

OAG



Office of the Auditor General

VALUE FOR MONEY AUDIT REPORT ON PROCUREMENT AND STORAGE OF DRUGS BY NATIONAL MEDICAL STORES (NMS)



MARCH 2010

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LIST OF ABBREVIATIONS

AFROSAI-E	African Organization of Supreme Audit Institutions (English speaking)
AG	Auditor General
AIDSCO	Uganda Aids Commission
AMC	Average Monthly Consumption
CDC	Centre for Disease Control
CIA	Chief Internal Auditor
CMS	Central Medical Stores
COSMA	Cost and Stock management Accountant
CS	Corporation Secretary
EMHS	Essential Medicines and Health supplies
EMLU	Essential Medicines list for Uganda
GF	Global Fund
GM	General Manager
GOU	Government of Uganda
GRN	Goods Received Note
H	Hospitals
HC	Health Centre
HFA	Head of Finance and Accounts
HMIS	Health Management Information System
HOP	Head of Procurement
HOSAM	Head of sales and Marketing
HOSAO	Head of stores and operations
INTOSAI	International Organization of Supreme Audit Institutions
JMS	Joint Medical stores
LEP& TB	Leprosy and Tuberculosis
MOFPED	Ministry of Finance, Planning and Economic Development
MoH	Ministry of Health
MOU	Memorandum of Understanding
NDA	National Drug Authority
NDP	National Drug Policy
NMS	National Medical Stores
OAG	Office of the Auditor General
PDU	Procurement and Disposal Unit
PHC	Primary Health Care
PO	Procurement Officer
PPDA	Public Procurement and Disposal of Public Assets Authority
QAO	Quality Assurance Officer
SMO	Stores management Officer
STI	sexually transmitted diseases
UNFPA	United Nations Fund for Population activities
USAID	United States Aid
WHO	World Health Organization

EXECUTIVE SUMMARY

There has been a general countrywide concern about people dying of treatable diseases such as malaria arising from patients' failure to access drugs in public health facilities while drugs worth billions of shillings remain expired in NMS facilities, stores of Referral Hospitals, District health Offices and health units.

An audit was conducted on National Medical Stores (NMS) which is mandated by the National Medical Stores Act (chapter 207) Laws of Uganda to ensure continuous distribution of pharmaceutical products in a financially viable and sustainable manner to meet the needs of public health services in the country.

The overall objective of the audit was to assess the operations of National Medical Stores in the areas of procurement and storage with a view of recommending improvements where there are problems.

FINDINGS

The main findings of the study are:

- NMS stocks drugs without regard to buffer stock levels; as such, certain drugs are in excess of the one year's requirement while others are under-stocked. There were huge stocks of expired drugs within the stores of NMS.
- Despite the requirement to destroy expired drugs after every six months after write off, there are expired drugs at both NMS premises and health centres countrywide which remain undestroyed for an average period of six (6) years.
- Although NMS is mandated to supply drugs and medical supplies to all public health services, in a number of cases, NMS does not supply drugs and medical supplies to meet public health units' needs as per their orders.

- NMS does not maintain proper procurement plans in accordance with the stock replenishment policy and uses unreliable AMC which they do not even comply with.
- NMS carries out needs assessments but uses data based on actual AMC sales for the previous six months which excludes customer orders that are not honored resulting in improper projections of drugs to procure.
- NMS receives, stores and distributes drugs procured by third parties but the MOUs signed by both parties lack clear terms of coordination related to joint procurement planning, leading to duplicate procurement of drugs.
- NMS does not have a clearly spelt out policy on the standard time it should take to process a customer order from receipt to delivery at customers' District or personal collection at NMS premises. This creates no obligation for prompt processing of customer orders by NMS.

RECOMMENDATIONS

The following are the recommendations from the audit:

- NMS should use appropriate data to procure the right type and quantities of drugs to meet customer requirements.
- The Management of NMS should put in place appropriate systems and develop staff capacity for collection, processing and use of appropriate data for decision - making in conducting the needs assessments.
- NMS should consider opening regional centres from which customers could personally collect their individual orders. NMS should concentrate on replenishing the regional stores. This will enable NMS to be customer-focused at the regional level, while at the national level the focus will be on the replenishment of the regional centres.

- NMS should enhance its capacity to generate annual estimates of national drug needs to guide them in procuring sufficient quantities to hold in stock and for use by other stakeholders in accordance with the NMS Act.
- NMS should revise and enforce the buffer stock policy to match the response time from suppliers so as to avoid stocks running out. This would minimize the capital locked in idle stock.
- NMS and MOH collectively should advocate for NMS to be mandated and allocated funds directly to deliver all drugs to the various health centres according to EMLU, 2007 based on the disease information available with MOH. Health units could then only order drugs not automatically delivered by NMS due to exceptional disease circumstances unique to the health centre.
- NMS management should champion the effort to cause the parties to amend their MOUs to incorporate joint procurement planning and shared stock position reports to encourage stocking drugs in adequate quantities to avoid duplicate deliveries, expiries, stock deficiencies and enhance the coordination of the procurement of drugs.
- NMS should use their representation in the Technical Review meeting to advocate for MOH to develop planning guidelines on drug usage to minimize expiries, and on the proper storage and ultimate disposal of the already expired medical products in health centres countrywide.
- NMS could take up the responsibility of retrieval and subsequent destruction of expired drugs delivered by them to health centres as a matter of corporate social responsibility in line with their core values. They could utilize their available transport system (return trip on delivery) and their proximity advantage to Nakasongola Incineration point.
- NMS should use their representation on the NDA board to advocate for NDA to stipulate alternative means of drug destruction which is affordable for Health Units. It would remedy the logistical difficulty in accessing the only facility in the country located in Nakasongola.

- NMS should consider introducing effective and efficient drug information inquiry desks to enable health centres to obtain information on drugs' availability.

CHAPTER 1

INTRODUCTION

1.1 **MOTIVATION**

There has been a general countrywide concern about people dying of treatable diseases such as malaria arising from patients' failure to access drugs in public health facilities, and yet drugs worth billions of shillings were reported having expired in NMS facilities, stores of Referral Hospitals, District Health Offices and health units. Drugs worth Ushs. 6.7 billion expired between July 2005 and June 2008 in the NMS storage facility alone¹. At the same time NMS could not supply all the drugs ordered by health units.

A monthly storage cost of shs 36 million was wasted on these expired drugs² and their subsequent destruction cost of about shs 700 million³ could have been channeled to other priority activities badly needed by the citizens, such as the recruitment of additional medical personnel in health facilities like health centers II and III.

All the above scenario may compromise the NMS' vision of being "the leading national supplier of medicine and other medical supplies to meet the needs of the Ugandan population".

The Auditor General, therefore, carried out an independent assessment of NMS' core operations of Procurement and Storage of drugs with a view of recommending improvements where problems exist.

¹ NMS stores write off records of April 2008 and February 2007

² *The New Vision* of Thursday September 11, 2008

³ NMS financial record

1.2 **DESCRIPTION OF THE AUDIT OBJECT**

1.2.1 **Legal Framework**

National Medical Stores (NMS) derives its mandate from the National Medical Stores Act chapter 207 of the Laws of Uganda.

NMS is an autonomous Government Corporation established by the National Medical Stores Act of 1993, which came into effect on 3rd December, 1993. MOH through the 1993 NMS Act delegated the drug supply, storage and distribution function to NMS, hence the formation of an autonomous institution, NMS, to replace the Central Medical stores (CMS), which was formally a department of MOH.

NMS is responsible for ensuring the continuous distribution of pharmaceutical products in a financially viable and sustainable manner. In addition, NMS distributes various drugs which currently include Uganda Essential Drug Kits, Sexually Transmitted Infections (STI) drugs and family planning products. MOH is responsible for the allocation of the above categories of drugs while NMS stores and distributes to the various districts and health facilities.

1.2.2 **Vision of NMS**

“To be the leading national supplier of medicine and other medical supplies to meet the needs of the Ugandan population”

1.2.3 **Mission of NMS**

“To equitably provide affordable, quality medicines and other medical supplies to health facilities in Uganda”

1.2.4 **Core Values of the Corporation**

The core values of the corporation are: Integrity, Transparency, Accountability, Operational excellence, corporate social responsibility, strong leadership, team work and customer focus.

1.2.5 **National Medical Stores Objectives**

The strategic objective of NMS is to procure, store and distribute medicines and medical supplies for use in Ugandan medical facilities.

The principal objectives of the corporation as derived by the Act are as follows:-

- i. To procure, economically and efficiently, medicines and other medical supplies of good quality primarily for the public health services.
- ii. To secure, safe and efficient storage, administer, distribute and supply the goods in question in accordance with the National Drug Policy (NDP) and National Drug Authority (NDA)
- iii. To establish and maintain systems to ensure the quality of goods supplied.
- iv. To estimate the current and future needs as a basis for procurement, planning and budgeting by the corporation itself and the Ministries concerned.
- v. To perform as appropriate, additional tasks entrusted to the corporation by regulation, or as may be accepted by the board as complementary or necessary for the performance of its primary functions.

1.2.6 **Funding**

NMS gets operational funds from the sale of medicines and medical supplies and handling fees. The table below shows the actual income as extracted from the Audited Accounts for the years 2005/06-2007/08

Table 1 NMS Source of funds

YEARS	2005/06	2006/07	2007/08	TOTAL
Sales income	16,277,628,000	15,876,170,000	17,117,050,000	49,270,848,000
Others	3,826,200,000	6,561,448,000	7,558,412,000	17,946,060,000
Shs	20,103,828,000	22,437,618,000	24,675,462,000	67,216,908,000

Source: Audited Accounts for 2005/6, 2006/7 and 2007/8

1.2.7 **Organizational Structure**

NMS is a Government Corporation supervised by the Minister of Health. NMS has a Board of Directors comprising a non executive chairperson, 15 non executive members and the General Manager (GM). Under the GM are 7 Heads of Departments namely: Corporation Secretary (who is slightly above the rest in hierarchy); Procurement, Stores and operations, Sales and Marketing, Finance and Accounts, Internal Audit and Human Resource and Support Services. Quality Assurance, Management information system and Public Relations are under the GM's office. The organization chart is as in **Appendix 1**.

1.2.8 **Audit Objectives**

The audit objective was to assess the operations of National Medical Stores in the areas of procurement and storage. The view was to establish the extent to which customers' requirements for drugs were met, whether drugs were procured according to plan; to ascertain the efforts made to ensure that drugs do not overstay and the procedures put in place for retrieval and destruction of expired drugs. Finally, the audit would recommend improvements where problems exist.

1.2.9 **Audit Scope**

The audit focused on the aspects of whether customer requirements are met, procurement planning, needs assessment, coordination of procurements, storage and disposal of expired drugs by National Medical Stores (NMS,) and covered ten out of eighty districts. Three or two districts were sampled from each of the four regions of the country. Stratified random sampling method was used to select the District with the highest, medium and /or smallest number of health units. The sampled districts were: Nebbi and Arua in the Northern region; Soroti, Moroto and Iganga in the Eastern; Mbarara and Kabarole in the west and Wakiso, Masaka, and Kayunga in the central region. The study covered 4 years from July 2005/06 to June 2008/09.

CHAPTER 2

METHOD OF DATA COLLECTION

The audit was carried out according to International Organization of Supreme Audit Institutions (INTOSAI) standards, and the VFM Audit Manual of the OAG of Uganda. Audit methods used were: document review, Interviews and physical inspections/Field visits.

2.1.1 Document Reviews

A number of documents and records were reviewed with the objective of understanding the activities and operations of NMS regarding procurement, planning and its supply chain. Details are as per **Appendix II**.

2.1.2 Interviews

Nine interviews were conducted at NMS during the audit. The purpose of the interviews was to obtain information on the procurement and storage system of drugs and establish the challenges faced. The following officials and groups were interviewed: The General Manager, the Chief Internal Auditor, the Head of Stores and Operations, the Head of Transport and Distribution, the Head of Finance, Head of Human Resources and Security, Quality Assurance Officer, Head of Sales and Marketing and the Head of Procurement.

Other officials interviewed were from related organizations such as the National Drug Authority and the Ministry of Health.

Additional field interviews were conducted with upcountry officers whose units are beneficiaries of NMS supply and distribution chain. These were nine Chief Administrative officers, nine District Health Officers, eleven Stores Management Officers, eight officers' in-charge of Health Centre IV's, five Medical Superintendents and five pharmacists of Referral Hospitals.

2.1.3 **Physical inspection and field Visits**

The inspections and visits covered NMS headquarters, five Regional Referral Hospitals, six District Health offices and a sample of eight Health Centre IV's (see below). This was with the view of understanding the whole supply chain in the operations of NMS and to corroborate findings with the results from the interviews and the information from the documents reviewed.

Hospitals and Health Centres visited included:

A. Regional Referral Hospital

Western Region: Fort Portal and Mbarara
Eastern Region: Soroti
Northern Region: Arua
Central Region: Masaka

B. District Health Offices

Western Region: Fort Portal and Mbarara
Eastern Region: Moroto, Iganga
Northern Region: Nebbi
Central Region: Kayunga

C. Health Centre IV's

Western Region: Bwizibwera and Bukuku
Eastern Region: Serere and Busesa
Northern Region: Pakwach and Rhino camp
Central Region: Kangulumira and Ndejje

CHAPTER 3

SYSTEMS DESCRIPTION & PROCESS DESCRIPTION

3.1 **ROLES AND RESPONSIBILITIES OF KEY PLAYERS**

3.1.1 **The Board of Directors**

The Board is the governing body of the corporation which exercises the following functions, inter alia,

- To formulate and review the policy of the corporation having regard to its purposes as set out in the NMS Act.
- To set targets for the annual performance of the corporation both in terms of public service and financial results.
- To establish its own procedures and to approve an Operations Manual for the internal operations of the corporation on the basis of a draft submitted by the management committee and to approve proposals for modifications to the operations manual. The GM is the Chief Executive Officer of the Corporation and is responsible for the day- to- day operations of the corporation as detailed below:
 - Responsible for the management of the funds, property and business of the corporation and for the administration, organization and control of the staff of the corporation.
 - Attends and participates in all the meetings of the Board and has a voting right except in matters relating to his/her own appointment and the assessment of his/her performance.
 - Heads the management committee of the corporation.

3.1.2 **The Corporation Secretary (CS)**

The Corporation Secretary offers legal counsel to the Board and Management. He is responsible for keeping the seal and records of all transactions of the corporation.

3.1.3 **Head of Procurement (HOP)**

The HOP is in charge of the procurement of drugs and medical supplies of the Corporation. He ensures quality from the design of technical specifications, evaluation of bids, and the receipt of goods up to post-marketing surveillance.

3.1.4 **Quality Assurance Officer (QAO)**

The role of the quality assurance officer is, among others, to:

- Set specification of medical items during procurement before forwarding to the procurement unit and participate in the technical evaluation of bids for drug supply
- Check the technical aspects of pro-forma on receipt and consults with NDA for issuance of verification certificates.
- Verify items received in the store for quality compliance with specifications
- Forward quarantined drugs (i.e. drugs for analysis not yet for distribution) to NDA
- Handles narcotic drugs in strict compliance with the guidelines for issuing of narcotics
- Ensure that the drugs in stock available for collection are of good quality
- Initiate the process of incineration of expired/written off drugs in consultation with NDA
- Handle complains regarding laboratory equipments and pharmaceutical products from the sales and marketing department.

3.1.5 **Head of Stores and Operations (HOSAO)**

The HOSAO is in charge of receiving, storing and dispatching supplies to customers.

3.1.6 **Head of Finance and Accounts (HFA)**

The role of the HFA is, among others, to:

- Establish and monitor the maintenance of financial regulations, procedures, policies and systems.
- Provide reliable and accurate annual reports in accordance with acceptable accounting conventions and the relevant laws governing the Corporation
- Monitor the maintenance of the integrity of the accounting records and all financial transactions of NMS.

- Prepare periodic reports and advise management on the financial performance of NMS in accordance with the approved budgets and reporting guidelines.
- Develop, review and maintain accounting and financial controls and procedures to ensure that the assets of the Corporation are safeguarded in line with NMS financial procedures and policy.

3.1.7 Chief Internal Auditor (CIA)

As head of Internal Audit function, the CIA:

- Carries out pre audit of all financial transactions before they are sanctioned.
- Verifies all issues to do with receipts and payments.
- Verifies processes that impact on financial matters.
- Reviews internal control systems.
- Advises management on how best to achieve set targets

3.2 **KEY PROCESS DESCRIPTION**

3.2.1 **NMS Procurement**

The procurement process of drugs and medical supplies begins with a needs assessment that is done **every six months** by the Inventory Management Team which computes the Average Monthly Consumption (AMC). The team comprises: HOSAM, HOSAO, PO, COSMA and QAO.

The procurement activity is coordinated by the HOP together with the HOSAO in line with NMS Procurement and Disposal Manual, Public Procurement and Disposal of Public Assets (PPDA) Rules and Regulations. Basing on the AMC, the Procurement Department estimates the required stock in view of the stock cover on hand for the next three months when the next delivery should be made.

In the case of procurements other than for drugs, the user departments, at the beginning of each financial year, prepare work plans based on the approved budget. All work plans are presented to the Procurement and Disposal Unit (PDU) to facilitate the compilation of the annual procurement plan and its implementation.

Actual procurements are based on adjusted procurement plans. These are derived after periodic needs assessment reviews. Procurements are initiated by the user departments based on anticipated customer demands.

For every procurement, the availability of funds is certified by the Head of Finance and Accounts after which the PDU proposes a procurement method, prepares tender and bid documents and submits to the contracts committee for approval. The rest of the procurement procedures up to receipt of goods are done in accordance with the "NMS Procurement and Disposal Manual, December 2004" and PPDA rules and regulations.

3.2.2 **Third Party Procurements**

NMS receives medical supplies procured by health development partners referred to as Third Parties. NMS stores and distributes the 3rd party supplies to health centres based on delivery schedules prepared by them. NMS charges these programmes a handling fee for the services provided. The NMS and third parties sign contracts in the form of memorandum of understanding (MOU) that stipulates terms for storage and delivery of drugs to health centres and payment terms for the delivered drugs.

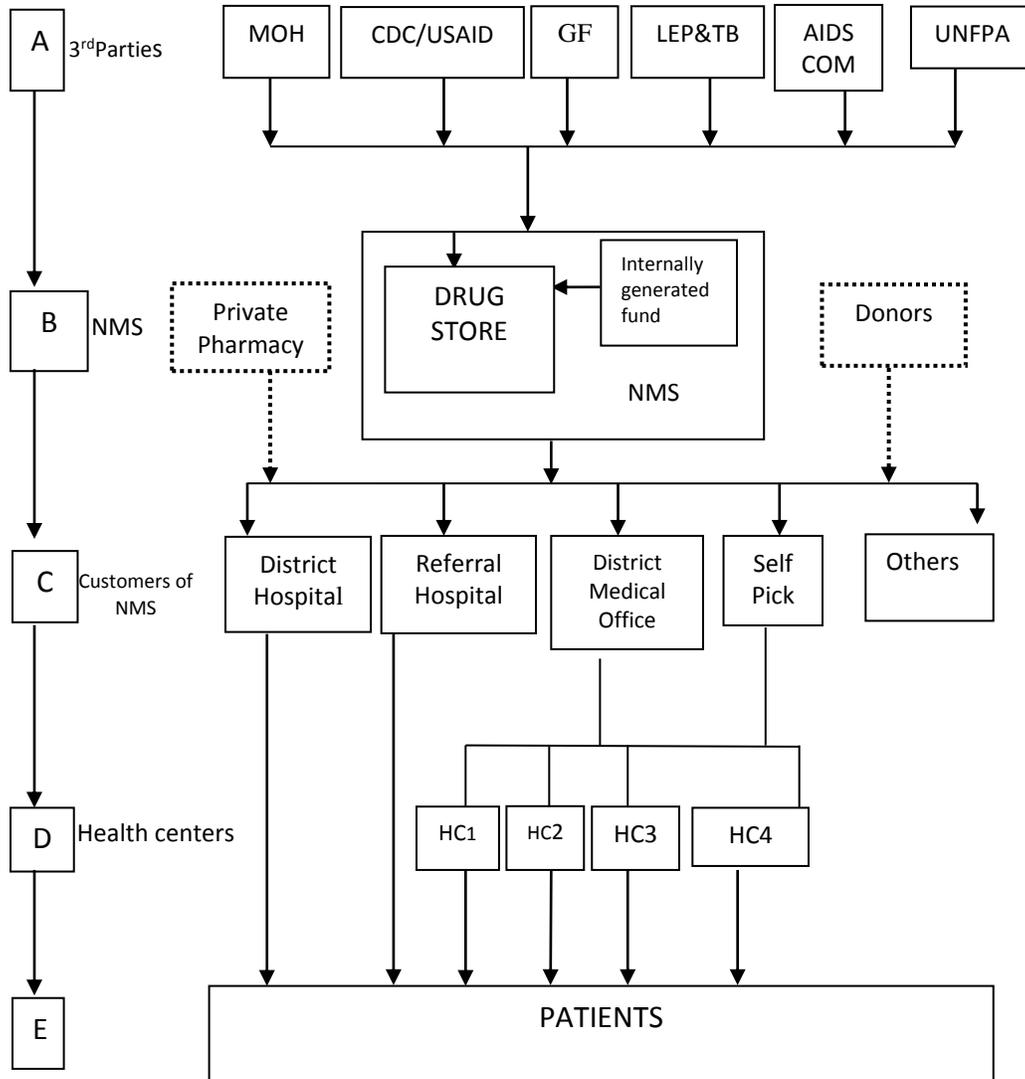
3.2.3 **Drugs Movement to and out of NMS**

NMS serves as a central storage point for drugs procured by itself and other agencies namely: MoH, CDC/USAID, Global Fund, Leprosy and TB program, Aids Commission and UNFPA. These agencies are referred to as third parties.

NMS supplies drugs direct to District Health Officers at District headquarters (For District Health centres), the District Hospitals or Referral hospitals.

The District Health Office is responsible for the distribution for the drugs to the lower health centres (HC1-IV), which plays a major role for the prompt availability of supplies in those lower health centres. Patients get treatment from any health centre. This is illustrated diagrammatically by the flowchart in figure 1 below:

Figure 1 Flow of drugs -NMS to Government Health Centers



District hospitals, referral hospitals and District medical offices can also receive drugs direct from donors or procure from recommended private pharmacies. NMS delivers drugs to a District Health Office which takes the responsibility to deliver to the health centres.

3.2.4 **Needs Assessment**

Needs assessments are done by NMS to ensure optimal stocking of trading stocks so as to minimize expiries and stocks running out. The following steps are followed in ensuring this:

The Selection of items is done by the inventory management team in consultation with pharmaceutical department taking into consideration the core list of items.

A period of **not less than a year** is used for making seasonal variation adjustments.

Average monthly consumption (AMC) data is used for the calculation taking into consideration significant stock outs periods and write offs using a defined formula.

The setting of stock levels involving maximum, minimum and re-order levels are done for each item taking into consideration previous lead time from supplier and past consumption trends.

The classification is done according to the ABC grouping based on annual sales, lost sales and increase or decrease in market demand.

The quantification of drugs for next procurement is based on re-order list as reported.

The estimated quantities are adjusted upwards or downwards depending on whether there is expected increase or decrease in consumption, respectively. This is done by applying percentages individually per product.

The determination of the re-order period and frequency of deliveries for individual items is done considering the product type, ABC classification, economic order quantities and changes in consumption pattern. This is then recommended for management approval on a standard form.

3.2.5 **Storage**

(a) Receipt of drugs and medical supplies in store

Goods received in NMS stores are from 2 sources:

- i. NMS own purchase

When items are delivered, they are received and verified by the stores management together with the Internal Audit against the purchase order. The storekeeper raises the Goods Received Note (GRN), and the supplies are entered in the stores books.

ii. 3rd Party Goods for storage and distribution

When items are delivered by third parties, they are received and verified by the stores management together with the Internal Audit against the delivery note provided by the third party procurement partners. The storekeeper raises the Goods Received Note (GRN), and the supplies are entered in the stores books.

(b) Stores records and management of drugs

In order for stores space planning to be efficiently carried out, the Procurement Department provides, **on a weekly basis**, the status of what is expected, including dates of delivery to Stores and Logistics, and Pharmaceutical Departments.

(c) Utilization of Storage facility

NMS uses the fluid storage system where items are stored in any available space. This implies that one item is not stored in one location but in various locations. To establish the total number of the same item in the stores, an accumulation has to be made of the quantities in the various locations.

(d) Customer Sales order processing criteria

The majority of Orders for drug supply are of 2 categories:

- Pull orders – Originated by customers according to their own needs for which they directly make payments.
- Push orders – These orders are originated by MOH and third parties specifying the quantity of drugs and medical supplies to be delivered to each specified district and health units.

On receipt of customer orders in the store from the Sales Manager, the stores team packs the required supplies ready for dispatch to the consumer and passes the appropriate documentation through the departments mentioned below:

- i. Marketing department
- ii. Finance and Accounts department
- iii. Stores and logistics department
- iv. Finance and Accounts department
- v. Transportation
- vi. Accounts Department

(e) Handling of expired drugs

(i) Identification, separation and write off

The identification of **non-saleable stock items** is done by the Stores Management Officer (SMO). This is for the identification of items with less than 3 months of stated shelf life which is done on a monthly basis through the following methods:

- o Preparation of an expiry survey report once a month
- o Physical identification of items with less than 3 months of the stated shelf life by regular stock inspection or by reports from stores staff.

Identification is also done by the Stores Management Officer (SMO) for items that have been damaged or have deteriorated in quality while in storage from reports by the stores assistant on a monthly basis (this presumably excludes items received in this state from suppliers).

All locations containing the items identified as of short shelf life are blocked to prevent their distribution. The items are clearly labelled as "short expiry or expired items not for distribution" or with other suitable labels specifying their condition.

The appropriate stock write off form is then generated for the items identified above, along with their values and the reason for write off. The form is given to the Quality Assurance Officer for verification.

There is also physical crosschecking and clear indication of items which should be donated or written off and recommendations made to the Head of Stores and Operations (HOSAO).

The form is checked and forwarded to the Chief Internal Auditor (CIA) for verification.

A list of the obsolete items recommended for write off by the NMS inventory team is forwarded to CIA using the appropriate stock write off form. (Obsolete items may be defined as items which have not been sold for more than 3 years, and have been declared by the NMS inventory team as obsolete on a case by case basis).

The items identified with short shelf life are verified and recommended for donation or write off. The recommendation is forwarded to GM for approval.

The GM approves the items to be written off, in consultation with the Head of Finance and Accounts (HFA). Items are then ready for disposal either by donation or destruction.

The HFA creates and posts a journal to remove the items from the inventory and sends a copy to SMO the for filling.

(ii) Disposal of written off stock

The items to be written off are issued to the QAO and physically moved to the Expired and Obsolete items holding area.

Request(s) are received from suitable recipients to lawfully use any of the items approved for disposal.

A journal is created and posted to remove the items from the inventory if not yet done. A copy is given to the SMO for filling.

Items are issued to recipient(s) along with a letter signed by the GM documenting the donation and recipients are asked to acknowledge receipt.

Once, the expired and obsolete items **holding area is full or every six months**, the SMO Liaises with the National Drug Authority and Procurement to inspect and arrange for the disposal of the damaged/ expired items.

The Quality Assurance Officer (QAO) supervises the inspection and the loading process of the items to be destroyed, ensuring that the representative of the company appointed

to dispose of the items signs a delivery note to acknowledge receipt of the items. The QAO follows up with National Drug Authority to provide a drug destruction certificate.

CHAPTER 4

FINDINGS

The findings of the study are as follows:

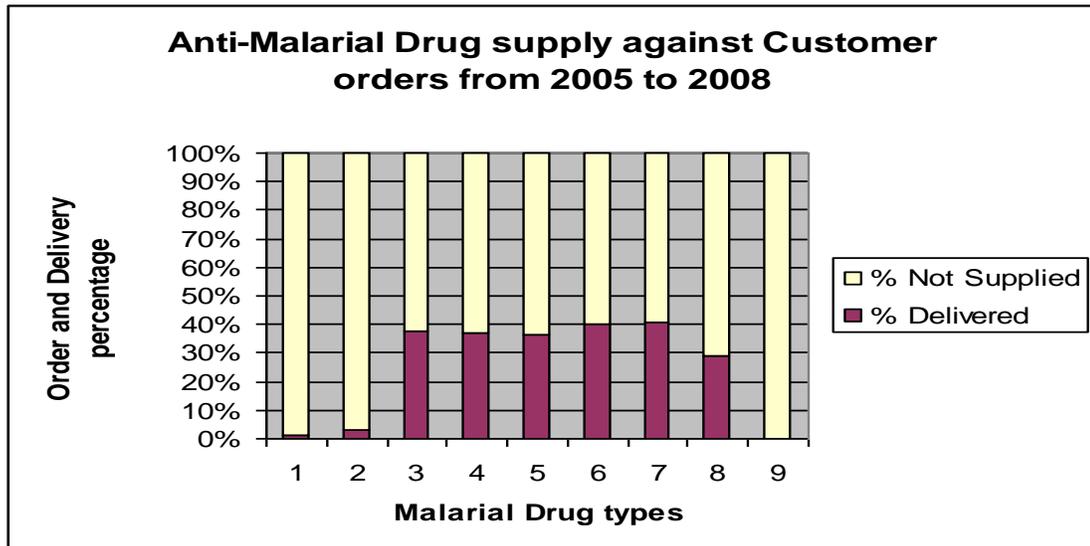
4.1 MEETING CUSTOMERS' REQUIREMENTS

4.1.1 Capacity to supply ordered quantities

NMS is required to supply drugs in the quantities ordered by the Health Centres in compliance with the Act.¹ Public Health centres can only procure drugs from NMS except when NMS provides them with a certificate of non-availability.

However, the audit observed that in a number of cases, NMS could not supply drugs and medical supplies to meet the orders placed by the public health units. The information analyzed from NMS sales performance in respect of key anti-malarial drugs that are expected to be available at all times in NMS stores² revealed that less than half the orders were honored by NMS as reflected in the bar chart in figure 2.

Figure 2 Anti-Malarial drug supply against customer orders



¹ The National Medical Stores Act, 1993 (cap. 207).

² Essential Medicines List for Uganda EMLU 2007, page 2

Key

Chloroquine 50mg base/5ml ¹	1
Quinine 100mg/5ml	2
Chloroquine 200mg base/5ml	3
Quinine di-HCl 600mg/2ml	4
Artemether 50mg	5
Chloroquine 150mg base	6
Chloroquine 150mg base tab	7
Quinine sulphate 300mg, film coated ²	8
Quinine sulfate 300 mg tab	9

On average, NMS' capacity to supply anti-malarial drugs from their own stocks during the period was 40% while third parties supplies were at 77%. The average for both categories was 60%. Out of the 20 different types and forms of anti-malarial drugs supplied both by NMS and 3rd Parties in the same period, only homapack green was supplied 100% to meet the orders(that is, all the 21,000 packs ordered were supplied). It is worth noting that malaria is the most common sickness reported on daily basis at all levels of health centres in Uganda.

We noted further that NMS supplies a range of other drugs to health centres that are not ordered by them to compensate for the value of the drugs that could not be supplied. 18% of the 1,281 drug items supplied between 2005 and 2008 fall in this category. This action only served NMS' financial management concerns but did not address the needs of the health centres.

Because of those shortcomings on the part of NMS, the management of a number of health centres have a tendency of giving an excuse for purchasing Primary Health Care (PHC) drugs for which money is availed in cash from competing suppliers.

This was because of NMS' inability to use the appropriate data to plan and procure the right types and quantities of drugs to meet customer requirements.

¹ Effective 2008, there was policy change, removing this drug from 1st line treatment of malaria as per EMLU,2007

² Effective 2008, there was policy change, removing this drug from 1st line treatment of malaria as per EMLU,2007

The result of this situation was perpetual stock deficiency at health centres resulting from NMS' failure to meet the customers' orders. This significantly affects the rural poor people who depend on Government health units. As a result they do not obtain appropriate treatment for life threatening common diseases. On a site visit to Bukuku Health centre in Kabarole on 19th September 2008, we witnessed cases where patients had to go home without treatment for malaria.

The team did not have the means of tracking the health conditions of those who returned home untreated. However, a proportion could have died as a result of non treatment if they had no alternatives or could have opted for traditional treatment out of desperation.

This is likely to have contributed to the increasing numbers of private drug shops that have sprung up to fill the gap created. The health centres are also at the risk of purchasing cheap sub standard drugs from private Pharmacies.

4.1.2 **Certificate of drug non-availability**

NMS is legally the sole primary supplier of drugs to Public Health units. The Public Health units are only allowed to procure drugs from other recommended private pharmacies after their orders with NMS have not been honored due to insufficient stocks and after they have been issued with certificate of non-availability by NMS.

The audit did not see any case of issued certificate of non-availability in all the 14 health units visited during beneficiary survey. Moreover, the NMS management operates a system that automatically generates the certificates for PHC. The certificates are separately dispatched by post if not collected personally, together with a pro-forma invoice from the management. These certificates, however, either do not reach the health centres or are withheld by DHOs. NMS' evidence of the health centre acknowledgment of the certificates or dispatch record were not availed for audit. The 6 copies out of the 14 non-availability certificate requested and availed by NMS were printed fresh from the system and not the required file copies of those dispatched.

The cause of this undesirable situation is the failure by the management to appreciate the implication of certificate of non-availability to health units; the reluctance by the management to provide evidence (in form of the certificate) that in the end may indicate that they are inefficient and; lack of clarity on the procedure and the drug supply situation (Credit line or PHC) that requires issuance of certificate of non-availability. While NMS issues the certificates for PHC only, health units expect certificates for both Credit line and PHC drugs. There is also inefficiency in the movement of the certificate between NMS, DHO and health centres.

The inefficiency in the handling of certificates of non availability created opportunity for many health centres to disregard the requirements for the certificate and procure drugs from elsewhere. As a result, additional avoidable costs are incurred in form of transport from health units to alternative private pharmacies since private pharmacies such JMS do not provide drug delivery services to beneficiary Districts. It additionally leads to re-channeling of funds meant for drug purchase to meet those additional operational costs. Consequently, funds available for drug purchase are reduced, which escalate drug shortages in health centres further.

As seen in table 2, the total expenditure on purchases of drugs by health centres from the two major recommended suppliers for EMHS of PHC grants (NMS and JMS) for FY 2006/07 and FY 2007/08 reflects that 45.9% in FY 2006/07 and 45.5% in FY 2007/08 amounting to shs.17 billion was spent either on purchase from other sources or diverted to non drug expenditures.

Table 2 Expenditure for EMHS of PHC grants at NMS, JMS and others compared for FY 2006/07 and 2007/08

Level	EMHS Allocation '000	% Expenditure at NMS	% Expenditure at JMS	% of Expenditure at NMS+JMS	% of Expenditure at Others
FY 2006/2007					
Regional Ref Hospital	2,903,260	6.7%	31.6%	38.3%	61.7%
General Hosp	4,245,000	14.3%	40.2%	54.5%	45.5%
District Hosp	11,057,915	20.7%	37.3%	58.0%	42.0%
Total FY 2006/07	18,206,178	17.0%	37.1%	54.1%	45.9%
FY 2007/2008					
Regional Ref Hospital	3,927,815	8.5%	40.0%	48.6%	51.4%
General Hosp	4,245,000	13.6%	43.5%	57.1%	42.9%
District Hosp	11,029,252	18.8%	35.5%	54.3%	45.7%
Total FY 2007/08	19,202,068	15.5%	38.2%	54.5%	45.5%

Source: Annual Health Sector Performance report, Financial Year 2007/2008

4.1.3 Response to Customers' orders

Best practice in the industry, especially competitors like Joint Medical Stores, is that the time taken to process a customer order ranges between few hours to two days.

However, it was observed that NMS did not have a clearly spelt out policy on the standard time it should take to process a customer order from receipt to delivery at customers' District or personal collection from NMS premises. Table 3 shows this fact:

Table 3 Average delivery time on Customers' orders

YEAR	No. of orders processed	Average time taken (in days) to deliver	Number of Orders not delivered by audit time
2005	No data availed		
2006	No data availed		
2007	14,723	13	0
2008	7,050	22	110
2009	1,065	59	26
Average for period	7,613	31	68

Source: NMS executed orders report

Table 3 shows that it takes on average 31 days to deliver an order from the time of receipt. There were 110 orders dispatched from NMS in 2008 but evidence of the drugs reaching the destined health centres was not availed indicating that those orders may not have reached intended destinations. The Management explained that they subject such open orders to investigations. There are cases when orders took one day while others three months, regardless of the distance from NMS premises. The Management position is that they accumulate and make deliveries when it is economical to do so after every 30 working days disregarding the consequences of the delay.

The absence of guidelines in the Sales Policy document regarding the maximum time it should take to process and deliver a customer order created no obligation for the prompt processing of customer orders. This also denied customers a standard reference time as basis for genuine complaints. Additionally, lack of focus on individual orders in favour of delivery only when it is economical made customers' feel ignored.

The effect was the loss of key customers who, except for the credit line items, resort to procuring drugs and medical supplies from JMS and other private pharmacies. This was confirmed by interviews held with the District Health Officers, Medical Superintendents of Referral Hospitals and other customers. It led to the loss of the sales revenue opportunity amounting to shs. 40.1 billion (Shs. 8.5 billion recorded in 2006 alone¹ and other two financial years as illustrated in table 4).

Table 4 Expenditure for EMHS of PHC grants at NMS and others compared for FY 2006/07 and FY 2007/08

Level	EMHS Allocation '000	Expenditure at NMS %	Expenditure to Competitors %
FY 2006/07			
Regional Ref Hospital	2,903,260	6.7%	93.3%
General Hosp	4,245,000	14.3%	85.7%
District Hosp	11,057,915	20.7%	79.3%
Total FY 2006/07	18,206,178	17.0%	83%
FY 2007/08			
Regional Ref Hospital	3,927,815	8.5%	91.5%
General Hosp	4,245,000	13.6%	86.4%
District Hosp	11,029,252	18.8%	81.2%
Total FY 2007/08	19,202,068	15.5%	84.5%

Source: Annual Health Sector Performance report, Financial Year 2007/2008

¹ Minutes of 29th NMS/MOH technical Review meeting, 16th Jan 2007.

As seen from table 4, 83% of PHC funds in FY 2006/07 and 83.5% in FY 2007/08 of the PHC allocations amounting to 31.6 billion was used by the health centres to purchase drugs from competitors.

Additionally, drugs which were procured on account of high monthly consumption pattern subsequently turned out to become excess as a result of the reduced AMC.

The sales opportunity lost denied NMS the needed sales income required to improve service delivery. This increases the funding burden on government by NMS. It also leads to failure to raise adequate revenue to finance the procurement of more drugs. Besides, NMS have persistent stock outs. This hinders the opportunity to increase the supply of drugs for the treatment of citizens,' thus compromising government's efforts to provide affordable treatment to citizens.

4.2 **PLANNING, NEEDS ASSESSMENT AND COORDINATION**

4.2.1 **Procurement Planning**

The procurement plan is expected to enable NMS to maintain a service level of 100% under credit-line and 70% under PHC¹. This would ensure that all orders from customers are met and the buffer stock maintained at a minimum level to ensure that no stock outs occur.

The Audit team established from the procurement performance data availed for the three financial years that NMS prepared procurement plans based on unreliable AMC which they did not even comply with. They hope to place reliance on aggregation of procurement plans from health units which are not forthcoming. Drugs delivered by 3rd parties are not even based on planned procurements. An extract of drugs procurement report for three Financial Years is reflected in table 5:

¹ NMS sales policy guidelines; Procurement department specific objective 2.1(i), July 7,2008

Table 5 Drug procurement report Credit line extract

Description of drugs	Quantity awarded & ordered	Quantity Delivered	Under delivery
2007/2008			
Acyclovir Tab 200mg	16,800	6,400	10,400
Acyclovir skin cream 5%, 10g	24,000	9,600	14,400
Doxycycline 100mg tab	48,000	16,442	31,558
Phenorbabitol tab 30mg	14,400	6,400	8,000
2006/2007			
Penicillin, procaine 3MU+ benzyl 1MU	1,680,000	376,000	1,304,000
Penicillin. benzyl 1MU/600mg	13,007,500	4,607,500	8,400,000
Cotrimoxazole 400+80mg scored	160,800	146,996	13,804
Chloroquine 200mg base/5ml	1,808,700	1,808,500	200
Quinine sulfate 300mg	15,190	7,069	8,121
Chloroquine 150mg base	15,000	14,800	200
2005/2006			
Amoxicillin capsule 250mg	43,200	34,992	8,208
Paracetamol tablet 500mg	93,600	85,176	8,424
Glucose Inj 5%, 500ml	432,000	71,665	360,335
Sodium Chloride (normal saline) injection solution, 0.9% 500ml	432,000	95,993	336,007

Source: NMS procurement department annual report 2006, 07 and 08

The above problem is caused by non-generation of estimates of national drug needs arising from a conflict in assignment of this role to both NMS and the National Drug Authority Commission¹. The estimates could provide a guide to NMS in procuring sufficient quantities to hold in stock². This problem is also attributed to the failure by NMS to maintain its own accurate trend data for decision-making; lack of capacity by NMS staff to collect alternative accurate data for drug quantification; lack of procurement plans from health facilities, unpredictable prescriptions pattern by medical practitioners; and use of inappropriate data for drug quantification during needs assessments.

The effect of these performance gaps is the perennial stock-out of some drugs; excess stocking of certain categories of stock, which are slow moving. It also locked in funds which could have been used to purchase more needed drugs to sufficient quantities, as well as led to the expiry of excess stocks.

¹ National Drug Policy and Authority Act, Chapter 206, section 10(1),(2)

² Essential Medicines list for Uganda, EMLU, 2007, page 2

4.2.2 **Buffer stock**

NMS is required to maintain a buffer stock to last at least four months of sales demand to avoid stock outs¹. Additionally, all items of medicine listed for health centre levels up to and including H (Hospitals) level are expected to be available at all times from NMS².

The stock status for the period November 2008 to February 2009 in table 6 shows stock inadequacies:

Table 6 Analysis of percentage (%) of drug items with less than 4 months' stock cover (by Category)

Category of stock	2008			2009						
	No. of items	Nov	Dec	Jan	Feb	Mar	Apr	May	June	Average
Core credit line drugs ³	17	47%	53%	44%	50%	56%	59%	56%	53%	52%
Non core credit line drugs ⁴	41	54%	51%	48%	53%	36%	35%	35%	40%	44%
Other priority list drugs ⁵	38	73%	73%	77%	71%	67%	67%	72%	70%	71%
Average	32	58%	59%	56%	59%	54%	54%	54%	53%	56%
Sub-total										
No data availed for 2007										
No data availed for 2006⁶										
No data availed for 2005										

Source: Raw data from weekly stores management Reports.

In table 6, it is clear that drugs were not replenished to ensure that stock levels did not drop below the four months buffer stock policy. Although the management explained that they were using Just in Time policy for items locally manufactured for efficient utilization of storage space and limited capital, this was not supported by the Stores Operational and Management Manual in use at the time of audit.

¹ NMS stock replenishment policy as spelt out in Stores Management Operations Manual,

² Essential Medicines list for Uganda, EMLU, 2007, page 2

³ See glossary

⁴ See glossary

⁵ See glossary

⁶ Stock out rate for 109 credit line items was 30%, Minutes of the 29th NMS/MOH Technical review meeting, 2007

Stock status reports for 2005, 2006 and 2007 were not available to show the status during that period.

Generally, an average of 56% of all the stock categories fell below the four (4) months' buffer stock during the eight months period between 2008 and 2009. Analytically, the shortages were: 71% from other priority list, 52% of core credit line drugs items and 44% from non core items list. 164 stock items are in the categorization.

These shortages were as a result of failure by the management to comply with the Stores Operational and Management Manual which required them to use spelt out scientific methods of ordering drugs and medical supplies. This problem stems from the high staff turnover which is not accompanied with speedy review of management tools in line with the current management thinking and practice; as well as inadequate planning.

The effect of this state of affairs is that the country is left vulnerable and unprepared to handle emergency drug requirement situations such as accidents, outbreaks of diseases etc. This could cost lives unnecessarily. Some of the drugs occasionally out of stock are malarial drugs which treat one of the diseases with leading causes of morbidity in the country at 38%, 33.6% and 26.1% in the years 2006, 2007 and 2008 respectively. This disease pattern accounts for 27 of the total 83 million diagnoses for the three years, representing 33% of total diagnosis¹.

4.2.3 **Stock level of drugs**

(i) Stock at National Medical Stores

NMS stock replenishment policy requires that the "stocking of trading stocks shall, as much as possible, be in such a manner that maximum stock held at any one time **should not exceed 1 year's quantity**". This is to minimize stock-outs, total stock holding costs as well as overstay of drugs in the store. The inference is that, the maximum length of time a drug should be kept in the store is one year.

However, the team observed that NMS has been stocking drugs in excess of the one year's requirement as illustrated in table 7:

¹ MoH-Health Management Information System(HMIS)

Table 7 Drugs and sundries stored in excess

Item	Available pick quantity at date	AMC	Date of stock position	Approximate cover by stock on hand
Core items.				
AD Syringes 5ml+ Needle DISP. Detached.	4,058	200	28 Nov 2008	1.7 yrs
AD Syringes 2ml +Needle Disp.Detached	35,315	1,400	22 Dec 2008	2.1 yrs
AD Syringes 5ml+Needle Disp. Detached	42,375	1,000	22 Dec 2008	3.6 yrs
Non Core items				
Bendrofluazide 5mg tablets	5,293	100	28 Nov 2008	4.4 yrs
Erythromycin stearate 250mg	27,344	1,600	28 Nov 2008	3.6 yrs
Blades scalpel size 22	9,835	320	22 Dec 2008	2.5 yrs
Aminophyline	143,180	7,500	15 Jan 2009	1.6 yrs
Chloromphenicol 250mg	23,399	800	15 Jan 2009	2.4 yrs
Ranitidine 150mg	32,895	100	22 Dec 2008	27.4 yrs
Other Priority List items				
Sheeting McIntosh red rubber 20m roll, 90 cm wide	69,504	10	22 Dec 2008	22.3 yrs
Albendazole 400mg scored	50,343	4,015	01 Aug2007	1.1 yrs
Gentian violet BP 80, methylrosanilium 25G	20,511	600	01 Aug2007	2.8 yrs
Catgut chr. 2/0 (M3.5),75cm, N:30mm	10,671	800	01Aug2007	1.1 yrs
Mebendazole 100mg	51,501	3,500	20 Jan 2006	1.2 yrs
Needle infusion butterfly	227,188	16,000	20 Jan 2006	1.18 yrs
Quinine di-Hcl 600mg/2ml	1,526,865	100,000	20 Jan 2006	1.2 yrs
Salbutamol	7,657	600	15 April 2005	1.1 yrs
Plaster adhesive zinc oxide 50m	59,875	3,000	15 April 2005	1.6 yrs
Nystatin pessary 100 000 i.u	9,413	400	15 April 2005	1.9 yrs

Source: Weekly Stores Management Reports

As evidenced in table 7, the most striking examples are Ranitidine 150mg (used in the treatment of ulcers) stocked to meet consumption for 27.4 years; Sheeting McIntosh red rubber (used by mothers during birth) for 22 years; Bendrofluazide 5mg tablets for 4.4 years and Erythromycin stearate 250mg for 3.6 years.

According to the Ministry of Health, the national delivery pattern of mothers in public health units is as in table 8:

Table 8 Deliveries in health centres for the years 2002 to 2009

Months	Average Monthly deliveries	Annual total deliveries
2002	17,840	214,083
2003	21,886	262,633
2004	25,317	303,799
2005	29,567	354,799
2006	24,374	310,721
2007	33,481	425,014
2008	34,237	379,149
Total		2,250,198
Overall monthly average for 7 years		27,368
Overall Annual average for 7 years		321,457

Source: MoH-Health Management Information System (HMIS)

Each role of Sheeting McIntosh red rubber (of 20m roll, 90 cm wide) could facilitate in the delivery of 10 mothers. The whole stock could facilitate 695,040 deliveries which is equivalent to 2 years consumption. Yet based on NMS' AMC the same stock can be enough to satisfy 22 years' demand. The sales performance pattern of this sheeting rubber shows that only 22 roles were ordered between 2005 and 2008 and were fully supplied.

The cause of this, according to management, is policy change by MOH without due regard to its effect on NMS drug supply commitments, leaving the stock of certain drugs redundant in NMS; medical practitioners who prescribe alternative drugs to patients to consume, leading to a drop in demand for certain stock (see the case for Sheeting McIntosh red rubber above). There is also the problem of the procurement of drugs by NMS without due regard to the stocking policy; and the inability of NMS to use actual field data available with MOH for their drug estimates.

The effect of this laxity was non movement of certain stock and subsequent excessive expiry of drugs and medical supplies as evidenced by the quantities of stock of expired drugs within the stores of NMS then. Further, there was the loss of Government funds in the value of the expired drugs valued at shs. 6.7 billion destroyed in November 2008¹ in addition to storage and destruction costs. For example, NMS hired 20 containers for the storage of expired drugs and had been paying Ushs 36m per month for the hire of the containers while shs. 764 million was spent in November 2008 to destroy the expired drugs. This expiry further denies the citizens the needed drugs for treatment.

(ii) Stock at Health Centre Stores

The Ministry of Health policy is that the essential medicines meant to satisfy the needs of the majority of the population and the drugs should always be available in adequate quantities and appropriate dose form. The Ministry of Health contends that constant availability of essential medicines in the health facilities will greatly assist in ensuring that patients receive optimum treatment of their health problems all the time. The essential medicines for anti malarial treatment include: Fansidar, First line drug for malaria (e.g. Chloroquine) and quinine². NMS is expected to have adequate stock of these drugs in order to supply health centres³.

Analysis of the Ministry of health data tracking essential medicines for malaria is reflected in table 9 as follows:

¹ NMS expired drugs destruction records, November 2008

² Essential Medicine List for Uganda, 2007, page 10 item 6.4.3

³ Essential Medicine List for Uganda, 2007, page 2

Table 9 Percentage of Health centres without anti-malarial drugs in the course of the month of 2006-2008

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual totals
2006	17%	22%	14%	20%	22%	26%	28%	21%	21%	24%	30%	18%	22%
2007	23%	8%	37%	23%	25%	29%	24%	96%	52%	37%	68%	30%	35%
2008	33%	23%	20%	21%	27%	26%	27%	34%	16%	35%	33%	34%	27%
2009	34%	33%	42%	-	-	-	-	-	-	-	-	-	36%
Monthly totals	28%	17%	27%	22%	25%	27%	26%	53%	30%	32%	46%	28%	29%

Source: MoH-Health Management Information System (HMIS)

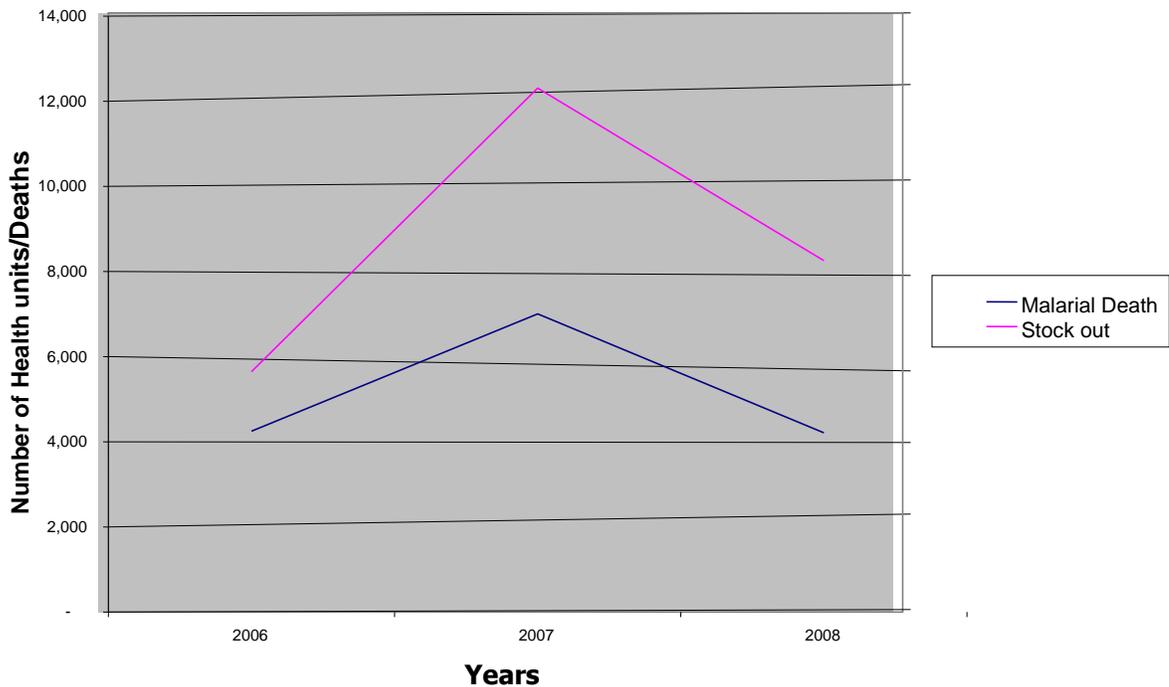
Health units which reported stock outs of anti-malarial drugs were 35% in 2007 up from 22% in 2006 and 27% in 2008. The highest stock out month was August 2007 in which 96% of the health centres reported stock out of anti-malarial medicine. This represents 2,613 out of 2,719 health centres which reported their stock status in that month.

Comparatively, the Malarial death rose from 4,252 in 2006 to 7,003 in 2007 and dropped to 4,211 in 2008, implying that there were 2,750 more malarial deaths during the year 2007, that is, 68% above usual. The month of August recorded the highest number with 1,286 deaths from an average monthly death rate of 430 in the three years¹ (Details as in Appendix VI)

The diagrammatical representation is as per graph in figure 3:

¹ MOH-Health Management information system (HMIS)

Figure 3 Malarial Death compared to anti-malarial drug stock-outs



Source: MoH-Health Management Information System (HMIS)

The stock outs were caused by the irregular supply of essential drugs by NMS; not supplying all drugs ordered by health units; and pilferage of drugs during drug distribution reflected in the Forensic audit commissioned by the Auditor General¹. Ineffective information sharing mechanisms between health centres, NMS and the Ministry of Health on Health Management Information such as drug usage and stocking positions.

Stock outs in health units make patients desperate and can resort to any available drugs in the market, regardless of the quality.

4.2.4 **Needs assessment in planning**

The estimation of drugs quantities for the trading stocks to procure during a procurement cycle should be done in a scientific and objective manner in order to avoid

¹ Report of the forensic audit commissioned by the Auditor General in 2007

stock-outs, under stocking and minimize expiries¹. This requires that by the time a delivery from the supplier is made; available stock should be enough to meet demands.

On the contrary, NMS did periodic projections based on only actual six months' Average Monthly Consumption (AMC) as shown in table 10:

Table 10 Average monthly drug projections

Item	Available pick quantity at date	AMC	Date	Stock cover on hand (Months)	Required 3 months delivery Quantity
Bandage Cotton	236	11,500	15.01.09	0.0	46,000
Amoxicillin	8,635	5,000	"	1.7	20,000
Chloroquine	1	500	"	0.0	2,000
Ferrous sulphate	0	3,400	"	0.0	13,600
Amoxicillin	3,472	5,000	28.11.08	0.7	20,000
Bandage Cotton	0	11,500		0.0	46,000
No data availed for 2007					
No data availed for 2006					
No data availed for 2005					

Source: NMS Weekly Stores Management Reports 2008, 2009.

Table 10 shows the available stock quantities on hand when AMC is computed. The computation of AMC is based on only the actual drugs that NMS was able to sell within the previous six months. This resulted in omission of customer orders not honored in all the procurement projections. The projections reflect only what NMS managed to sell based on the existing stock and not total needs of customers as per their orders (that is, orders honored plus drugs out of stock). The improper needs assessment is reflected in the stock-outs and excessive stock balances of various drugs as per stores management report extract in Tables 5 and 6.

For example, on 15th January, 2009, AMC for Chloroquine (used in the treatment of malaria) was computed to be 500 units when the stock on hand was one unit which was even not enough to cover one day's requirement of 16.7 units. In the case of Ferrous

¹ NMS Stores Management Operations Manual page 7, item 1.7.1

sulphate (which is used in blood –related treatments) and Bandage cotton (which is mainly used in emergency treatments), there was no stock on hand at all.

Furthermore, NMS, in some cases, supplied certain drugs in excess of ordered quantities¹.

The cause of this is management’s lack of capacity and non compliance with the existing Stores Management and Operations Manual.

The resultant effect of drugs supplied in excess of health units’ requirements was expiry arising from inability to utilize all the quantity supplied. At the same time, drugs supplied to health units in deficient quantities led to the failure to meet the drug needs of the health units.

4.2.5 **Coordination between NMS and third parties**

Best practice requires that where two or more parties act towards the attainment of a common objective, there should be a Memorandum of Understanding (MOU) between the parties. The MOU in question should spell out the respective responsibilities of the parties concerning drug procurement.

In addition to the distribution of own drugs procured, NMS also stores and distributes drugs on behalf of third parties such as Global Fund, Center for Disease Control(CDC)/USAID, Malarial control Project, UNFPA, MoH, Leprosy and TB projects.

Despite serving common customers, the MOUs signed by the parties lack a joint procurement plan aimed at satisfying the customers. Plans to facilitate joint drug procurement planning, sharing stock position reports and annual national drug needs to avoid over or under supply to the common customer is lacking. The MOU mentions delivery of drugs, storage and payment of handling fees on delivery. An effort to coordinate procurement with 3rd parties has been advocated by the NMS management with the MOH promising to take it up.

¹ Refer to item 4.1.1 Para. 4

The absence of coordination of joint procurements leads to the third parties delivering items that had already been stocked by NMS thus creating duplication as reflected in table 11:

Table 11 List of NMS items which are third party duplicated as at 15th Jan 2007

No	Description	Status of NMS Stock (months)as at 15.01.2007
1	Ciprofloxacin Tab 500mg	Equivalent to 1.2 months available
2	Penicillin, Benzathine benzyl 2.4MU/1.44g	1,600,000 (to expire 28/2/07) available.
3	Chloroquine 200mg base/5ml	Global Fund- Equivalent to 2 months available
4	Pyrimethamine 25mg+sulfadoxine 500mg	Equivalent to 7 months available
5	Chloroquine 150mg base	Equivalent to 0.8 months available
6	Water for injection 10ml	Equivalent to 2.3 months available
7	Acyclovir 5%	Equivalent to 10 months available
8	Chlorhexidine Gluconate 20% scrub	Equivalent to 2 months available
9	Oral rehydration salts for 1Lt, 27.9g	Global Fund Stock -Equivalent to 11months available
10	Acetylsalicylic acid 300 mg	Equivalent to 1 month available
11	Ketoconazole 200mg	Equivalent to 0.5 months available
12	Aciclovir, 200mg	Equivalent to 13 months available
13	Nystatin	4 months available
14	Praziquantel 600mg	Equivalent to 38 months available
15	Mebendazole, 100mg	Equivalent to .5 months available
16	syringe disp. hypodermic Luer 2ml	Injection Safety stocks for selected districts available
17	Syringe disp. hypodermic Luer 5ml	Injection Safety stocks for selected districts available
18	Wool cotton B.P. 500g	Equivalent to 2months available
19	Set infusion adult, 15-20 drops/ml, 120cm	Equivalent to 34months available
20	Gauze W.O.W hydrophilic 90cm x 50m	Equivalent to 1.5 months available
21	Cannula intravenous, with inj. port & stopper 18G	GF Stock Equivalent to 16 months available
22		No data for 2008
23		No data for 2006
24		No data for 2005

Source: Annual Procurement Report, 2006/07

As seen in table 11, on 15th January 2007 when 3rd parties made deliveries, NMS had stock of praziquantel enough to last 38 months; Set infusion adult to last 34 months; Cannula intravenous to last for 16 months and Aciclovir to last 13 months. In all the four cases NMS had already stocked the same items above the allowable level of 12 months.

The cause of such gross duplications was the absence of clearly spelt out guiding terms for coordination on the supply of drugs in the MOU. Failure to jointly agree on the estimated national drug needs for the treatment of various diseases, which all the procurement parties would target to fulfill, leads to unfocussed and disproportionate stocking of drugs.

The effect is that NMS locked up their funds by stocking similar drugs to those later delivered by the 3rd parties. The funds would have been used to stock other drugs which were in short supply. The excess drugs delivered are prone to expiry yet people are dying in the countryside of treatable diseases. There is also wastage of financial resources in the storage and destruction costs associated with these expired drugs. NMS drug procurement planning is distorted by the unpredictable deliveries by third parties.

4.3 **HANDLING OF EXPIRED DRUGS**

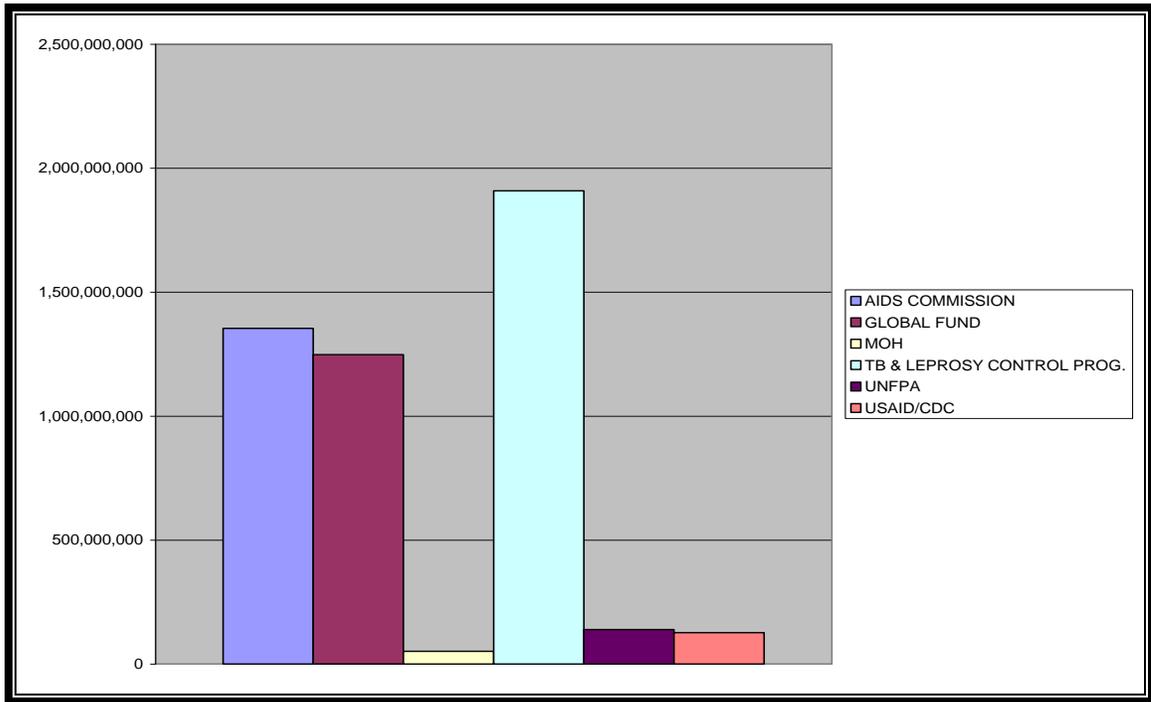
4.3.1 **Sources of expired drugs**

The NMS policy is that only stocks that have at least three or more months of remaining shelf life shall be issued out for sale to customers. Stocks with less than 3 months remaining shelf life will only be issued upon customer request or after consultation with the customer who confirms that the drugs will be fully consumed before expiry.

However, a review of the expired drugs records submitted to the Ministry of health by 100 (one hundred) Government health centres country wide indicated that 46% of the expired drugs were delivered by NMS while the balance of 54% accounted for those donated directly to DHO and health centres and others procured from private pharmaceutical companies.

An analysis of the expired medical drugs destroyed by NMS in November 2008 reveals that 82 % were third party supplies as analyzed in figure 4 below:

Figure 4 Analysis by source of 3rd party expired stock destroyed in November 2008 by NMS



OAG Analysis

The analysis of the expired drugs by disease type it treats reveals that 60 % were for treatment of other diseases other than malaria. The reason for overstocking drugs of less common diseases was not explained.

The expiry of the drugs which expired in the NMS premises' was a result of excess stocking of slow moving drugs procured by NMS and third parties. Third parties could simply be attempting to absorb donor funds through buying any drug just to fulfill accountability purposes. Drugs are also procured in excess as a result of improper coordination between NMS and third Parties.

4.3.2 Storage of Expired Drugs

According to the Ministry of Health Guidelines, expired drugs should be well kept and especially segregated from active medicines¹.

However, the audit team established that, in many facilities countrywide, expired drugs were not well kept. The Director of Health services raised this concern in his communication to District Health Officers and Hospital Medical Superintendents in the circular dated 3rd April 2008, "..... In many of the facilities, these expired items are not well kept or segregated from the active medicines".

Expired drugs at Kabarole District Health Office were simply dumped in the open space outside the already filled up store as shown in the photo below. At Mbarara District headquarters, the expired drugs were stored in a container close to District Health Officer's office without a defined programme of evacuation for destruction.



Expired Drugs stores: Photo taken at Kabarole District Health office 19th September 2008

¹ Director of Health services guideline to District Medical Officers and Medical superintendents

This is caused by inadequate health infrastructure facilities country wide, lack of prior planning and guidance from Ministry of health on actions to minimize expiries and handling of the already expired medical products.

The effect is that the expired drugs not properly stored could be causing immense environmental consequences with slow but long term effects. The possibility of expired drugs falling into the hands of wrong persons, who could re-cycle them after repackaging them, cannot be ruled out. This fear was sounded in the communication of the Ministry of Health Director of Health Services to District Health Officers and Medical Superintendents in the circular dated 3rd April 2008, “..... leading to fears that some of these expired products may be mistakenly used”. This was confirmed when the National Drug Authority impounded 1,166kg of expired and substandard drugs being sold in illegal drug outlets in the eight eastern Districts of Soroti, Tororo, Bukedea, Katakwi, Busia, Bukwo, Budaka and Nakapiripirit¹.

4.3.3 **Retrieval and destruction of expired drugs**

According to NMS general guidelines on write-off of expired Drugs chapter 9, destruction of written off drugs should be done at least **every six months**. Ministry of Health has no clear guidelines on how long it takes expired drugs without destruction in health units.

Massive quantities of drugs were noted to have expired and had not been destroyed for years at NMS premises and Health centres country wide. NMS last destroyed a stock pile of the expiries in November 2008 after accumulation for over four years from July 2005 to June 2008. One hundred (100) health centers country wide had submitted list of expired drugs to the Pharmaceutical division of the Ministry of Health by the time of audit. The last nationwide destruction of expired drugs by the MOH was ten (10) years ago in 1993.

The status of how private health facilities handle their expired drugs was not established by this study. However, some of the medical superintendents of Referral hospitals

¹ New vision, Tuesday, 23rd June, 2009, Quarterly Drug inspection report, 2009

indicated that certain private pharmacies donate drugs with short shelf life to government facilities with a hope that they would be consumed by the many patients before expiry.

The causes of non prompt destruction of expired drugs in public health units are: lack of capacity of health units to individually dispose off expired drugs because of strict environmental compliance requirements for destruction; lack of clarity on the responsible Authority for destruction of expiries in health facilities country wide; logistical difficulty in accessing the only Ministry of Defence facility in the country located in Nakasongola; and the high cost of destruction per tonne of drugs.

The responsibility for the retrieval of expired drugs from health facilities country wide is not clearly defined. All the 32 respondents interviewed point at either NMS or Ministry of Health as the authority responsible. Although the Ministry of Health carried out national retrieval and destruction ten (10) years ago, the officials say, it was based on the Ministry of Health assuming responsibility simply as a mother ministry responsible for health. NDA is responsible only for the drugs impounded by them during inspections up to one hundred (100) kgs. Any excess is the responsibility of the person whose drugs were impounded. All destruction must be done under the supervision of NDA.

There are also no clear guidelines and criteria designed to ensure drugs that expired in the up country health centres were retrieved for destruction.

The effect of these uncertainties and denial of responsibilities are that millions of shillings are spent on storage and remuneration of additional manpower to handle expired drugs storage; and there is also misuse of the space which could otherwise be beneficial for the storage of good drugs. Drug suppliers such as NMS, Donors and private pharmacies may utilize this lacuna to shift the responsibility for destruction to health facilities. There is the risk that desperate patients could be tricked into buying repacked expired drugs from illegitimate drug outlets after failing to get genuine drugs from government health centres. The environmental effect of these expired drugs could be taking a gradual toll on the country which will be detrimental in future.

CHAPTER 5

CONCLUSIONS

5.1 MEETING CUSTOMERS' REQUIREMENTS

5.1.1 Capacity to supply ordered quantities

As a result of failure to supply all the drugs ordered by health units, health workers are greatly frustrated as they cannot provide convincing explanations to the patients who come for treatment only to go back home untreated. Patients in the countryside who do not have alternative treatment options, may buy drugs from any source regardless of its legitimacy or resort to traditional treatment.

5.1.2 Certificate of drug non-availability

Although the NMS management claims that they promptly issue certificates of non-availability this is contradicted by the officials in charge of the health centres. The actual situation remains to be investigated further.

5.1.3 Response to Customers' orders

NMS does not have a clearly spelt out policy on the standard time it should take to process a customer order from receipt to delivery at customers' District or personal collection from at NMS premises, yet it would be instill professionalism and efficiency in the process.

5.2 PLANNING, NEEDS ASSESSMENT AND COORDINATION

5.2.1 Procurement Planning

NMS has not been procuring drugs according to realistic annual procurement plans. The result of this is excessive stocking of slow moving drugs, just waiting to expire, while fast moving drugs are procured in insufficient quantities, creating stock outs.

5.2.2 **Buffer stock**

NMS does not comply with the replenishment policy in procuring drugs; as a result, they are not able to maintain buffer stocks to avoid stock outs. This has led to the failure by NMS to meet customer orders as placed according to the requirements of the health units’.

5.2.3 **Stock level of drugs**

NMS stocks some drugs in excess of the one year’s requirement while others are understocked. The result is the expiry of drugs and medical supplies as evidenced by the huge stock of expired drugs within health centres country wide and that which was destroyed by NMS. The expiry of the drugs further denies the citizens the needed drugs for treatment, or, worse still, exposes them to the hazards of utilizing the expired drugs unwittingly.

5.2.4 **Needs assessment in planning**

While NMS duly draws up the estimates of the drugs to be procured during the procurement cycle, in reality, their computation of AMC is based on the inaccurate data of actual drugs sold by NMS within the previous six months. Using this approach, the customer orders which are not considered in the estimates are left out from the computation in the projections of the drugs to be procured. Only the limited sales by NMS based on the existing stock, and not the total needs of the customers as per their orders are taken in account. NMS, therefore, does not keep enough stock of drugs to meet the customers’ continuous consumption needs. The in-input data for the needs assessment is, therefore, inaccurate. The effect is seen in the stock-outs and excessive stock balances of various drugs.

5.2.5 **Coordination in procurement of drugs between NMS and third parties**

The MOUs lack clear terms of coordination related to joint procurement planning. The omission has led to un-coordinated procurement of drugs which results in duplications of certain drugs in excess quantities, leading to the expiry of such drugs and causing

avoidable storage costs. It also leads to inadequate provisions for the procurement of fast moving drugs in appropriate quantities; in which case, NMS fails to meet the demands of its clients.

5.3 **HANDLING OF EXPIRED DRUGS**

5.3.1 **Sources of expired drugs**

The most significant source of expired drugs is NMS, although half of the expiries are from other sources. Most of the expired drugs are not for the treatment of malaria. The rationale behind the overstocking of drugs of less common diseases, which ultimately expires, remains unclear.

5.3.2 **Storage of expired drugs**

In many health centres countrywide, expired drugs are not well-kept. These expiries end up in the hands of wrong persons, who re-cycle them after repackaging. This was confirmed by the National drug Authority inspection reports. The inadequate health infrastructure facilities country wide, lack of prior planning and guidance from the Ministry of Health on actions to be taken to minimize the expiries and handle the already expired medical products is partly the problem.

5.3.4 **Retrieval and destruction of expired drugs**

Expired drugs both at NMS premises and at health centres country wide remained for an average of 6 (six) years without destruction, contrary to the recommended destruction period of after every six months following write off. The effect is that the expired drugs, if not properly stored, may cause environmental risks whose consequences might be immense, slow and long term. Besides, millions of shillings are spent on the storage and the remuneration of additional human resource to handle expired drugs. The space occupied by the expired drugs could also be better utilized to store good drugs.

CHAPTER 6

RECOMMENDATIONS

6.1 CAPACITY TO SUPPLY ORDERED QUANTITIES

- 6.1.1 NMS should supply drugs in the quantities ordered by the health centres in compliance with the Act and avoid supplying drugs not ordered by health centres.
- 6.1.2 NMS should use appropriate data to procure the right type and quantities of drugs to meet customer requirements.
- 6.1.3 The management of NMS should put in place a system and develop staff capacity for collection, processing and use of appropriate data for decision-making and in conducting the needs assessments.
- 6.1.4 NMS should enhance the coordination between the procurement and stores departments to ensure that appropriate linkage is developed between stock replenishment and the procurement of drugs.

6.2 CERTIFICATE OF DRUG NON-AVAILABILITY

- 6.2.1 NMS should develop quick response mechanisms to avail the certificates of non-availability of drugs to health centres so that they may save lives by procuring drugs from alternative sources, which option can only be exercised after NMS has permitted them.
- 6.2.2 NMS should consider introducing an efficient and effective drug information inquiry desk to enable health centres to obtain information on the availability of drugs.

6.3 RESPONSE TO CUSTOMERS' ORDERS

- 6.3.1 The NMS Management should develop a sales policy benchmarked to best practice in

the industry to stipulate the time for processing and delivery of customer orders. This will eliminate unnecessary delays in the processing and delivery of drugs to health centres. It will also compel NMS staff to promptly process customer orders to avoid the negative effects of the delays.

6.3.2 NMS should consider opening regional centres from which customers could personally collect their individual orders. NMS would then concentrate on replenishing the regional stores periodically to ensure that no stock outs occur. This will enable NMS to be customer focused at the regional level, in line with their core value. At the national level the focus will then be concentrated on replenishing the regional centres as has been the normal practice.

6.4 **PROCUREMENT PLANNING**

6.4.1 NMS should place orders to suppliers well in time to ensure that stock is replenished timely for all categories of drugs and medical supplies.

6.4.2 NMS should develop strict monitoring mechanisms to ensure compliance with company policy, rules and regulations to reduce staff inefficiencies. This should be accompanied with intensive staff sensitization to enable them to appreciate the benefits of compliance and the consequences of non-compliance with the set company policies on the core objectives of NMS as stipulated in the Act.

6.4.3 NMS should enhance its capacity to generate annually estimates of national drug needs to guide them in procuring sufficient quantities to hold in stock and for use by other stakeholders in accordance with the NMS Act.

6.4.4 NMS should step up efforts to address the high staff turnover which reduces the capacity of the corporation to perform arising from staff being continuously on the learning curve, which affects performance. A reward and motivation policy put in place by the management is a step in the right direction.

6.5 **BUFFER STOCK**

- 6.5.1 NMS should revise and enforce the buffer stock policy to match the response time from suppliers so as to avoid stock outs. This would minimize the capital locked in idle stock for four or two months and release funds to stock other fast moving stocks.
- 6.5.2 NMS should prioritize drug procurement to ensure compliance with the stock replenishment policy and be in conformity with the requirements of the MOH policy on essential drugs as stipulated in EMLU, 2007. This policy requires that all items of medicine listed for health centre levels up to and including Hospitals be available at all times in NMS stores. This will save more lives which could be lost due to stock outs in health centres countrywide.

6.6 **STOCK AT NATIONAL MEDICAL STORES**

- 6.6.1 NMS should develop a market strategy for their stock of medical products to health practitioners in health centres in close collaboration with the Ministry of Health. It should take the form of sensitization programs to help them synchronize their choice of the health products which patients consume, in line with the drug procurement plan of NMS.
- 6.6.2 NMS should utilize the health and drug information from the MOH and other stakeholders. The MOH should endeavor to improve the capacity of Health Management Information System (HMIS) to gather and generate health and drug information that can be effectively shared by NMS and other stakeholders for appropriate health planning.

6.7 **STOCK AT HEALTH CENTRE STORES**

- 6.7.1 NMS and MOH collectively should advocate for NMS to be mandated and allocated funds directly to deliver all drugs to the various health centres according to EMLU, 2007 based on the disease information available with MOH. This will eliminate the diversion of funds to other non drug items by the health centres. It will also eliminate the complications arising from lack of capacity by the health units to generate drug procurement plans as well as remove unnecessary delays in the current drug ordering system. Health units

could then order only drugs not automatically delivered by NMS due to exceptional disease circumstances unique to the health centres.

6.7.2 NMS should develop a regular practical drug distribution pattern in the regions so that health centres can predict delivery times to enable them plan for placing orders to match the NMS delivery pattern. This will eliminate stock outs in the health centres caused by irregular supplies by NMS.

6.7.3 NMS and MOH should enhance their information sharing mechanisms amongst the health centres, NMS and Ministry of Health on Health Management Information, particularly concerning drug usage and stocking positions. This will enhance informed planning by all parties.

6.7.4 NMS should streamline their distribution mechanism to seal the loopholes leading to the pilferage of drugs during distribution as reflected in the forensic audit report.

6.8 **NEEDS ASSESSMENT IN PLANNING**

6.8.1 The NMS management should ensure that all customer needs are catered for and that data from orders are used (both supplied and not supplied) in carrying out the needs assessments in procurement planning. This will ensure that NMS avoids stock-outs, under stocking and minimizes drug expiries.

6.8.2 The NMS management should institute controls to check non compliance with the Stores Management and Operations Manual. This will check the non-commitment of staff in the implementation of the existing manual. Prompt amendments should be made to operational manuals to make them relevant in addressing the current challenges instead of circumventing procedures to handle eminent challenges which are not provided for in the manual.

6.9 **COORDINATION BETWEEN NMS AND THIRD PARTIES**

6.9.1 The NMS management should champion the efforts to cause the parties to amend their

MOUs to incorporate joint procurement planning and the sharing of stock position reports to encourage the stocking of drugs in adequate quantities. This will remove duplicate deliveries, expiries, stock deficiencies and enhance the coordination of procurement of drugs to satisfy the common customers.

6.9.2 Both parties should use national drugs needs to be provided by the quantification committee of NMS as the basis for the procurement of drugs. They should apportion their procurement targets to fulfill the customers' needs. This will address the concern of NMS regarding its drug procurement planning which has been hitherto distorted by the unpredictable deliveries by third parties.

6.9.3 NMS should advocate for the creation of a forum for all health practitioners and suppliers of drugs to health centres (NMS, Donors and private pharmacies)¹ under the auspices of the MOH to discuss the challenges of drug supply and utilization at health centres. Issues such as excessive expiry of certain drug categories, responsibility for the safe management of expired drugs, national drugs needs assessment, etc could be addressed. At this point each supplier would know what share of the drugs market their sector controls/commands. This would help to control the influx of various types of drugs in health centres regardless of need and fix responsibilities for expiries appropriately. The effectiveness of the policy of availability of essential drugs at health centres could be discussed in light of frequent stock outs at health centres.

6.10 **HANDLING OF EXPIRED DRUGS**

6.10.1 NMS should undertake a study to establish the circumstances leading to the expiry of some of the drugs they deliver to health centres yet their deliveries are not of short shelf life.

¹ Refer to figure 1, page 13, levels B & C

6.10.2 NMS should request MOH to commission a study to establish why other organizations donate drugs directly to health centres for non-common diseases which later just expire. This will help to check the intention of dumping drugs destined for expiry into Uganda.

6.11 **STORAGE OF EXPIRED DRUGS**

NMS should use their representation in the Technical Review meeting chaired by MOH to advocate for MOH to develop planning guidelines on drug usage to minimize expiries and proper storage of the already expired medical products in health centres countrywide. This will also help to optimize the usage of the existing health infrastructures.

6.12 **RETRIEVAL AND DESTRUCTION OF EXPIRED DRUGS**

6.12.1 NMS could take up the responsibility of retrieval and subsequent destruction of the drugs delivered by them to the health centres as a matter of corporate social responsibility on the part of NMS, as the single major source of expired drugs in health centres countrywide. This would be in line with their core value: "corporate social responsibility" and "customer focus." They could utilize their available transport system (return trip on delivery) and their proximity advantage to the Nakasongola Incineration point.

6.12.2 Health units should take up the responsibility for the destruction of those expired drugs procured and donated directly to them; or

6.12.3 NMS should appropriately share the cost for the destruction of expired drugs with the responsible third parties and the health units to destroy the expired drugs piled at the health units.

6.12.4 NMS should use their representation in the Technical Review meeting chaired by MOH, to advocate for a policy to stipulate the time frequency for the destruction of written off drugs in health centres. This will provide clear guidelines on how long the expired drugs could be kept in health units without destruction.

6.12.5 NMS should use their representation on the NDA board to advocate for NDA to stipulate alternative means of drug destruction which may be affordable for Health Units. This is to address the lack of capacity at the health units to individually dispose of expired drugs promptly in compliance with NEMA environmental requirements. It would also remedy the logistical difficulty in accessing the only Ministry of Defence facility in the country located in Nakasongola and the high cost of drug destruction per ton.

6.12.6 NMS should further use their representation on the NDA board to advocate for NDA to enhance their campaign in sensitizing the health units on the procedure for the destruction of expired drugs countrywide. This should clearly bring out the fact that destruction must be done by designated service providers supervised by NDA. This will clarify on the responsible Authority for the destruction of expiries in health facilities country wide.

John F.S. Muwanga

AUDITOR GENERAL

KAMPALA

25TH MARCH 2010

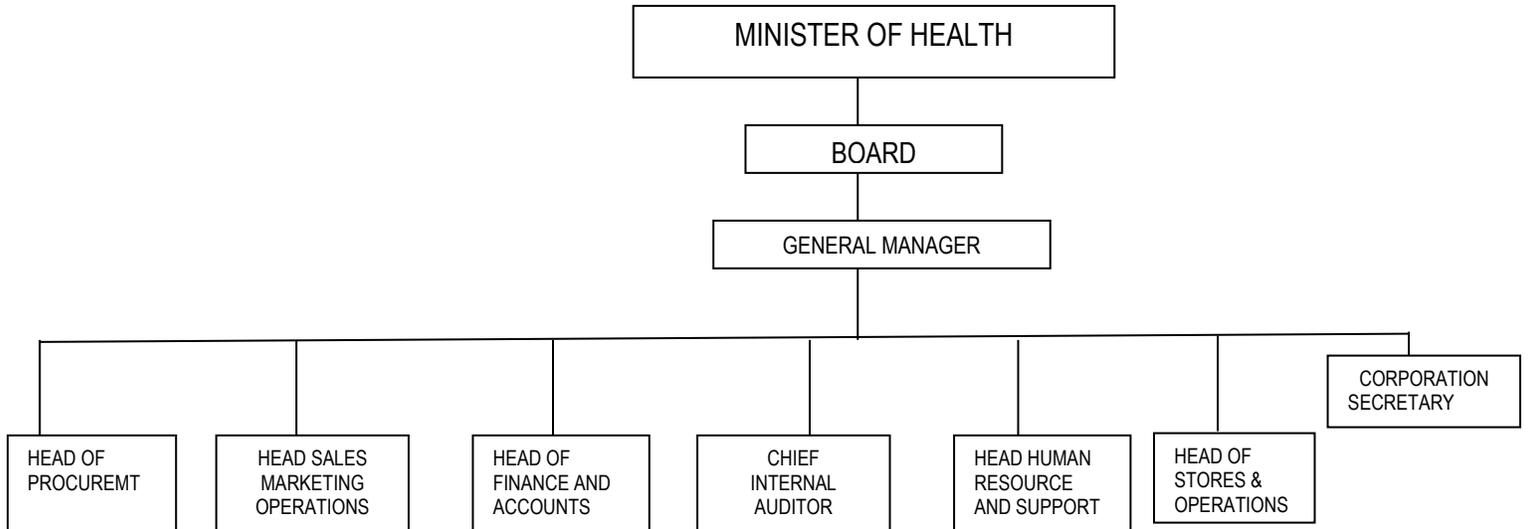
GLOSSARY

1. **ABC Classification**- This refers to annual sales, lost sales and increase or decrease in market demands as follows:
 - A** Category is items that contribute 80% of sales turnover
 - B** Category is items that contribute 15% of sales turnover
 - C** Category is items that contribute 5 % of sales turnover
 - D** Category is items that are specific for NMS Kampala branch and other special requirements.
2. **Core credit line drugs:** These are items that are “a must have” in all Health Centres in Uganda; they are also items that are used up to Level II Health Centres. They were also making part for the List of items agreed upon by the MoH to supply under the Credit line arrangements (financial year 2008/2009 and back)
3. **Essential drugs**-Drugs listed in Essential Medicines list for Uganda, EMLU,2007
4. **Non core credit line drugs:** These are items that **may** be needed at Health Centres in Uganda; A Health Centre II may function well without them; They were also making part for the List of items agreed upon by the MoH to supply under the Credit line arrangements (financial year 2008/2009 and back)
5. **Obsolete items** – are defined as items which have not been sold for more that 3 years, and have been declared by the NMS inventory team as obsolete on a case by case basis.
6. **Other priority lists:** Refers to any product that does not belong to the priority products, e.g. Medical Instruments, Orthopedic supplies, Slow moving stock, etc
7. **PHC products** All products requested for by Health Centres that are not part of those supplied under the Credit Line arrangement
8. **Pick quantity:** means the quantity of drugs available for sale at a given point in time
9. **Priority lists-** Priority products Refers to the “Core products”, the “Non Core products” and the “PHC products”

10. **Stock-cover (in months):** means the estimated number of months the stock of drug available on hand can sustain customer demands before it runs out of stock.
11. **Third Parties-** Are development partners under specific health programmes from whom NMS receives medical supplies for storage and distribution to health facilities in accordance with delivery schedules prepared by MOH.

APPENDICES

APPENDIX I ORGANISATIONAL STRUCTURE OF NMS



APPENDIX II: DOCUMENTS REVIEWED

(a) At NMS;

- The National Medical Stores Act, 1993 (cap. 207),
- The Organization Structure as at 27-05-08
- Minutes of the Board meetings, June, 2005- June, 2008.
- Strategic Corporate Plan, 2007-2008 and 2009-10
- Annual Procurement Plans, 2005/06-2009/10
- Annual Procurement Reports, 2005/06-2007/08
- Quarterly Internal Audit Reports, July 2007- June 2008
- Stores periodic management reports, 2005/06-2007/08
- Procurement and Disposal Procedures Manual, December 2004
- Stores Management Operations Manual, 16-10-2001
- Financial reports and budgets, 2005/06-2007/08
- NMS sales policy and procedure guidelines, not dated
- The Human Resources Manual, 26-02-2004
- Memorandums of Understanding (MOU's) between NMS and GOU, Global Fund, Danida and Centre for Disease Control

(b) At the District Health Offices, Referral Hospitals and Health Centre IV's

- Essential Drugs and Health supplies Order Forms for years 2005/6 to 2007/8
- NMS delivery notes for years 2005/6 to 2007/8
- NMS packing lists for years 2005/6 to 2007/8
- Tax invoices for years 2005/6 to 2007/8
- Certificates of non-availability for years 2005/6 to 2007/8 (Not seen at Health centres)
- Goods Received Notes for years 2005/6 to 2007/8
- List of expired drugs for the period 2003 up to 19th Sept,2008

(c) At the Ministry of Health headquarters-Kampala

- Malarial drug stock tracking report the period 2006 to 2008
- Morbidity data for the period 2006 to 2008
- Delivery records for the period 2006 to 2008
- Malarial deaths for the period 2006 to 2008
- Essential medical list for Uganda, EMLU,2007
- List of expired drugs for the period 2003 up to 19th Sept,2008

(d) Other literature reviewed

- Managing drug supply; management science for health, in collaboration with World Health Organization, published by Kumarian press, 1997.
- Uganda Bureau of Statistics abstract of June 2009
- National drug Policy and Authority Act, Chapter 206

**APPENDIX III ANALYSIS OF SOURCE OF 3RD PARTY EXPIRED STOCK
DESTROYED NOVEMBER 2008 BY NMS**

S/N	Owner/Donor	Amount	%
i	AIDS COMMISSION	1,354,328,356	28
ii	GLOBAL FUND	1,247,678,348	26
iii	MINISTRY OF HEALTH	51,478,853	1
iv	TB & LEPROSY CONTROL	1,908,952,500	40
v	UNFPA	139,128,131	3
vi	USAID/CDC	126,558,764	3
	Subtotal	4,828,124,952	100

**APPENDIX IV ANALYSIS OF REDUNDANT STOCK AT NMS AS END OF
JULY 2009**

S/N	OWNER	COUNT	VALUE	% OF VALUE	% OF ITEMS
	NMS stock	299	1,437,148,607	82	68
	Third Party	141	321,738,711	18	32
		440	1,758,887,317	100	100

**APPENDIX V MALARIAL DEATH AGAINST ANTI-MALARIAL
STOCK OUT IN HEALTH CENTRES**

Year	Malarial death	Stock out
2006	4,252	5,645
2007	7,003	12,306
2008	4,211	8,254

APPENDIX VI SUMMARY OF MALARIAL DEATHS PER MONTH 2006-2008

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2006	302	289	334	259	425	345	457	393	394	341	301	412	4,252
2007	662	449	418	363	893	410	483	1,286	488	561	458	532	7,003
2008	372	426	570	214	444	487	5	228	296	451	311	407	4,211

APPENDIX VII SUMMARY OF UNITS REPORTING ANTI-MALARIAL STOCK OUTS 2006-2009

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2006	1,957	2,246	2,366	1,792	1,887	1,905	2,322	2,272	2,212	2,309	2,196	2,221	25,685
2007	2,293	6,599	2,437	2,714	2,684	2,630	2,643	2,719	2,495	2,778	2,737	2,764	35,493
2008	2,897	2,715	2,632	2,851	2,632	2,605	2,505	2,263	2,313	2,578	2,229	2,062	30,282
2009	2,237	1,796	1,370	-	-	-	-	-	-	-	-	-	5,403
Total	9,384	13,356	8,805	7,357	7,203	7,140	7,470	7,254	7,020	7,665	7,162	7,047	96,863

APPENDIX VIII SUMMARY of Units with stock outs of anti-malarial 2006-2009

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2006	336	490	335	365	419	499	647	486	454	555	663	396	5,645
2007	526	540	913	619	671	762	647	2,613	1,296	1,017	1,871	831	12,306
2008	962	621	538	612	698	678	672	776	362	897	727	711	8,254
2009	765	600	576	-	-	-	-	-	-	-	-	-	1,941
Total	2,589	2,251	2,362	1,596	1,788	1,939	1,966	3,875	2,112	2,469	3,261	1,938	28,146

