

**PHYSICAL DISTRIBUTION AND MEDICAL SUPPLIES BY THE
MEDICAL SUPPLIES DEPARTMENT AS FROM 2010 – 2015 IN TANZANIA**

By

Somba Mrisho Somba

**A Dissertation Submitted in Partial Fulfilment for the Requirements of the
Award of Postgraduate Diploma in Logistics and Transport Management from
National Institute of Transport**

2016

CERTIFICATION

I certify that this paper entitle “Physical Distribution and Medical Supplies by the Medical Supplies Department as from 2010 – 2015 in Tanzania for the award of **Postgraduate Diploma in Logistics and Transport Management** recorded of independent work carried out by **SOMBA MRISHO SOMBA** under my supervision and guidance. This has not been submitted or any other award elsewhere.

Major Supervisor

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I, **Somba Mrisho Somba**, declare that, this study is my own original work and it has not been presented and will not be presented to any other university for a similar or any Post graduate award.

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I extend my gratitude to my supervisor Mr. Salum Mihayo for his time and efforts while supervising this study. To me, he has been a mentor; he did more than his normal share as a lecturer and he has been so committed and dedicated towards this achievement. May our Almighty God bless him in all of his undertakings.

It is definitely impossible to mention every person who has helped in one way or the other during the execution of this study, but I really recognize the role played by everyone who knowingly or unknowingly helped me particularly my respondents in various Stakeholders such as MSD

DEDICATION

This research paper is dedicated to my family especially my wife Amina Abbas Yusuf, my parents, and all relatives and friends who devoted their spacious time and other resources to support my research undertaking. I will always remember them.

ABSTRACT

The purpose of this study was to identify Physical Distribution and Medical Supplies challenges by the Medical Supplies Department as from 2010 – 2015 in Tanzania. Data were analyzed by using content analysis technique which is the most desirable in this study, the data were presented in form of table, graph and pie chart by using statistical software and later on explanation was done in words to give clear interpretation of findings. This study recognizes the fact that Population of Tanzania has been growing an average of 3.5% annually from 38.93 million in 2006 to 44.9 million in 2012. The increase in population has a direct impact in the supply of medicine, medical equipment and overall efficiency at the health care system, lead to the increases challenges on physical distribution and medical supply such as inadequate forecasting, insufficient funds, delays in funding disbursements and long lead times, Non-availability or insufficient quantities of essential drugs; Unreliable services; Over-invoicing; Delays due to unnecessarily long procedures or long waiting chains; High prices compared to other sources of supplies; and Delivery delays of medical supply. It is recommended that, In order to overcome the problems, the following challenges should be addressed: Implement national medicine and medical supplies quantification program. Maintain working relationships with PPRA and other regulatory authorities for streamlining procurement of medicines and medical supplies. Strengthen MSD-Suppliers relationship management, Improve internal and external communication and share reports on new or changing developments in health sector. Fleet Requirements & Management: MSD needs to reassess their optimal fleet requirements (e.g. motorbikes). Build/Upgrade Dispensaries (Funding). Information Technology (Project) should be improved this will increase visibility and improve ordering at zone and DSP level. There is a need for an inventory management course (course material available), especially at district level. MSD requires additional warehouse space at all levels of the supply chain, especially at district level. However, due to the complexity of MSD's inventory management, it is unclear how MSD can assist in this area. It is important to note that a further assessment is required.

LIST OF ABBREVIATIONS

\$	USA Dollar Sign
AIDS	Acquired Immuno Deficiency Syndrome
ARVs	Anti-retroviral medicines
ARVs	Antiretroviral
CIF	Cost Insurance and Freight
CSP	Certified supply professional
CVP	Customer Value Proposition
DD	Direct Delivery
DDH	Designated District Hospital
DDP	Delivery Duty Paid
DDU	Delivery Duty Unpaid
DED	District Executive Director
DF	Directorate of Finance
DFID	Department for International Development (UK)
DG	Director General
DICT	Directorate of Information and Communication Technology
DL	Directorate of Logistics
DLMS	District Level Medical Store
DMO	District Medical Officer
DSM	Dar es Salaam
DZO	Directorate of Zonal Operation
GDP	Gross Domestic Product
GDP	Gross Domestic Product
GMP	Good Manufacturing and Practice
GMP	Good Manufacturing Practice
GOT	Government of Tanzania
GOT	Government of Tanzania
HC	Health Centre
HF	Health Facilities
HF	Health Facility

HIV	Human Immunodeficiency Virus
HQ	Headquarters
HR	Human Resource
ILS	Integrated Logistics System
MEMS	Mission for Essential Medical Supplies
MIS	Management Information System
MoF	Ministry of Finance
MoHSW	Ministry of Health and Social Welfare
MOHSW	Ministry of Health and Social Welfare
MSD	Medical Store Department
MSH	Management Sciences for Health
MTEF	Medium Term Expenditure Framework
NEDLIT	National Essential Drug List of Tanzania
NEDLIT	National Essential Drugs List for Tanzania
NEMLIT	National Essential Medicines List for Tanzania
NGOs	Non-Governmental Organization
NIMR	National Institute for Medical Research
NIT-	National Institute of Transport
NLMS	National Level Medical Store
NS	Normal Sales
QC	Quantity Control
SPSS	Statistical Packaging for Social Science
SWAP-	Sector Wide Approach
TFDA	Tanzania Food and Drugs Authority
TFDA	Tanzania Food and Drug Administration
TPI	Tanzania Pharmaceutical Industries Limited
Tshs	Tanzania shillings
VAT	Value Added Tax
WHO	World Health Organization

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CHAPTER ONE

RESEARCH PROBLEM SETTING

1.0 Introduction

This part sets the ground for the identification and justification of the research problem to be dealt with in the rest of the chapter. It starts by providing the background of the research problem and statement of the problem, objectives of the study and followed by research questions then research hypothesis and lastly scope of the study and limitations of the study.

1.1 Background information

According to the 2012, World Health Organizations (WHO) report, Tanzanian local manufacturing of pharmaceuticals is inadequate to meet the national demand. The recent closure of Tanzania Pharmaceutical Industries Company Ltd in Arusha and collapse of some other Pharmaceutical companies has left Tanzania with only two reliable Pharmaceutical companies (Shelly's and Keko Pharmaceutical). About 85-90% of the country's medicines and medical supplies are imported. Medical Store Department (MSD) is the largest importer of medicines and medical supplies, other importers include private local firms and faith based institutions. Medical Store Department (MSD) is the sole government organization with legal mandate for procurement, storage and distribution of medicines and medical supplies in Tanzania.

However, local competitors may 20 increasingly become active in next six years, for example the Mission for Essential Medical Supplies (MEMS) are already gearing up. The implication of this is for Medical Store Department (MSD) to strategically position itself and offer competitive services. Further Medical Store Department (MSD) should consider opening manufacturing facilities and private sector engagement for possible joint venture. The Government through the Ministry of Health and Social Welfare directed Medical Store Department (MSD) to start delivering medicines and medical supplies directly to health facilities. This initiative aims at strengthening health care service provision at the lower level health facilities.

It started during financial year 2010/11 and by 2011/12; ten (10) regions of Tanzania were beneficiaries of the program namely; Ruvuma, Rukwa, Coast, Kigoma, Shinyanga, Lindi, Dodoma, Tanga and Manyara. The roll out plan to include the remaining 16 regions of Tanzania in the Direct Delivery (DD) will be implemented during the financial year 2013/14. The regions include Zanzibar as a regional customer.

The current developments in Tanzania are quite favorable for a continued positive economic development and market growth of all goods including medicines and medical supplies. The determinants of the economic development and their impact on MSD's business are Population of Tanzania has been growing an average of 3.5% annually from 38.93 million in 2006 to 44.9 million in 2012. The increase in population has a direct impact in the supply of medicine, medical equipment and overall efficiency at the health care system. This not only shows the current confidence of the population in the economy, but also generates a structural economic activity. For the health care system it means, mother and childcare remain important, higher prevalence of infant diseases per 1,000 population (prevention and cure), and family planning issues. MSD needs to take these developments into account when determining acceptable stock levels at each level of the supply chain, determining potential growth in demand (and reserve supply), and in prioritizing procurement within the budgetary constraints. The economic growth of Tanzania has been around +7% annually, and predictions are close to the same rates or even higher. This high economic growth implies not only more income for companies and the government, but also comes with growing pains (financing, structural adjustments). For the health care system it has the advantage that more budgetary funds are becoming available. However the government financing for medicines and medical supplies has decimally grown for the past five years (2007 up to 2013), *(Source: Tanzania Strategic Review of the National Supply Chain, 2013.)*

1.2 Statement of the problem

MSD has been able to strategically improve stock availability through measures such as recruitment of stock verifiers, demand and supply managers, monitoring and

evaluation manager and strengthened use of framework contracts. However, stock availability has continued to be a consistent problem which is further compounded by weak shared information on stock requirements, weak contract management and stock management. The out of stock situation is the result of a mix of different stakeholders cutting across supply chain. The main challenge is the use multidisciplinary approach towards better and commonly shared information. Typical challenges within the national health systems which impact the supply chains include inadequate forecasting, insufficient funds, delays in funding disbursements and long lead times (tendering and manufacturing), Non-availability or insufficient quantities of essential drugs; Unreliable services; Over-invoicing; Delays due to unnecessarily long procedures or long waiting chains; High prices compared to other sources of supplies; and Delivery delays (so that, in some cases, facility staff must pick up items personally). Also there are ongoing issues of questionable drug quality in both the public and private health sectors. Poor quality drugs, including counterfeits, are widely found in Tanzania, especially in the private sector (www.ipm-microbicides.org). Furthermore it is difficult to measure performance indicators such as medicine availability and therefore often difficult to determine constraints and identify possibilities to improve the supply chain (WHO, 2006).

The study aims to identify Physical Distribution and Medical Supplies challenges by the Medical Supplies Department as from 2005 – 2010 in Tanzania and to provide measures to be taken for effective's physical distribution of medical supply in a country.

1.3 Research objective

1.3.1 General Research Objective:

The major objective of the research was to identify Physical Distribution and Medical Supplies challenges by the Medical Supplies Department as from 2005 – 2010 in Tanzania and to provide measures to be taken for effective's physical distribution of medical supplies in our country.

1.3.2 Specific Research Objectives;

- a. To determine the reasons for stock-outs at health centers
- b. To determine inventory management processes and challenges thereof
- c. To provide measures to be taken for effective's physical distribution of medical supplies in our country.

1.4 Specific research Question

- a. What are the reasons for stock-outs in health centers?
- b. What are inventory management processes and challenges thereof?
- d. What are the possible measures to be taken for effective's physical distribution of medical supplies in our country?

1.5 Significance of the study:

In the end, this study reveal the following;

- a. The findings of the study will help the organization to be more efficient and effective in its activities.
- b. The study will provide recommendations that might be helpful to authoritative individuals in the medical stores department.

1.6 Scope of the study

The study conducted in Dar es Salaam region at Medical Store Department head quarters. The choice of Dar es Salaam was based on the fact that, Dar es Salaam has good representation relation of the population under study.

1.7 Limitation

Due to a research being a vital study, a number of setbacks were encountered, in one way another make it move slowly. Include attitudes towards giving proper and true information by the respondent due to their reluctance and disinterest in my study. These affected the smoothness in conducting this study because of lacking cooperation.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter reviews the literature related to medical supplies and its distribution. It starts by definitions of concepts, Background of the study, empirical literature review, and conceptual framework

2.1 Definitions of Concepts

2.1.1 Physical distribution

Is group of activities associated with the supply of finished product from the production line to consumers. The physical distribution considers its distribution channels, such as wholesale and retail, and includes critical decision areas like customer service, inventory management, packaging, order processing and logistics, (*dictionary, Cambridge.com*).

2.1.2 The Medical Stores Department (MSD)

Is an autonomous department of the Ministry of Health and operates on a commercial basis, responsible for its own financial sustainability. The MSD has successfully procured millions of dollars of pharmaceuticals and medical supplies from the international and domestic market at highly favorable prices (when compared to international standard pricing) and distributes to health facilities across the country. MSD focuses on a list of approved medicines and has an estimated capability of providing just 70 percent of public sector supply demands. There is a health sector-wide approach (SWAp) in Tanzania, which is funded by seven donors who work through the public procurement system. Likewise, the confessional missions operate a pharmaceutical supply facility. Well-established social marketing efforts do their own procurement, clearing and local packaging, usually tax-free, (www.ipm-microbicides.org, 2006). Medical Stores Department Act, 1993

2.1.3 The medicine supply

Is a complex system with public and private organizations such as private distributors, governmental warehouses and Non-Governmental Organization (NGOs) with several tiers such as National Level Medical Stores and District Level Medical Stores. Procurement and distribution, which often work as separate functions with a poor, irregular communication and share of information, hinders a coordinated, coherent and efficient national procurement and distribution plan. Furthermore, due to lack of efficiency, shortage of vehicles and poor condition of vehicles, many programs built their own supply chain systems within the private sector. The system becomes even more complex due to special supply chain requirements for each drug such as cold chains and short shelf lives, which makes the whole distribution network even more complex (www.ipm-microbicides.org, 2006).

2.1.4 Distribution.

Two systems of distribution exist in Tanzania. The ‘push’ system uses a standard-content essential drug kit and delivers a certain number to all health facilities (whether or not they are needed). Under the ‘pull’ system, each health facility decides on the number of products required and orders them accordingly. At the moment, all health centre receive the same blue kit once a month and dispensaries receive the same yellow kit. All districts are to be converted to the ‘pull’ system by 2007. MSD distributes commodities to all the MSD zonal stores which, in turn, supply the districts (where the responsibility of the MSD ends). No commodity is issued with an expiry date of less than three months. Beyond the distribution of the basic kit, the second priority is to ensure a steady supply of vaccines. This system works well, as evidenced in the good vaccination coverage in Tanzania, (MSD final report 2007).

2.1.5 Storage

The MSD has national and zonal warehouses and has little storage capacity to accommodate large numbers of stocks. They have, however, recently acquired an additional warehouse that will be used for malaria and other selected drug products, (Health Sector Strategic Plan III, 2015).

2.1.6 Taxes.

Import duties and VAT are levied on all Tanzanian imports unless otherwise exempt. Drugs to combat HIV/AIDS, malaria and TB however, are fully exempt from all duties and taxes. Medical supplies are not usually exempt, but HIV test kits have a special exemption to be obtained through the MOH. If donor-funded then normal donor exemptions may apply, given the request, (Health Sector Strategic Plan III, 2015).

2.1.7 Quality.

There are ongoing issues of questionable drug quality in both the public and private health sectors. Poor quality drugs, including counterfeits, are widely found in Tanzania, especially in the private sector. The Tanzania Food and Drug Administration (TFDA) was established in 2003 by the Tanzania Food Drug and Cosmetics Act and is the regulatory body responsible for the quality and safety of food, drugs (including herbal drugs), cosmetics and medical devices. It is responsible for drug registration and drug inspection including Good Manufacturing Practice (GMP) and licensing of pharmaceutical manufacturers. It also manages the Quality Control Laboratories. (See regulatory section for more on drug registration.). The QC Laboratories were assessed by WHO in 2005 and various gaps were identified that still need to be addressed.

2.1.8 Warehouse.

Warehouse design, space & layout: MSD Central is making use of three warehouse facilities, including one warehouse and cold store at Central, and two warehouse facilities at Ubungu. The warehouse layout is structured according to programs and the layout is not linked to any standard layout system. Stock is currently stored “where there is available space” according to one warehouse officer at the main Ubungu warehouse. Ubungu main warehouse facility is presently using the same bay area (door) for receiving and dispatching goods. This creates bottlenecks as there is limited space available to receive and dispatch goods. There are plans under way to construct a proper dispatching bay and to enlarge the area. Both MSD central and the Ubungu mentioned a lack of space as a major concern. These issues were also noted

at Tanga zonal facility and at the DMO level. It is unclear if a central-level warehouse is required and more analysis is needed. Shipping directly to zonal stores will reduce lead time and reduce required warehouse space. It is important to note that there is a clear opportunity to redesign the layout. Other visible opportunities to improve include ventilation (notably Central) and addressing poor space practices between pallets not stored on racks (mainly Ubongo). Additionally, the correct use of pallet storage racks and the use of specialized equipment (e.g. narrow aisle forklifts) can increase warehouse space and improve efficiency in the warehouse

Figure 2. 1: Ubungo, Central Warehouse - Poor Warehouse Layout and Dispatching



Source; www.msh.org/projects/rpmplus.)

Figure 2. 2: Limited space for receiving



(Source; www.msh.org/projects/rpmplus.)

Figure 2. 3: Space – lack of space between pallets in use



(Source; www.msh.org/projects/rpmplus.)

Figure 2. 4: Central – labeling system not



(Source; www.msh.org/projects/rpmplus.)

Medicine needs to be stored in warehouses under appropriate conditions regarding security, temperature, conditions and storage area. Furthermore, a correct inventory management is necessary to ensure adequate stock levels. Therefore strategies such as regular stock taking, inventory reconciliation, first-expired-first-out practices and traceability of batches are beneficial. Research outlines that more centralized warehouse management models with guidelines and standard operating procedures improved performance.

Inventory Management: MSD is currently in the process of developing a new inventory policy, taking into consideration stock and recommended ordering levels. At zone level (Tanga), operators were unclear about any current zonal warehouse inventory policy. Common problems noted at DMO level included poor stock rotation (e.g. First Expired First Out) and poor storage practices (e.g. different stock keeping units stored in the same box). MSD has implemented a Management Information System (MIS) and it is available at all warehouses and zonal facilities. The system is currently under review and a number of challenges were highlighted during the interviews, including system downtime and missing critical models, e.g. warehouse module.

Warehouse Equipment: Warehouse equipment includes forklifts, pallet jacks, box wrappers and racks. Pallet racks are used in the central and zonal levels and there is a visible shortage of pallet racks. At the Ubongo warehouse, operators also complained about warehouse equipment, notably pallet tracks. Only two out of twelve pallet jacks were “in working condition” according to the warehouse officer. In general, identifying and procuring the right operation equipment have been identified by the General Director as an opportunity that requires further attention.

Figure 2. 5: Pallet jack – in ubongo, 2 out 12 in working condition



(Source; www.msh.org/projects/rpmplus.)

Stock returns and expired stock: There is a clear policy for dealing with expired products that includes communication to the program manager, followed by the Board of Surveyors and a report to the Minister of Finance. The reverse logistics process has been highlighted as a “long and drawn out” process. The Tanga Area Manager mentioned that they are “unwilling to take back expired products as it is a complicated process that takes up warehouse space”. The Ubungu warehouse facility has created a designated area for expired stock as per the company policy. According to the Ubungu Warehouse officer, “some of the expired stocks have been here since 2002”.

Figure 2. 6: Ubongo – Expired products take up space



(Source; www.msh.org/projects/rpmpplus.)

2.3 Empirical Literature Review

Weiss and Gershon (2002) noted that, distribution describes all the logistics involved in delivering a company's products or services to the right place, at the right time, for the lowest cost. In the unending efforts to realize these goals, the channel of distribution selected by a business play a vital role in this process. Well-chosen channel constitute a significant competitive advantage, while poorly conceived or chosen channel can doom even a superior product or service to failure in the market. Effective distribution provides customers with convenience in the form of availability (what, where, when - the right product, at the right place, at the right time), access (customers' awareness of the availability and authorization to purchase), and support (e.g. pre-sales advice, sales promotion and merchandising, post-service repairs).

Some of the transportation and distribution challenges include limited funds for vehicle purchase, maintenance, repairs, fuel and driver salaries (USAID, 2011a). In Ghana 13% of the stock value of the essential health commodities constitute for logistics costs. There are competing interests between low distribution costs and high service quality. If distribution frequency is high, transportation costs are high, but in a more reliable demand planning horizon with less stock-out situations.

Transportation of medicine to HC needs to balance high initial investments, capacity of health workers, reliability and stock-out situations. Therefore there are used different approaches for distribution such as collection, delivery, outsourcing or public-private partnerships. Transportation cost can account for 10-20% of the stock value and thus, distribution systems need to be optimized (Yadav et al., 2011).

Order fulfillment is defined by the allocation and distribution of stock based on the order request/requirements. Order fulfillment could follow the push or pull strategy. The push strategy allocates stock to lower levels with centralized planning and forecasting. In a pull system each HC estimates required quantities and requests stock from higher levels e.g. DLMS. The choice of the system depends on the maturity of the supply chain, stock planning and forecasting capacities and available consumption data. Some countries use a combination, where DLMSs request quantities from NLMS, and DLMS allocates stock to HCs (Yadav et al., 2011).

2.4 Conceptual framework and research model

2.4.1 Conceptual framework

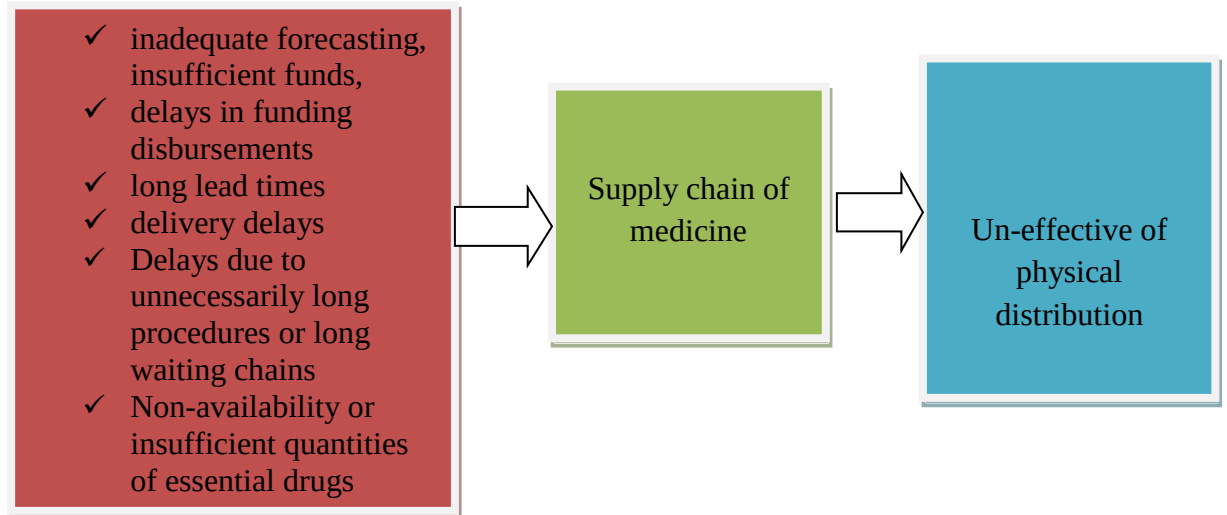
The conceptual framework for this research is based on the assumption that typical challenges on physical distribution within the national health systems include inadequate forecasting, insufficient funds, delays in funding disbursements and long lead times (tendering and manufacturing), non-availability or insufficient quantities of essential drugs; unreliable services; over-invoicing; delays due to unnecessarily long procedures or long waiting chains; high prices compared to other suppliers; and delivery delays which lead to un-effective of physical distribution in medical supply department.

2.4.2 Research Model

The model selected represents the relationship between independent variables (inadequate forecasting, insufficient funds, delays in funding disbursements and long lead times, Non-availability or insufficient quantities of essential drugs; Unreliable services; Over-invoicing; Delays due to unnecessarily long procedures or long waiting chains; High prices compared to other sources of supplies; and Delivery

delays) and intermediary variable, supply chain of medicine finally the dependent variable will be un-effectiveness of physical distribution of medical supply according to independent variable as shown below.

Figure 2.7: Visual research model



(Source: Research model adopted from the theoretical setup, 2016.)

2.4.3 Literature gap.

Various studies have been carried out on the effectiveness of physical distribution especially in medical supply in a country. Most of them addresses on customer satisfaction In a relation to a centralized supply system which may lead to increases on logistics costs and related costs. Little attention has been given by surveys about the effectiveness of physical distribution in organization particularly distribution of medical supply within in a country (Tanzania). It is upon this gap of the study titled effectiveness of physical distribution in an organization, a case study of medical supply department between 2005 up to 2010 Dar-es-Salaam, was carried out.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter describes the research design and methodology employed in undertaking the study. It comprises the research design, area of the study, the target population, sample of the study, sampling techniques, data collection methods and data analysis.

3.1 Research Design

Kothari (2004) defines research design as the “conceptual structure within which the research will be conducted; it constitutes the blue print for the collection, measurement and analysis of data. In this study a case study was deployed as a research design. The researcher prefers this design because it allows application of all possible data collection techniques namely; observation, questionnaires, interviews, and documentary reviews.

3.2 Study Area

The study was undertaken at Medical Stores Department in Dar-es-salaam. It is located in Kinondoni District. Kinondoni district is one of the three districts in Dar es Salaam region, others being Ilala and Temeke. The reasons behind its selection is due to limited time and costs constraints, which limits the researcher to cover a wider area.

3.3 Study Population

Population is the target group to be studied; it is the aggregate of all the units pertaining to a study (Krishnaswami et al, 2007). The population consist nearly 500 MSD stakeholders. To accomplish this task effectively and efficiently the researcher used 50 respondents among 500 MSD stakeholders in Dar es Salaam, because the size is affordable in relation to the study putting into consideration the question of time and fund availability.

3.4 Sample Size

According to Powell (1997), a sample refers to the respondents selected for the representation of the total population in order to produce a miniature cross section. The sample size for this study was drawn from a study population of the MSD stakeholders at Kinondoni municipal in Dar es Salaam region.

Fifty (50) respondents were used as a sample size, because it was a reasonable number, manageable and affordable in analysing the data which were collected, so as to get good results, instead of having more respondents which will be difficult to administer, or having few respondents which will be biased for the study (Babbie, and Mouton, 2001).

3.5 Sampling Technique

Powell (1997) defines sampling techniques as the selection of some part of an aggregate or totality of what the population is made of sampling is one of the best systematic techniques of choosing a group of individuals, in choosing a sample for this study; the researcher used purposive sampling techniques.

3.5.1 Purposive Sampling Technique

Babbie (1992) define purposive sampling technique as the one which enables a researcher to select a sample based on his /her knowledge of population, research elements and objectives. Purposive sampling is also based on researcher's judgment and purpose of the study. This technique was used to all targeted respondents of this study. The technique was selected purposely to all respondents since they are likely to be available and they had an experience and knowledge that could help to provide detailed information regarding the study.

3.6 Data collection methods

3.6.1 Primary data collection method

The researcher in this study used in combination of data collection methods in order to obtain actual and complete information. The primary data collection method comprised of interview and Questionnaires.

3.7 Data collection instruments

Base on the nature of the problem, one method of data collection wasl not be effective in obtaining reliable and valid information. There is no single correct or perfect research method, each research method has got its weaknesses. Thus, more than one methods of data collection were used in order to complement the weaknesses of each other. In this study therefore, both primary and secondary data, as well as quantitative and qualitative methods of data collection will be used. These include: Questionnaires, Interviews, and Documentary reviews

3.7.1 Questionnaires

These are set of questions intended to capture the feelings, attitudes and Values of respondents in a systematic way Kothari, (2004). Questionnaire is one of most used in data collection methods; the researcher used categories of the respondents. The method is suitable to the respondents because majorities are literate, that is they can read and write. However, due to their daily activities or some limitation, it is possible to contact them under other data collection methods such as interview. Additionally, the method is free from bias of the researcher as it gives the respondents enough time to reply the questions on his or her own understanding.

3.7.2 Interviews

This study will involve semi-structured interviews with both open and closed ended questions made to obtain information from sampled respondents in the area of study, (Kothari 2004). Interviews entail collection of information was through oral or verbal communication in a face to face between the researcher and respondents (Cohen L at el, 2000). This technique will be use to collect data from the senior management staff.

3.7.3 Documentary Reviews

This technique was employ to gather information from various documents available at Medical Supply department (MSD). Both Primary and secondary sources of information were reviewed. Primarily documents refer to all documents that keep records of actual events as they happen. Secondary documents on the other hands

refer to information by a second part, which might not have been distorted (Kothari, 2004). The data from literatures were use by the researcher to backup or validate the data was collected for developing a clear and precise background of the problem, for justification of the need to conduct this study, as well as to backup the discussion and interpretation of the research findings. The researcher uses this data collection method to obtain information through reading different articles, journals, newspapers, books, dissertation and Internet based resources to validate or disprove the information obtain through interviews and questionnaires as use in data collection by the researcher.

3.8 Reliability and Validity of Data

3.8.1 Reliability

This is the extent to which an experiment, a test or any measuring procedure gives the same results on repeated trials (Kothari, 2004). The researcher used the test and retest the procedure in which the Questionnaires, Documentary reviews and observed were used to suit the intended objective of study.

3.8.2 Validity

Shows the degree of which an instrument measured what it is supposed to be measured (Kothari 2004). The researcher based on the facts obtain in literature review in which data analysis relied on. To achieve this, researcher make sure the research data are valid and reliable. This can be achieved by constructing questionnaires are appropriate with the research problem.

3.9 Data Analysis and Presentation

According to Kombo and Tromp (2003) data analysis refers to examining what has been collected in survey or experiment and making deductions and inferences. It involves uncovering underlying structures, extracting important variables, detecting anomalies and testing any underlying assumptions. In this study, since it is qualitative descriptive approach, the researcher analyzed collected data which are in qualitative nature by use content analysis technique which is the most desirable in this study, the data were presented by using statistical techniques via uses of SPSS

and Micro soft Excel 2007 and later on explanation was be done in words to give clear interpretation of findings.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION OF THE RESULTS

4.0 Introduction

This chapter provided the presentation, analysis and interpretation of all the data collected from the area of study during the research period. Data was collected through various research instruments which included questionnaires, interview and observation.

The quantitative data was analyzed using descriptive statistics and was presented in the form of tables. The qualitative data was analyzed through the use of content analysis. Results of the data analysis provided information that formed the basis for discussion, conclusion, and interpretation of the findings and recommendations of the study. The Use of Statistical Package for the Social Science (SPSS) was extensively used by the researcher in statistical analysis, data management (case selection, file reshaping, creating derived data) and data documentation. Descriptive statistics was attained through cross tabulation, frequencies, and descriptive ratio statistics. Content analysis was used to analyze the qualitative data. This allowed for the classification, sorting and enabled the researcher to arrange information and examine the relationships in the data. The analyzed data was later exported to Microsoft Word where the researcher was able to come up with the conclusions of the analysis.

4.1 Respondents profiles

The researcher distributed a total of forty (50) questionnaires to be filled by the respondents in all of the study units thought. However, only thirty two (32) questionnaires were duly filled and collected. The response rate was therefore eighty percent (80%). Following are the respondent's profiles in terms of their, gender status, age, education, position, employment status, and work experience. The Findings were represented by using tables, graph and pie chart. Under each illustration researcher gave a small summary of the above information.

4.1.1 Gender status of the respondents

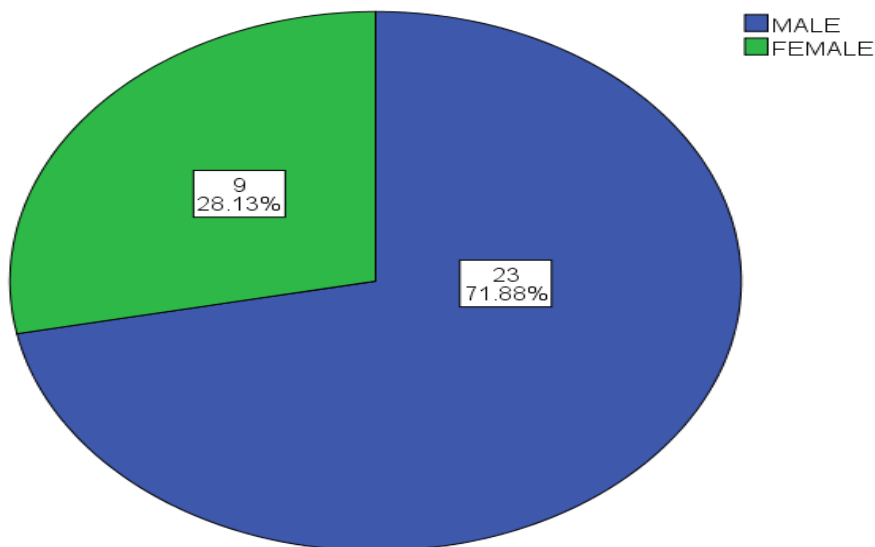
Data were collected from both genders to merge the knowledge of understanding between male and female respondents and so to comply with gender mainstreaming policy.

Table 4. 1: Gender Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	23	71.9	71.9	71.9
	Female	9	28.1	28.1	100.0
	Total	32	100.0	100.0	

(Source: Research Findings, 2016)

Figure 4.1: Gender Status



(Source: Research Findings, 2016.)

Results on Gender Status, from the table and pie-chart, the research results revealed that,, out of 32 respondents to this research, 23 respondents equal 71.9% were males and 9 respondents equal to 28.1% were females.

4.1.2 Age of respondents

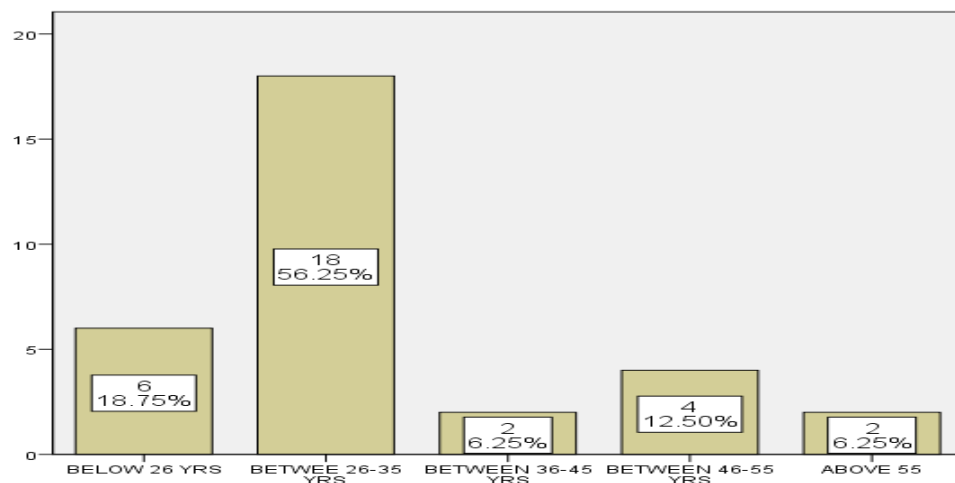
The researcher used all age groups to help him in merging the knowledge of both seniors and juniors respondents in MSD.

Table 4.2: Age of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 26 Yrs	6	18.8	18.8	18.8
	Between 26-35 Yrs	18	56.3	56.3	75.0
	Between 36-45 Yrs	2	6.3	6.3	81.3
	Between 46-55 Yrs	4	12.5	12.5	93.8
	Above 55	2	6.3	6.3	100.0
	Total	32	100.0	100.0	

(Source: Research Findings, 2016.)

Figure 4.2: Age of Respondents



(Source: Research Findings, 2016.)

Based on the information on the Age of Respondents from MSD, table, and graph displayed the following results about the age groups of the respondents from were found to be as follows; 6 respondents equal to 18.8% were aged below 26 years, 18

respondents equal to 56.2% were aged between 26-35 years, 2 respondents equal to 6.2% were aged between 36-45 years, 4 respondents equal to 12.5% were aged between 46-55 years, and 2 respondents equal to 6.2% were aged above 55 years. The results shows that a cumulative 26 respondents equal to 81.2% where all below the age of 45 years which means that the validity and reliability of the data collected were large enough. This is due to the fact that the research was dominated by junior employees who are capable of giving the relevant information as compared to the senior employees

4.1.3 Education of respondents

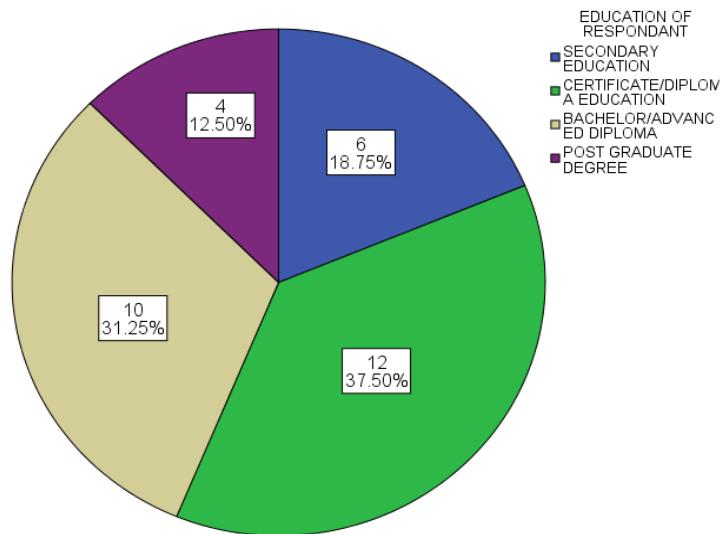
The respondents were sorely engaged basing on their professional and level of education, only respondents with MSD related professional were selected while putting into consideration on all levels of education as from primary to post graduate education.

Table 4.2: Education of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Secondary Education	6	18.8	18.8	18.8
	Certificate/Diploma Education	12	37.5	37.5	56.3
	Bachelor/Advanced Diploma	10	31.3	31.3	87.5
	Post Graduate Degree	4	12.5	12.5	100.0
	Total	32	100.0	100.0	

(Source: Research Findings, 2016.)

Figure 1:3 Education of Respondents



(Source: Research Findings, 2016.)

Result on Education of Respondents from MSD, table and pie-chart above, the research reveals the following results; out of 32 respondents, nil of the respondents were found having primary education, 6 respondents equal to 18.8% were respondents with secondary education, 12 respondents equal to 37.5% were respondents with certificate/diploma education, 10 respondents equal to 31.2% were respondents with bachelor degree/advanced diploma, 4 respondents equal to 12.5% were respondents with post graduate education. The absence of respondents with a primary education and a cumulative of 26 respondents equal to 81.2% of the total respondents indicated that the information gathered were valid and reliable due to being provided by the respondents with relevant education and professional.

4.1.4 Position of employment

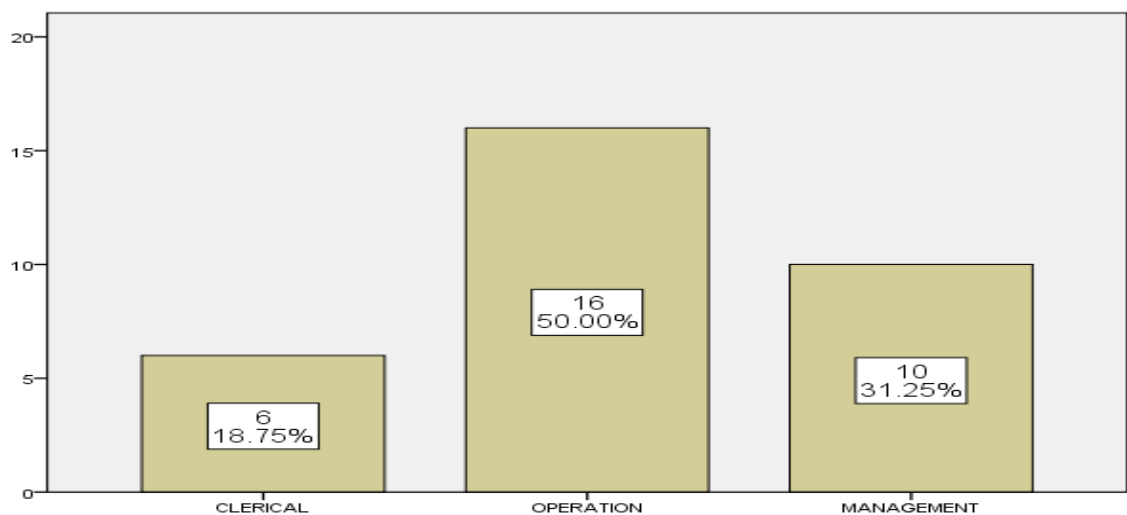
The researcher used all levels of position in employment ranging from clerical level to managerial level at MSD.

Table 4.3: Position on Employment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Clerical	6	18.8	18.8	18.8
	Operation	16	50.0	50.0	68.8
	Management	10	31.3	31.3	100.0
	Total	32	100.0	100.0	

(Source: Research Findings, 2016.)

Figure 4.4: Position on Employment



(Source: Research Findings, 2016.)

Responses on Position of Employment from respondents, table, and graph, the results showed that 6 respondents equal to 18.8% were employees working under clerical level, 16 respondents equal to 50% were employees working under operational level while 10 respondents equal to 31.3% were employees working under managerial level. These results indicates that a cumulative of 10 respondents equal to 31.2% are the employees working under managerial level, thus a small number of respondents working under managerial level reveals that the information provided is valid as it was desirable.

4.1.5 Status of employment

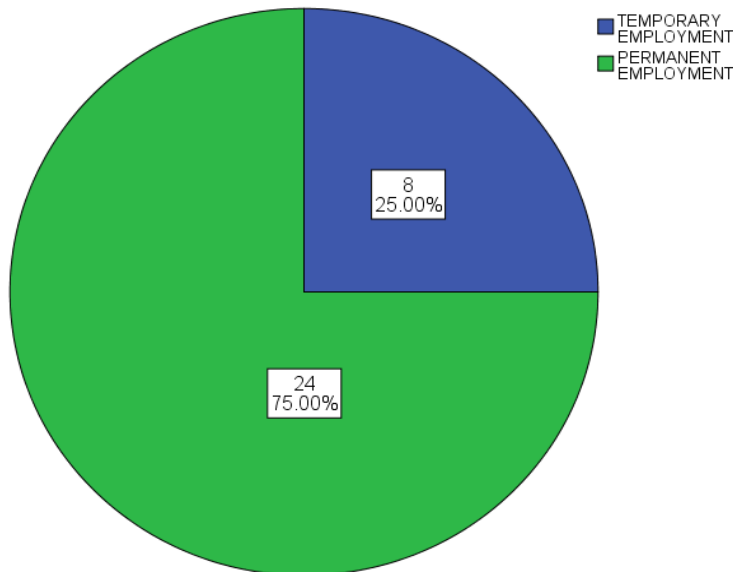
The researcher used both temporary and permanent employed respondents to judging on physical distribution and medical supply.

Table 4.4: Status of Employment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Temporary Employment	8	25.0	25.0	25.0
	Permanent Employment	24	75.0	75.0	100.0
	Total	32	100.0	100.0	

(Source: Research Findings, 2016.)

Figure 4.5: Status of Employment



(Source: Research Findings, 2016.)

Responses on Status of Employment from respondents at MSD, table, graph and pie-chart above shows that, 8 respondents equal to 25% were temporary employees while 24 respondents equal to 75% were permanent employees. This indicates that the

permanent employees dominated the respondent which means that un-effective physical distribution and medical supply was not attributed by employment status perhaps it could be any other cause.

4.1.6 Working experience

The researcher wanted to know the duration of respondents in MSD so as to judge on validity of data provided thereof. He therefore used both level of working experience and the results are as shown below.

Table 4.5: Working Experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less Than 5 Yrs	12	37.5	37.5	37.5
	Between 5-10 Yrs	14	43.8	43.8	81.3
	Over 10 Yrs	6	18.8	18.8	100.0
	Total	32	100.0	100.0	

(Source: Research Findings, 2016.)

Responses on Working Experience from respondents, table, graph and pie-chart, the results show that 12 respondents equal to 37.50% were employees with a working experience of less than 5 years, 14 respondents equal to 43.75% were employees with a working experience of between 5-10 years while 6 respondents equal to 18.75% were employees with a working experience of more than 10 years. These results are promising that the information obtained is valid since most of the respondents have enough experience in physical distribution and medical supply.

4.1.7 Discussion on the findings based on research questions and specific objectives

As far as this study is concern, the stated research questions and specific objectives focused on physical distribution and Medical Supplies by the Medical Supplies Department as from 2005 up to 2010.

4.2.7 Responses on Physical Distribution Challenges

The respondents were asked about physical distribution challenges within the national health systems. The finding showed that 6(18.8%) of respondents had strongly agreed, 21(65.6%) of respondents had agreed, 3(9.4%) of respondents were moderate agreed and 2(6.2%) were disagree on the concept of physical distribution challenges.

Table 4.6: Responses on Physical Distribution Challenges

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strong Agree	6	18.8	18.8	18.8
	Agree	21	65.6	65.6	84.4
	Moderate Agree	3	9.4	9.4	93.8
	Disagree	2	6.3	6.3	100.0
	Total	32	100.0	100.0	

(Source: Research Findings, 2016.)

From above table it implies that, physical distribution challenges are widely found in country. During the interview respondents cited some physical distribution challenges. On interview with MSD one respondent said that, *Other physical distribution challenges of medical supply departments in country include inadequate forecasting, insufficient funds, delays in funding disbursements and long lead times (tendering and manufacturing), Non-availability or insufficient quantities of essential drugs; Unreliable services; Over-invoicing; Delays due to unnecessarily long procedures or long waiting chains; High prices compared to other sources of supplies; and Delivery delays which lead to un-effective of physical distribution in medical supply department are widely found in Tanzania..*

4.2.8 Responses on transportation challenges

The respondents were asked about Transport challenges within the national health systems. The finding showed that 8(25%) of respondents had strongly agreed,

10(31.3%) of respondents had agreed, 7(21.8%) of respondents were moderate agreed, 5(15.6%) were disagree and 2(6.3%) were strongly disagree.

Table 4.7: Responses on Transport Challenges

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	8	25	25	25
Agree	10	31.3	31.3	56.3
Moderate Agree	7	21.8	21.8	78.1
Disagree	5	15.6	15.6	93.7
Strongly Disagree	2	6.3	6.3	100.0
Total	32	100.0	100.0	

(Source: Research Findings, 2016.)

From above table it implies that, Transportation of medicine to HC needs to balance high initial investments, capacity of health workers, reliability and stock-out situations and some of the transportation and distribution challenges include limited funds for vehicle purchase, maintenance, repairs, fuel and driver salaries are widely found in Tanzania, especially in the private sector

The implications of the Direct Delivery rollout on MSD operations will be: Need for increased trucks for transportation and more efficient and effective logistical systems and zonal operations. However the focus should be investing more on fleet for distribution from Zonal stores to Health facilities and reduction of fleet from DSM to Zonal Stores through outsourcing process, financial resources requirement are estimated at Tzs 3.1billion for acquisition of new fleet and replacement of the worn-out fleet at Zonal Stores. The costs exclude the running costs which are estimated at Tzs.1.8 billion per annum. The effective and efficient distribution system as well as timely packaging of medicines and medical supplies Increased requirements for human resource capacity, in particular, there will be a need to recruit additional drivers and truck assistants. After the DD is fully rolled out to all health facilities,

MSD should consider outsourcing some of its supporting services such as transport to Zonal Stores and from Zonal Stores to areas where there is efficient private sector engagement. Turning the Zonal Stores into Strategic Business Units in order to increase efficiency and further decentralize the activities. (*Health Sector report, 2008*).

4.2.9 Responses on challenges of space for receiving and dispatching drugs

The respondents were asked about challenges of space for receiving and dispatching drugs within the national health systems. The finding showed that 6(18.8%) of respondent shad strongly agreed, 21(65.6%) of respondents had agreed, 4(12.5%) of respondents were moderate agreed and 1(3.1%) were disagree.

Table 4. 8: Responses on challenges of space for receiving and dispatching drugs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strong Agree	6	18.8	18.8	18.8
	Agree	21	65.6	65.6	84.4
	Moderate Agree	4	12.5	12.5	96.9
	Disagree	1	3.1	3.1	100.0
	Total	3.2	100.0	100.0	

(Source: Research Findings, 2016.)

From above table it implies that Poor quality drugs, including counterfeit limited space for receiving and dispatching, poor space practices between pallets not stored on racks (mainly Ubungu), poor warehouse layout are widely found in country, especially in the private sector. The MSD has national and zonal warehouses and has little storage capacity to accommodate large numbers of stocks.

4.3 Responses on Procurement and Distribution Challenges

The respondents were asked about Transport challenges within the national health systems. The finding showed that 8(25%) of respondents had strongly agreed,

10(31.4%) of respondents had agreed, 7(21.8%) of respondents were moderate agreed, 7(21.8%) were disagree.

Table 4.9: Responses on Procurement and Distribution Challenges

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	8	25	25	25
Agree	10	31.4	31.4	56.4
Moderate Agree	7	21.8	21.8	78.2
Disagree	7	21.8	21.8	100.0
Total	32	100.0	100.0	

(Source: research findings, 2016.)

From above table it implies that Procurement and distribution, which often work as separate functions with a poor, irregular communication and share of information, hinders a coordinated, coherent and efficient national procurement and distribution plan.

4.3.1 Responses on msd has successfully procured high capacity of pharmaceuticals and medical supplies

The respondents were asked about MSD if has successfully on procured high capacity of pharmaceuticals and medical supplies. The finding showed that 19(59.4%) of respondents had strongly disagreed, 12(37.5%) of respondents had disagreed, 1(3.1%) of respondents were moderate agreed.

Table 4.10: Responses on MSD has successfully procured high capacity of pharmaceuticals and medical supplies

		Frequency	Percent	Valid Percent	Cumulative Percent
	Moderate Agree	1	3.1	3.1	3.1
	Disagree	12	37.5	37.5	40.6
	Strongly Disagree	19	59.4	59.4	100
	Total	3.2	100.0	100.0	

(Source: Research Findings, 2016.)

From above table it implies that The MSD not successfully on procured high capacity of pharmaceuticals and medical supplies from the international and domestic market at highly unfavorable prices

4.4 Inventory management processes and challenges

Although private facilities and vertical programs that focus on single diseases, such as TB and HIV/AIDS can often purchase supplies from other sources, shortages at MSD cause nationwide stock outs in government primary health facilities and in the public medical supply chain. The average national fill rate for orders from primary health facilities is only 60-65%; this means that 35-40% of orders are not filled, leading to stock outs. Stock outs often involve organizations and actors outside of MSD. Reasons for the stock outs are numerous, including: Inadequate budget allocations to health facilities, Delays in distribution of allocated funds, Delay in delivery to facilities, Inaccurate forecasting at the facility and national level, Theft of medications at all levels, Stock-outs at the national warehouse run by MSD and Malfunctioning back order system for unfilled items. Twenty to thirty percent stock out rates at government facilities mean that patients either go without needed medical supplies, or must purchase them at a much higher cost from private pharmacies. This creates barriers to delivery of health services. For those supply chain issues within MSD's control (e.g. not problems with government budgeting or allocation of funds),

lack of management capacity is repeatedly cited as a root cause. Although several changes have been made to address these problems, stock outs at health facilities and at MSD continue to pose a serious obstacle to improving health services in Tanzania. (*Republic of Tanzania Drug Tracking Study, Final Report, 2007.*)

Stocktaking involves making an **inventory**, or list, of stock, and noting its location and value. It's often an annual exercise - a kind of audit to work out the value of the stock as part of the accounting process. **Codes**, including barcodes, can make the whole process much easier but it can still be quite time-consuming. Checking stock more frequently - a rolling stock take avoids a massive annual exercise, but demands constant attention throughout the year. Radio Frequency Identification (RFID) tagging using hand-held readers can offer a simple and efficient way to maintain a continuous check on inventory. Any stock control system must enable you to: track stock levels, make orders and issue stock. The simplest manual system is the **stock book**, which suits small businesses with few stock items. It enables you to keep a log of stock received and stock issued. It can be used alongside a simple **re-order system**. For example, the two-bin system works by having two containers of stock items. When one is empty, it's time to start using the second bin and order more stock to fill up the empty one. Stock cards are used for more complex systems. Each type of stock has an associated card, with information such as: description, value, and location, re-order levels, quantities and lead times (if this method is used), supplier details and information about past stock history, (*Tanzania Controller and Auditor General Report 2012.*)

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.0 Introduction

This chapter consists of the conclusion and recommendations based on the research findings. The chapter starts by conclusion then recommend concerning physical distribution and medical supply.

5.1 Conclusion

Population of Tanzania has been growing an average of 3.5% annually from 38.93 million in 2006 to 44.9 million in 2012. The increase in population has a direct impact in the supply of medicine, medical equipment and overall efficiency at the health care system, lead to the increases challenges on physical distribution and medical supply such as inadequate forecasting, insufficient funds, delays in funding disbursements and long lead times, Non-availability or insufficient quantities of essential drugs; Unreliable services; Over-invoicing; Delays due to unnecessarily long procedures or long waiting chains; High prices compared to other sources of supplies; and Delivery delays o medical supply.

5.2 Recommendations

In order to overcome the problems, the following challenges should be addressed: Implement national medicine and medical supplies quantification program. Maintain working relationships with PPRA and other regulatory authorities for streamlining procurement of medicines and medical supplies. Strengthen MSD-Suppliers relationship management, Improve internal and external communication and share reports on new or changing developments in health sector.

Fleet Requirements & Management: MSD needs to reassess their optimal fleet requirements (e.g. motorbikes) especially at zone and district level, especially taking into consideration direct delivery to DSPs and making use of third party logistics. The private sector could advise MSD on fleet requirements and management systems

(e.g. asset management). Build/Upgrade Dispensaries (Funding): At the district level there is a need to expand the footprint of dispensaries and to upgrade facilities in particular, has an ongoing project funding hospital development projects.

Information Technology (Project): MSD lacks supply chain (or pipeline) visibility. The current MIS is available only up to zone level. Furthermore, The MIS has major limitations and there are numerous complaints about the system. The current “SMS for Life” system being tested holds potential and will increase visibility and improve ordering at zone and DSP level.

Inventory Workshop: There is a need for an inventory management course (course material available), especially at district level. However, it is important to note that MSD lacks the required skills to conduct a medical logistics workshop.

Warehouse layout design & space: MSD requires additional warehouse space at all levels of the supply chain, especially at district level. The warehouse layout needs to be redesigned and assistance from the private sector should be considered. However, due to the complexity of MSD’s inventory management, it is unclear how MSD can assist in this area. It is important to note that a further assessment is required.

Warehouse equipment: MSD needs assistance in identifying and procuring the right operation equipment. However, it is important to note that MSD might lack the required skills in medical logistics.

Routing project and workshop: MSD is currently in the process of rolling out the test project for direct distribution of medical supply. However, the test project has some major shortcomings. The project team requires detailed route design, including maps and delivery service point (DSP) information. MSD can make a major contribution in assisting, developing and implementing a clear supply chain strategy servicing DSPs, particularly the “last mile of logistics”.

Scheduling project and workshop: MSD lacks core skills in route scheduling, especially at zone and district level. Scheduling is the process of deciding how to commit the transport fleet between a variety of possible delivery points, taking into consideration loads and lead times. The private sector could assist through scheduling workshops or assisting with project implementation.

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APPENDICES

Appendix I: Questionnaire form to respondents

Dear respondents,

I, **Somba Mrisho Somba**, a candidate of the Postgraduate Diploma in Logistics and Transport Management from National Institute of Transport. I am conducting a study on Effectiveness of physical distribution in organization “a case study of medical supply department between 2005 up to 2010 Dar-es-salaam”. I would be very grateful if you could spend some time to fill in this questionnaire and I will be much thankful if you can spare your time to respond to these questions. You are assured that any information provided would be used for academic purposes only and used held strictly confidential.

Thank you for your valuable cooperation for taking part on this study. May God bless you all.

Yours faithfully

.....

Somba Mrisho Somba

PART A: GENERAL INFORMATION OF THE RESPONDENTS

Under this part, you are required to select only one answer among the given alternatives and circle the letter of the answer you have selected.

1. What is your gender status?
 - A. Male
 - B. Female

2. How old are you?
 - A. Below 26 years
 - B. Between 26 - 35 years
 - C. Between 36 – 45 years
 - D. Between 46 – 55 years
 - E. Above 55 years

3. What is the level of your education?
 - A. Primary Education
 - B. Secondary Education
 - C. Certificate/Diploma Education
 - D. Bachelor Degree/Advanced Diploma
 - E. Post Graduate Degrees

4. What position do you hold in your organization?
 - A. Clerical
 - B. Operational
 - C. Managerial

5. What is the status of your employment in this organization?
 - A. Temporary Employee
 - B. Permanent Employee

6. How long have you been working in port related organizations?

A. Less than 5 years

B. Between 5 – 10 years

C. Over 10 years

For each of the following statement, choose and put a tick sign (✓) which is appropriate to you to indicate the extent of your agreement or disagreement.

Scale	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Order	1	2	3	4	5

S/N	The following are the research questions related to the research variables	Scale				
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
7	The MSD has successfully procured high capacity of pharmaceuticals and medical supplies from the international and domestic market at highly unfavorable prices					
8	Procurement and distribution challenges, still problem within the country					
9	Medical supplies are not usually exempt, but HIV test kits have a special exemption to be obtained through the MOH.					
10	In a country Poor quality drugs, including counterfeit limited space for receiving and dispatching, still problem within the country.					
11	Transportation challenges of medicine					

	supply to HC still problem within the country					
12	physical distribution challenges within the national health systems lead to un-effective of physical distribution in medical supply department are widely found in Tanzania					

13. What are the reasons for stock-outs in health centers?

.....

14. What are inventory management processes and challenges thereof?

15 What are the possible measures to be taken for effective's physical distribution of medical supplies in our country?

Appendix II: Research Budget

This research was subject to be financed by myself. The overall budget to be used in this research is shown in the table below;

Item Stationeries	Cost in Tanzania Shillings (Tshs)
Notebook	12, 000.00
Files	30,000.00
Pen	35,000.00
Secretarial Services Typing	150,000.00
Photocopying	100,000.00
Materials for review	75,000.00
Final draft photocopying	70,000.00
Binding 6 copies	37,000.00
Printing	150,000.00
Transport to and from the town	150,000.00
Meals	160,000.00
Emergency	100,000.00
Grand total	1033,000.00

Source: Author's Manipulation (2016)

Appendix III: Work plan

The research activities was five months of the year 2016 as indicated below: The study expected to be carried out as outlined in the schedule below:

S/NO	ACTIVITIES	June		July		August		September		October		November	
1	Research Proposal												
2	Literature Review												
3	Data Collection												
4	Data Analysis												
5	Report writing												