new position of District Commodity Manager.** Commodity management responsibilities have been tacked on to already existing positions. The performance of the supply chain depends on staff that are already fully committed to other activities. With commodities representing a significant part of the overall health budget, it merits have dedicated staff to managing and monitoring health commodity availability in the district. This new position should be in accordance with the LMU structure in development.
- **Identify high performing facilities and districts and scale up practices that contribute to improved commodity availability.** There are high performing facilities who have prioritized availability of commodities and have implemented local solutions that have led to significant improvement in performance. (e.g. in Iramba district). Such solutions should be studied and scaled up as appropriate.
- **Devote a portion of the resources obtained through cost-sharing needs to funding performance driven supportive supervision visits especially to primary care health facilities.** Significant focus needs to be put on boosting the poor productivity of the available health workforce. The supportive supervision visits should also be used as an opportunity for performance appraisal including regular review of job descriptions

- **Develop motivation and incentive pay-for-performance package that targets staff in primary care facilities.** A performance based incentive intervention that rewards supply chain staff for diligently performing supply chain tasks would go a long way in improving levels of motivation while boosting productivity as well
- **Engage professional councils to recognize and add supply chain proficiencies to the schedule continuous professional development.**
- **Develop a master list of all trainings, including pre-service and in-service trainings.** This has been requested by MSD, and relevant development partners should engage with MOHSW and share the information.

Private Sector

The assessment team consulted both local manufacturers as well as suppliers, to determine their current role and potential in improving product availability, as well as their experiences in dealing with MSD. To a large extent, many private sector suppliers feel that dealing with MSD is risky: contracted quantities may not be ordered, payments are delayed, and communication is challenging. Though the local manufacturing base is small, there is significant potential in partnering with local suppliers.

Findings

- **Local manufacturing is insignificant in relation to the total public sector supply chain needs; MSD is reliant on international suppliers.** Local pharmaceutical manufacturing has actually decreased in Tanzania over recent years. Additionally local suppliers feel that GOT should do more to assist the establishment of local manufacturing or to support local suppliers of medicine.
- **Local suppliers felt that they are not competing on the same level with international suppliers.** Local suppliers base their pricing is based on landed cost at MSD whilst international suppliers only includes freight and no port/ landed and clearing costs into their price. Therefore, products from local suppliers are more expensive. For international suppliers, MSD assumes these costs directly (which are usually paid by the programs or donors for the “program products”).
- **Local suppliers reported that there were delays in tender adjudication at MSD, and difficulties in tender management and communication.** Suppliers reported significant delays in the awarding of tenders, and that communication with MSD was sporadic.
- **MSD does not always order products as indicated in framework arrangements.** It was mentioned that MSD does not necessarily order products as originally indicated in framework arrangements. This can possibly create losses for suppliers as they have to plan in advance to be able to supply MSD. As a result of this it was reported that one local supplier are not prepared to engage in business with MSD any longer.
- **Suppliers reported significant delays in payments from MSD since July 2012.** This is directly linked to the new ERP system implementation. Suppliers indicates that in instances they were asked to deliver products to MSD that was already delivered 2 weeks earlier, but that MSD had not yet processed the stock delivered into their system.

Recommendations: Private Sector

Opportunities exist for both MSD and private sector in Tanzania to work together towards improving availability of medicines in the public sector but good coordination and firm commitments are needed from both MSD and private providers. The following recommendations are offered:

- **At MSD, improve contract management and communication about needs and performance with its suppliers.** MSD also needs to hold suppliers accountable for defaulting on procurement terms or supply arrangements.
- **Improve on time payments to suppliers.** The challenges with implementing the new ERP need to be solved urgently in order for supplies to be recorded and payments to suppliers processed. Late payment of suppliers may result in a loss of confidence in MSD and suppliers may raise their prices in an effort to mitigate possible financial risks. MSD must also have necessary funding in order to satisfy payments to local suppliers.
- **Utilize local vendors to supply certain selected low volume products, specialized items, or emergency items on pre agreed terms and more direct supply.** MSD is implementing a strategy for facilities to obtain stock directly from local suppliers in case MSD is out of stock. This option should be further explored on low volume products that may only be used by a few select facilities, and to remove the time MSD spends servicing these special items.
- **Investigate the modalities and costs to outsource certain functions (e.g. transportation) and support the local private sector; for example, extended delivery by local suppliers.** For certain laboratory products (such as those with short shelf lives), local vendors deliver directly to facilities. Other options for outsourcing transportation (or other functions) should be explored. This will provide more management time to concentrate efforts on other core functions within the organization.
- **Explore the potential of increasing procurement from regional suppliers to shorten lead times.** A number of suppliers and manufacturers of essential medicines are found in the Eastern and Southern African communities.
- **Determine cost efficiency of direct delivery to MSD zones from international or local suppliers.** Currently, all products procured from international suppliers are delivered to MSD central; from there, deliveries are made to MSD zones. It is possible to have multiple ship to addresses for one procurement. This would reduce lead times and significantly reduce inventory carrying costs. This strategy is not appropriate for all products; the cost efficiency should be determined and implemented appropriately.

Next Steps

During this strategic review, it was acknowledged that numerous other assessments of the supply chain have been conducted. If the recommendations in this strategic review are to get any traction, the following three critical next steps must be assumed:

1. Specifically identify who will move this stream of work forward. The MOHSW should identify a specific body or agency to move the recommendations forward
2. Build consensus around each recommendations. Though a formal presentation of the findings and recommendations were given at a stakeholder's workshop, consensus on each recommendation was not obtained.
3. Develop a Supply Chain Master Plan. As noted in the recommendations in the Leadership and Governance chapter, developing a Supply Chain Master Plan can provide an overall framework for strategic interventions and activities to improve the public sector supply chain in Tanzania. The strategic interventions part of the Supply Chain Master Plan can build off of the recommendations offered in this assessment.

Annex 1. Terms of Reference

Terms of Reference for Improving Public Health Supply Chain Performance

Strategic Review of Medical Stores Department and the National Supply Chain System, Tanzania

Rationale

Significant gains have been made in improving the performance of the public sector supply chain in Tanzania. Strengthened supply chain systems for vertical programs through PMI and PEPFAR funding have resulted in increased availability of antimalarial medicines, antiretroviral drugs, drugs to treat opportunistic infections, and other related commodities. However, general essential medicines availability remains uneven due to a number of various factors.

In Tanzania, a number of assessments in recent years² have attributed frequent stock out of medicines to one or a combination of the following factors; inadequate financing, limited efficiencies within the national supply chain systems, poor infrastructure, outdated and/or manual management information systems, human resource related challenges and poor stakeholder coordination, to mention but a few. Through the Government's increased focus on ensuring continuous medicines availability at service delivery points, augmented by development partners' support, several initiatives are currently under implementation to address some of the noted challenges. These include—

- Infrastructure enhancement for MSD warehouses and delivery fleet expansion
- Installation of new Enterprise Resource Planning system at MSD
- Strengthening MSD procurement management, performance management, and human resource management
- Distribution system optimization for direct delivery
- Development of electronic Logistics Management Information System for MOHSW, districts, and higher-level health facilities

² Ministry of Health and Social Welfare. 2008. *In-Depth Assessment of the Medicines Supply System in Tanzania*. Dar es Salaam. Supported by WHO and European Union.

SCMS. 2010. *Assessing the Capacity of Tanzanian Laboratory Services in Managing Laboratory Commodities*. Submitted to the MOHSW Diagnostic services by the Supply Chain Management System (SCMS).

Jaya Chimnani, J., et al. 2011. *Tanzania TB and Leprosy Logistics System Assessment*. Submitted to the US Agency for International Development by the Supply Chain Management System (SCMS).

- Optimization of the Integrated Logistics System
- Design and rollout of laboratory commodity logistics system
- Establishment of the Logistics Management Unit under MOHSW
- Implementation of new budget allocation formula at district and facility level for health commodities

However, it is not known whether the initiatives being undertaken are adequate to eliminate product stock-out situations at the central level—Medical Stores Department—and all service delivery points. MSD is a central player in the public sector supply chain, responsible for several key supply chain functions such as procurement, storage and distribution. In 2010 it was mandated to be responsible for last-mile delivery to all 5,000+ public health facilities. However, MSD is not the only actor in the supply chain. MSD is affected by policies—such as the mandate for direct delivery to the last mile—and financing, which is often inadequate to ensure full supply of essential medicines or effective operations at MSD. Indeed, these two elements have an enormous impact on supply chain performance and must be considered in any assessment.

Furthermore, supply chain performance is also depended upon thousands of health care workers, hundreds of council health management team members, and many regional and central personnel who all play roles and carry responsibilities for ensuring a well-functioning system and adequate supplies.

Therefore, while MSD must be a central focus of any assessment of the system, these Terms of Reference propose a more holistic and comprehensive approach for assessing the supply chain, end-to-end.

Overview

USAID has expressed willingness to support the Ministry of Health and Social Welfare initiative to undertake an assessment of the national health commodity supply chain systems with special focus on MSD, which is entrusted with managing the core functions of the public sector supply chain. The focus of this assessment would be to identify systemic strengths and weakness within MSD's operation and at other levels of the national healthcare system, to identify practical and implementable interventions that address found gaps and improve efficiencies, in order to ensure increased availability of commodities within Tanzania's public health system. Recognizing the importance of the context in which MSD operates, the assessment would also examine and synthesize broader systems issues affecting the availability of commodities, the performance of the supply chain, and the ability of MSD to fulfill its responsibilities. There are a number of initiatives and activities being implemented which aim to improve product availability and ultimately customer service. These activities are being implemented by a range of partners, with varying objectives. A summary of ongoing and planned activities will be included as part of the assessment. Recommendations will be made as to the role of and vision for MSD as a fundamental and strategic player in supply chain performance in Tanzania, as well as recommendations on specific supply chain functions. Recommendations will also be offered on a number of delivery models that MSD could adopt and adapt. And recommendations will be offered to improve the broader policy environment and financial context in which the supply chain functions.

Objectives

1. Describe the national health commodities supply chain system and MSD's current core business, functional responsibilities, roles, and relationship to other supply chain actors and functions. Also detail the role of other key stakeholders, including the MOHSW and the LGAs in the supply chain.
2. Review the current role and potential of private sector manufacturers and suppliers in improving product availability in the public health supply chain³.
3. Describe the constraints to overall product availability at the central, zonal and SDP levels, including the strengths and limitations of the existing public sector supply chain. Consider and characterize any differences in supply chain management between MSD-owned products and products owned by a 'third party' and distributed by MSD.
4. Highlight any policy, legislation and regulatory bodies such as TFDA and PPA which have significant impact on MSD, local governments and health institutions fulfilling their current roles and responsibilities.
5. Develop a master list of current and planned supply chain interventions (and related impact) focused on improving some aspects of MSD's work or of supply chain performance as well as their anticipated impact.
6. Develop and prioritize short, medium, and long term recommendations on the role of MSD and other stakeholders within the public sector supply chain with a focus on:
 - a. Pathways for mainstreaming and integrating the supply chains for externally financed or subsidized products
 - b. Identifying areas in MSD's operations that could be improved for efficiency or effectiveness with an emphasis on the financial implications of any proposed changes that ultimately result in improved product availability. These recommendations would feed into the HSSP III review and healthcare financing strategy.
 - c. Developing costed proposals on distribution and delivery models that MSD could adopt for all levels of the supply chain.
 - d. Improving the performance of supply chain actors such as the LGA and large hospitals, whose functions are outside of MSD's scope but that influence MSD's performance.
 - e. Implementing accountability mechanisms at all levels of the supply chain that would guarantee consistent product availability at the last mile and access by end-users.

Moving from Assessment to Master Plan

This assessment and related recommendations will provide the basis from which a supply chain master plan can be developed, to help guide activities related to improving overall supply chain performance and increased commodity availability, to ensure interventions are harmonized, and stakeholders aligned towards the same overall goal of improving the health of Tanzanians.

³ The recent experience with private sector participation in the health supply chain through the Affordable Medicines Facility for Malaria (AMFm) will be very relevant here.

Assessment Timeframe

Recruitment of assessment team	Nov–Dec, 2012
Preparation and literature review	Jan 07–Feb 01, 2013
Develop assessment tool	Feb 04–15, 2013
Assessment	Feb 18–Mar 15, 2013
Report Writing	Mar 18–29, 2013
Presentation to MOHSW & Stakeholders	Apr 10, 2013

Assessment Team and Methodology

The assessment will be conducted by a team of international and local personnel drawn from the USAID | DELIVER PROJECT and SCMS, led by three to four international experts in public health supply chains, warehousing and distribution operations, procurement, policy and financing. This team will work in tandem with counterparts from MSD and PSS to carry out the assessment.

Prior to the team of consultants arriving in country, a schedule will be defined indicating various stakeholder meetings as well as their intended outcomes. The team of consultants will also concurrently develop an assessment tool that addresses the specific objectives outlined in this Term of Reference. Prior to travelling to Tanzania, the entire team will also review previous assessments that have been conducted on MSD as well as the national supply chain. This will also include a review of MSD’s act of establishment among other documents.

Upon arrival in country, in briefings will take place with key stakeholders where the detailed approach, methodology and scope of the assessment will be articulated. The consultants will familiarize themselves with concurrent initiatives in the health sector such as the HSSP-MTR, healthcare financing strategy development, and preliminary results of the costing study. The assessment team will also conduct focus group discussions, key informant interviews, and quantitative analysis of existing data, particularly from MSD operations, site visits to the MSD zonal offices, health facilities and district authorities, End Use surveys and information from other logistics systems. The consultants will be expected to gather information from all stakeholders impacting commodity availability including the MOHSW, TFDA, Development Partner group members and other donors and the PMORALG and local government representatives.

Upon conclusion of the exercise, the assessment team will present their preliminary findings to the Pharmaceutical Infrastructure and Food Safety Working Group (PIFWG). The recommendations will be focused to the areas described in the objectives of these terms of reference. A final report detailing the assessment methodology, findings and prioritized, short and long term recommendations will also be developed.

Annex 2. Documents Reviewed

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Tanzanian German Programme to Support Health. 2011. *Availability and Management of Medicines and Medical Supplies, Findings from an Assessment of 87 Health Facilities in Four Regions in Tanzania*

The United Republic of Tanzania. 2011. *National Audit Office Report of the Controller and Auditor General on Special Audit on Drugs Availability at Medical Stores.*

Annex 3. Stakeholders consulted

- **Ministry of Health and Social Welfare**
 - Deputy Minister of Health and Social Welfare
 - Procurement Management Unit
 - Information and Communication Technology Unit
 - Monitoring and Evaluation Unit
 - Quality Assurance Division
 - Pharmaceutical Services Section
 - Diagnostic Services Unit
 - Chief Accountant
 - National AIDS Control Program
 - National Tuberculosis and Leprosy Program
 - Neglected Tropical Diseases
 - National Malaria Control Program
 - Regional Health Management Team (Mtwara)
 - Hospital services

- **Prime Minister’s Office – Regional Administration and Local Governments**

- **Medical Stores Department**
 - Board of Directors
 - Executive Management Team (Information Systems, Finance, Corporate Affairs, Zonal Operations, Logistics, Monitoring and Evaluation, Procurement, Quality Assurance, Customer Service)
 - Branch Managers (Mtwara, Mwanza, and Moshi)

- **Tanzania Food and Drugs Authority**

- **National Health Insurance Fund**

- **Development Partners**
 - Accenture Development Partnerships
 - Clinton Health Access Initiative

- Christian Social Services Commission
 - Deloitte/TUNAJALI
 - Engender Health
 - HJFMRI/Walter Reed Program
 - IntraHealth THPP
 - JHPIEGO
 - John Snow Inc.(SCMS project and USAID | DELIVER PROJECT)
 - LEAD PROJECT
 - Management Sciences for Health/Systems for Improved Access to Pharmaceuticals and Services Program (SIAPS)
 - Management Development for Health
 - PASADA
 - Pathfinder Intl
 - Population Services International
 - Sikika
 - Tanzania Health Promotion Services
 - Wajibika
- **Private Sector Suppliers**
 - JILICHEM (T)
 - Keko Pharmacy industries
 - Biocare Health products Ltd
- **Bilaterals and multilaterals**
 - SwissAid
 - U.S. Government, including U.S. Agency for International Development
 - DANIDA
 - UNHCR
 - UNICEF
 - UNFPA
 - World Health Organization