AN ASSESSMENT OF THE PUBLIC SECTOR PHARMACEUTICAL SUPPLY SYSTEM OF THE REPUBLIC OF NAMIBIA

DRAFT

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ACRONYMS

ABC ...............................................................................................................ABC Value Analysis
ADR ...........................................................................................................Adverse Drug Reaction
AIDS ..........................................................................................................Acquired Immune Deficiency Syndrome
ANC ........................................................................................................ Anti-natal Clinic
ART ........................................................................................................... Antiretroviral Therapy
ARVs ......................................................................................................... Antiretrovirals
CDC ........................................................................................................... Center for Disease Control and Prevention
CHS ........................................................................................................... Catholic Health Services
CMS ........................................................................................................... Central Medical Store
DIC ........................................................................................................... Drug Information Center
DTC ........................................................................................................... Drugs and Therapeutics Committee
ELISA ....................................................................................................... Enzyme Linked Immunosorbent Assay
EML ........................................................................................................... Essential Medicine List
FEFO ......................................................................................................... First Expiry First Out
FHI ........................................................................................................... Family Health International
FY ............................................................................................................... Financial Year
GMP ........................................................................................................... Good Manufacturing Practice
GRN ........................................................................................................... Goods Received Note
GRN ........................................................................................................... Government of the Republic of Namibia
GTZ ........................................................................................................... Deutsche Gesellschaft für Technische Zusammenarbeit, GmbH (German Development Service)
HCW ......................................................................................................... Health Care Worker
HIV ........................................................................................................... Human Immunodeficiency Virus
LFTs ........................................................................................................... Liver Function Tests
MIS ........................................................................................................... Management Information System
MOF ........................................................................................................... Ministry of Finance
MoHSS ..................................................................................................... Ministry of Health and Social Services
MSH ......................................................................................................... Management Sciences for Health
NACOP ..................................................................................................... National AIDS Coordinating Programme
NAD ........................................................................................................... Namibian Dollar
NAEC ....................................................................................................... National AIDS Executive Committee
NEMList ................................................................................................... Namibia Essential Drug List
NASOMA ................................................................................................ National Social Marketing Association
NDP ........................................................................................................... National Drug Policy
NGO ........................................................................................................... Non Governmental Organization
NHTC ..................................................................................................... National Health Training Center
NIP ........................................................................................................... National Institute of Pathology
NTP ........................................................................................................... National Tuberculosis Control Programme
NVP ........................................................................................................... Nevirapine
PEP ........................................................................................................... Post-Exposure Prophylaxis
PLHA ....................................................................................................... People living with HIV/AIDS
PMO ......................................................................................................... Principle Medical Officer
PMTCT .................................................................................................... Prevention of Mother to Child Transmission
PSI ........................................................................................................... Population Services International
PSN ........................................................................................................... Pharmacy Society of Namibia
QSL ........................................................................................................... Quality Surveillance Laboratory
RHO ........................................................................................................... Regional Health Office
RDU ........................................................................................................... Rational Drug Use
RMS = Regional Medical Store
RPM Plus = Rational Pharmaceutical Management Plus Program
RTK = Rapid Test Kit
S5 = Schedule 5 Medicines
S6 = Schedule 6 Medicines
S7 = Schedule 7 Medicines
SA = South Africa
SAMF = South African Medical Formulary
SO = Strategic Objective
SOW = Scope of Work
TA = Technical Assistance
TB = Tuberculosis
TVC = Total Variable Cost
UNAIDS = Joint United Nations Programme on HIV/AIDS
USAID = United States Agency for International Development
VCT = Voluntary Counselling and Testing
VEN = Very Essential, Essential Non Essential Drug Classification
WHO = World Health Organization
EXECUTIVE SUMMARY

1. Introduction
Management Sciences for Health (MSH)/Rational Pharmaceutical Management Plus (RPM Plus) Program has received funds from USAID/Namibia under the President’s Emergency Plan for AIDS Relief to assist the Ministry of Health and Social Services to assess the capacity of the government of the Republic of Namibia to meet pharmaceutical management needs in support of expansion of HIV/AIDS programs.

This assessment was to identify constraints and challenges, from a health commodity management perspective related to introducing or expanding access to antiretroviral drugs (ARVs) and propose options for improvement. RPM Plus conducted this indicator-based assessment in October and November of 2003.

2. Methodology
The assessment involved a detailed review of the operations of the Central Medical Store, Oshakati Regional Medical Store, Rundu Regional Medical Store and selected health facility sites to determine their capacity for scale up and expansion of Prevention of Mother to Child Transmission (PMTCT) and ART services and make recommendations for improvement. Structured questionnaires were developed by RPM Plus consultants and Ministry of Health and Social Services (MoHSS) personnel, and these were used to obtain information from key informants. Data on stock management was obtained using data collection forms and a set of tracer drugs.

Twelve (12) health facilities were visited as part of this assessment. The facilities selected had been selected as a facility that would be providing ART and PMTCT treatment and care. These facilities were four hospitals of the Catholic Health Services (CHS) i.e. Andara and Nyangana hospitals, St. Martin’s hospital in Oshikuku and St. Mary’s in Rehoboth; Onandjokwe Lutheran Health Center; and Katutura, Windhoek Central, Walvis Bay, Katima-Mulilo, Rundu, Keetmanshoop and Oshakati Hospitals. The assessments focused on infrastructure for pharmaceutical care activities, staffing, training, selection, quantification, ordering systems, rational drug use, management support systems, availability and management of condoms, Voluntary Counseling and Testing (VCT), PMTCT, and antiretroviral therapy.

The private sector was not reviewed because it was not envisaged to be directly involved in the MoHSS’s pharmaceutical management of HIV/AIDS-pharmaceuticals. Aspects of the private sector will however, be assessed as part of the options development processes for specific interventions such as transport management.

3. Key Findings at Central Level

3.1. Policy and Legal Framework
The Namibia National Drug Policy (NDP) was launched in late 1998, and an implementation strategy completed and published in 2000. Laws affecting pharmacy practice in place include the Pharmacy Profession Act, 1993 and the Namibia Medicines Regulatory Act. Registration and licensing of pharmaceutical personnel and premises (e.g., retail and wholesale pharmacies) is under the control and supervision of the Pharmacy Board of Namibia. The Pharmaceutical Control and Inspections unit under the Pharmaceutical Services Division within the Tertiary Health Care Directorate of the MoHSS is responsible for registration of
drugs in Namibia, and typically takes between three months to two years to register a product. A permit is required for the importation of Schedule 5 to 7 drugs. Currently, ARVs are classified as Schedule 4 drugs but treated as Schedule 7 (narcotics) in order to maintain strict control on their distribution and use.

3.2. Selection
The 3rd edition of the Namibia Essential Medicines List, Nemlist, was updated and printed in March 2003. The Nemlist, formerly called the Nedlist, contains ARVs and includes guidelines on ordering items on the list from the Central Medical Store/Regional Medical Store (CMS/RMS), purchases of items outside the list (Buy-out) and procedures for controlling restricted use items. The list also incorporates level of use classification and VEN classification of medicines. Treatment guidelines have been developed for some specific conditions such as hypertension, STIs, malaria, cholera and ART, however, a comprehensive volume of standard treatment guidelines covering all diseases had not been updated since 1996. The guidelines for ART were developed with significant involvement of public and private practitioners and launched in May, 2003.

3.3. Procurement
CMS has limited capacity to conduct reliable quantification, due primarily to unreliable information on stock balances and inventory control parameters. There is no formal pharmaceutical management information system in place, hence data on consumption of pharmaceuticals and actual requirements of the regions are not routinely collected and monitored by CMS, and are therefore not used as a basis for the quantification of needs. Appropriate systems for quantifying needs at all levels (i.e. CMS, RMS & HF) need to be developed and implemented.

CMS conducts a number of international tenders for different product categories and local tenders and/or direct procurements. This results in a heavy workload on the already understaffed CMS. The tender process is fully localized within the MoHSS without the involvement of the tender board of the Ministry of Finance, except for representation of the tender board on the CMS procurement committee, as is required for other ministries. This shortens the procurement processing time and allows the MoHSS internal control of the process.

Current tender processing procedures are extremely cumbersome and tedious and require revision and the development of an appropriate computerized tender management package to ensure accuracy and speed. Procurement guidelines, donation guidelines and standard tender documents do exist; however they require review to further promote transparency and allow for effective competition. CMS contract prices are on the average 178% of international indicator prices (N=14; Median 101%; Max 673%; Min 8%) giving an indication that CMS does not obtain discounts through the tender process. Tender and contract conditions needs to be revised to promote participation from more competitive suppliers.

3.4. Storage and Distribution
Namibia operates a classical central medical store distribution system with a CMS at Windhoek and two regional medical stores located in Oshakati in the northwest and Rundu in the northeast. Mid and southern Namibia is covered by the CMS directly. Administratively the RMSs are under their various regional health offices and do not have any direct technical or administrative links with the CMS. The relationship between the CMS and RMS is one of
CMS distributes supplies to the two RMSs, all district hospitals, and the two local hospitals and clinics in the Khomas and other surrounding region. Regional medical stores and district hospitals in turn are responsible for distribution to other facilities within their jurisdiction.

Facilities are expected to order products from CMS every six weeks and it usually takes CMS about four weeks to process and deliver the order. Intermittent orders may also be placed by facilities. It was found out that there are no effective systems for deciding when, what and how much to order at the RMS and health facilities, thus most facilities place numerous emergency or intermittent orders within the six week order period. This practice places a heavy burden on the CMS. Inventory control policies and procedures will need to be reviewed and strengthened.

CMS maintains its own fleet of trucks which were reported to be aged and not suitable for the volume of distribution conducted. An in-depth analysis of the transport needs of the system to support the proposed revised inventory control systems will be undertaken and recommendations made.

Stock records are not adequately maintained at all levels of the system. In one RMS, stock records had not been updated for more than two (2) months. At the CMS, physical inventory counts and stock record figures do not correspond, only 34% of records corresponded with physical counts. There are no systems for stock rotation in the medical stores. It is recommended to conduct complete physical inventory counts at all levels and update or introduce stock records. SOPs for store management will be developed and training provided in proper maintenance of stock records.

Drug availability was determined to be good. In the facilities surveyed, an average of 96% of products on the tracer drug list1 used for the assessment was found in stock at the time of the assessment.

3.5. Use
There is no national adverse drug reaction monitoring system and a drug information center for the promotion and dissemination of unbiased information on medicines. A formal system for collecting and collating drug use indicators was designed and disseminated in 2001; however, this was not fully implemented. National drug utilization reviews are conducted annually. Collecting and analyzing drug use indicators nationally will provide valuable information for the management of the pharmaceuticals required for HIV/AIDS programs. Monitoring of ARV use is important to be able to appropriately respond to adverse reactions and the potential development of resistance, and also to evaluate the therapeutic efficacy of treatment regimens and the quality of drugs. This will help ensure an efficient and rational use of pharmaceuticals.

3.6. Management Support

3.6.1. Human Resources
The manpower situation for pharmaceutical management in Namibia is critical. Most vital positions in the pharmaceutical sector are either vacant or have officials serving in acting positions in addition to their primary responsibilities. For example, the position of deputy director of the Pharmaceutical Services Division; is currently occupied by the Head of

1 See Annex 3 for list of tracer drugs
Pharmaceutical Control and Inspections Unit, in an acting capacity. In the CMS, the Chief Pharmacist position and the Procurement and Tenders Pharmacist position are currently filled by foreigners on 2-year contracts. The National Medicines Policy Coordination Unit, which is responsible for policy education, implementation and communication with regions, did not have any staff at the time of the assessment. Most pharmacies in the public sector are staffed by Pharmacists’ Assistants, technologists and/or nurses. There is no in-country pre-service training for pharmacists, and no in-service training programs. There is a two-year training program for Pharmacists’ Assistants at the National Health Training Center.

3.6.2. Monitoring and Evaluation
Monitoring and evaluation is weak with minimal supervision of the pharmaceutical sector and no comprehensive system for managing information for pharmaceutical management in the MoHSS. In April 2001 a set of indicators for pharmaceutical services was designed to serve as the basis of a Management Information System (MIS), this was however not fully implemented. The Pharmaceutical Control and Inspection Unit have only one inspector for the whole country.

3.6.3. Drug Financing and Financial Management
The Ministry of Finance established a “Trade Account” for the Ministry of Health and Social Services to serve as a tool for ensuring continuous availability of drugs in the public sector. This account is financed through annual budgetary allocations and has an authorized capital of N$9.35M. The average annual turnover of the CMS is about N$90M. The CMS does not directly recover the cost of supplies procured and supplied through the system. Supplies are issued to facilities against allocated budgets of the various health facilities. Information on supplies is then provided to the Finance Division of the MoHSS who debit the institution’s account to cover the costs of supplies delivered to them. CMS does not apply a markup to items supplied to institutions but simply issues at cost. The Trade Account has not been appropriately managed in the past leading to a number of problems, including a lack of accurate information on the status of the account and an accumulation of a large deficit. Financial management practices and the accounting function at the CMS needs to be improved.

In FY02/03, total procurement of medicines and supplies at CMS was about N$95M with donations amounting to about N$4M, composed mainly of condoms donated by USAID Namibia. Given a total population of 1.8M\(^2\) million, per capita expenditure on pharmaceuticals and supplies is about N$55 equivalent to about USD9. Compared with other countries in the African Region, Namibia ranks high in per capita government expenditure on health\(^3\). In 2001 per capita expenditure at average exchange rate was US$77, ranking 4\(^{th}\) in the region. Average of the WHO African Region for 2001 is US$25.24. The GRN per capita expenditure on health has been falling rather sharply, from US$103 in 1997 to US$77 in 2001.

Total operating cost of the central medial store as a percentage of total issues is 5.8% and 13.4% of average inventory and total value of inventory losses as a percentage of issues is 6.7% and 15.3% of average inventory. Stock shortages seem to be a major problem at the CMS, forming 90% of total inventory losses. Expired stock was only 0.5% of total issues.

\(^2\) 2001 Census
\(^3\)WHO, 2004; http://www3.who.int/whosis/country/compare.cfm?language=en&country=nam&indicator=strPcGovEOHinUSD2001
4. Key Findings at Health Facility Level

In general there was a lack of communication among facilities and there was no system in place to share lessons learned from implementing PMTCT and ART at the Pharmacy level. There was inconsistent access to standard therapeutic treatment guidelines at pharmacies and a major lack of organized training at all levels. Most facilities have limited access to computers and limited knowledge of their use. There were no written procedures and systems to ensure accountability were lacking, thus making proper practices difficult to enforce. Monitoring and evaluation systems for pharmacies were inadequate, particularly in regions that do not have a regional pharmacist.

4.1. Staffing

Of the nineteen established posts for pharmacists in the facilities assessed, only 39% was filled. 68% of all pharmacists’ assistant posts were filled. Eight (8) out of nine (9) (89%) pharmacist’s assistant posts was filled at the five mission hospitals and 19 out of 31 (61.3%) in the rest of the facilities. There was an establishment for only one pharmacist in the mission facilities and this position was vacant. Cuban volunteers serve in several facilities however; there is a lack of a formal system of introduction and orientation of these volunteers to the system. Many do not know their roles and responsibilities and some are not fully utilized. The lack of qualified professional staff has led to the situation where lower cadres of staff are playing significant roles at some pharmacies.

4.2. Infrastructure

All pharmacies visited will require private counseling areas/facilities for HIV/AIDS patients to ensure privacy and confidentiality. A number of pharmacies will require strengthening of security measures, provision of reliable cold storage and air conditioning, and the provision of adequate secure areas or cupboards for storage of ARVs.

4.3. Procurement

There was no uniform method for quantification of drug needs in the facilities assessed. Eighty-three percent (83%) of facilities used the consumption method, 17% the morbidity method, 17% used a combination of consumption with morbidity and 67% used “general experience” to determine needs. Stock record cards were not adequately maintained and inventory control parameters were mostly outdated and required review. Staff lacked training and skill in accurate recording procedures. Ordering for supplies is made using the CMS “Order Book”. Records of orders are not maintained at the pharmacies since copies of the orders are not maintained at the facility and it takes a while for the CMS or RMS to return the order book to the facility after orders are made. It is common practice for orders to be cut at various levels of the administration thus facilities inflate orders to compensate for the anticipated cuts and other systemic problems.

4.3. Dispensing Practices

Pharmacy staff lack knowledge to appropriately manage HIV/AIDS pharmaceuticals, particularly ARVs and there is inadequate counseling of patients on the use of medications. There is no uniform method for recording information on patients on ARVs at the pharmacy level. Observation of practices in the dispensaries visited showed that only 19% of pharmacy workers informed the patient of the name of the drug and less than half (47%) explained what the drug was being given for. In nearly all (95%) cases the pharmacy worker explained the dose of the medicine and told the patient how long to take the drug in 65% of encounters. The pharmacy workers asked the patient to repeat the instructions in 6% of encounters.
Only 33% of facilities keep a record of prescriptions dispensed and 8% of prescriptions written. There was a system for monitoring drug use in only two (2) (17%) of the facilities assessed. All facilities pre-pack medications for patients.

5. Condom Distribution
Health facilities receive their male and female condoms from the Central or Regional Medical Stores and/or from the National AIDS Coordinating Program (NACOP) Secretariat. The Ministry of Women’s Affairs and Child Welfare is also a source for female condoms. All facilities stated that they had not had any problems with obtaining condoms in the past year with a few indicating that they had too many condoms.

Three facilities did not stock female condoms and some staff members commented that there were no requests for female condoms as they are not as accepted in the community. Clients do not know how to use them and in some instances staff did not know how to explain their use.

Male condoms were typically distributed to clinics or other sections of the facility such as the out-patient, STI, public health, casualty departments and pharmacy dispensing windows. Some hospitals receive requests from community organizations such as clubs, businesses, Regional AIDS Coordinating Programs, Schools, police stations, agricultural projects, or ship inspectors for condoms.

6. Conclusion
For the success of HIV/AIDS programs in Namibia, the existing system for pharmaceutical management will require strengthening so as to ensure that quality pharmaceuticals required to support the various programs are made available in the right quantities, at the right place and at the right time. In particular, CMS and RMS needs capacity built to be able to adequately quantify national requirements, efficiently deliver the commodities to the points of use and monitor the use of these products.

7. Summary of Pharmaceutical Management Indicators

Table 1: Summary of Pharmaceutical Management Indicators

<table>
<thead>
<tr>
<th>No.</th>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>POLICY, LEGISLATION AND REGULATION</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Existence of a national drug policy approved by the government</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>Existence of comprehensive drug control legislation, regulations and enforcement agencies</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>Type of drug registration information system</td>
<td>Manual</td>
</tr>
<tr>
<td>4</td>
<td>Number of drugs registered as at May 2002</td>
<td>1900</td>
</tr>
<tr>
<td>5</td>
<td>Law permitting generic substitution by pharmacists</td>
<td>???</td>
</tr>
<tr>
<td>6</td>
<td>Practice of generic substitution</td>
<td>Yes???</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>FORMULARY/ESSENTIAL DRUGS LIST AND DRUG INFORMATION</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Number of unique drug products on NEMLIST</td>
<td>550</td>
</tr>
<tr>
<td>2</td>
<td>Existence of an official manual, based on the NEMLIST, providing basic drug information to prescribers, revised and published within the last 5 years</td>
<td>No</td>
</tr>
<tr>
<td>3</td>
<td>Existence of drug information centers that provide unbiased and current information to public health decision makers, health care providers and consumers</td>
<td>No</td>
</tr>
<tr>
<td>4</td>
<td>Existence of ART Guidelines, providing basic drug information to prescribers, revised and published within the last 5 years</td>
<td>Yes</td>
</tr>
<tr>
<td>No.</td>
<td>Indicator</td>
<td>Value</td>
</tr>
<tr>
<td>-----</td>
<td>---------------------------------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>5</td>
<td>Percentage of MoHSS health facilities visited with the most current edition of an ART Guidelines</td>
<td>75%</td>
</tr>
<tr>
<td>6</td>
<td>Existence of Clinical Management of HIV/AIDS Guidelines, providing basic drug information to prescribers, revised and published within the last 5 years</td>
<td>Yes</td>
</tr>
<tr>
<td>7</td>
<td>Percentage of MoHSS health facilities visited with the most current edition of a Clinical Management of HIV/AIDS Guidelines</td>
<td>75%</td>
</tr>
</tbody>
</table>

C MINISTRY OF HEALTH BUDGET AND FINANCE – FY02/03

<table>
<thead>
<tr>
<th>No.</th>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MoHSS budget, US$ per capita</td>
<td>$77</td>
</tr>
<tr>
<td>2</td>
<td>MoHSS expenditures on pharmaceuticals (drugs and supplies), US$ per capita</td>
<td>$8.00</td>
</tr>
<tr>
<td>3</td>
<td>Percentage of total government recurrent budget used for MoHSS</td>
<td>12.8%</td>
</tr>
<tr>
<td>4</td>
<td>Percentage of total MoHSS recurrent budget allocated to pharmaceuticals</td>
<td>11.68%</td>
</tr>
<tr>
<td>5</td>
<td>Existence of a system for recovering the costs of drugs dispensed in MoHSS health facilities</td>
<td>No</td>
</tr>
</tbody>
</table>

D MINISTRY OF HEALTH PHARMACEUTICAL PROCUREMENT

<table>
<thead>
<tr>
<th>No.</th>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Existence of a policy limiting MoHSS pharmaceutical procurement to drugs on the NEMLIST</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>Percentage by value of MoHSS drugs purchased through a central procurement system</td>
<td>100%</td>
</tr>
<tr>
<td>3</td>
<td>Percentage of average international price paid for last regular procurement of a set of indicator drugs</td>
<td>178%</td>
</tr>
<tr>
<td>4</td>
<td>Percentage by value of MoHSS drugs purchased through competitive tender</td>
<td>91%</td>
</tr>
</tbody>
</table>

E MINISTRY OF HEALTH PHARMACEUTICAL LOGISTICS

<table>
<thead>
<tr>
<th>No.</th>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Weighted average percent of inventory variation for a set of indicator drugs in MoHSS storage and health facilities</td>
<td>CMS 14.28%, RMS 0.61%, HF 10.43%</td>
</tr>
<tr>
<td>2</td>
<td>Average percent of individual variation for a set of indicator drugs in MoHSS storage and health facilities</td>
<td>CMS 12.39%, RMS 1.55%, HF 28.69%</td>
</tr>
<tr>
<td>3</td>
<td>Average percent of stock records that corresponds with physical counts for a set of indicator drugs in MoHSS storage and health facilities</td>
<td>CMS 34%, RMS 57%, HF 70.39%</td>
</tr>
<tr>
<td>4</td>
<td>Average percent of time out of stock for a set of indicator drugs in MoHSS storage and health facilities</td>
<td>CMS 3.40%, HF 0.94%</td>
</tr>
<tr>
<td>5</td>
<td>Average percent of a set of unexpired indicator drugs available in MoHSS storage and health facilities</td>
<td>CMS 91%, RMS 100%, OMS 91%</td>
</tr>
</tbody>
</table>

F PATIENT ACCESS AND DRUG UTILIZATION

<table>
<thead>
<tr>
<th>No.</th>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Population per functional MoHSS health facility that dispenses drugs</td>
<td>??</td>
</tr>
<tr>
<td>2</td>
<td>Population per licensed pharmacist or pharmacy technician in the public sector</td>
<td>260.979</td>
</tr>
<tr>
<td>3</td>
<td>Population per authorized prescriber in the public sector</td>
<td>??</td>
</tr>
<tr>
<td>4</td>
<td>Average number of drugs prescribed per curative outpatient encounter in MoHSS health facilities</td>
<td>2.51</td>
</tr>
<tr>
<td>5</td>
<td>Percentage of outpatients prescribed antibiotics at MoHSS health facilities</td>
<td>75%</td>
</tr>
<tr>
<td>6</td>
<td>Percentage of pharmacy worker gave the name of the drug</td>
<td>19%</td>
</tr>
</tbody>
</table>

4 Oshakati Medical Stores did not have updated stock cards to enable computation of these indicators.
<table>
<thead>
<tr>
<th>No.</th>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Percentage of pharmacy worker explained what the drug was being given for</td>
<td>47%</td>
</tr>
<tr>
<td>8</td>
<td>Percentage of pharmacy worker explained the dose of the medicine</td>
<td>95%</td>
</tr>
<tr>
<td>9</td>
<td>Percentage of pharmacy worker told the patient how long to take the medicine for</td>
<td>65%</td>
</tr>
<tr>
<td>10</td>
<td>Percentage of pharmacy worker asked the patient to repeat the instructions</td>
<td>6%</td>
</tr>
<tr>
<td>11</td>
<td>Percentage of the time that the drug was available to dispense to patient</td>
<td>95%</td>
</tr>
</tbody>
</table>

**G PRODUCT QUALITY ASSURANCE**

<table>
<thead>
<tr>
<th>No.</th>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Number of drug products tested during the past year:</td>
<td>63</td>
</tr>
<tr>
<td>2</td>
<td>Use of WHO certification scheme</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>Existence of formal systems for reporting:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Product quality complaints</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>b. Adverse drug reactions (ADRs)</td>
<td>No</td>
</tr>
</tbody>
</table>
CHAPTER 1:
INTRODUCTION

1.1 Background
The key functions of any pharmaceutical supply system are selection, procurement, distribution and use. In addition, these functions should be well supported by general management, an effective organization, adequate finance and human resources. During the assessment, several persons responsible for the above key functions were consulted. Information received from these persons, general observations and review of documents available at the Ministry of Health and Social Services and the Central Medical Stores (CMS) in Windhoek were used in assessing the public sector pharmaceutical supply system in Namibia.

Commodities for managing HIV/AIDS programs such as antiretroviral therapy (ART), prevention of mother to child transmission (PMTCT) and voluntary counseling and testing (VCT), must be fully available and accessible to all clients that require them. A wide range of commodities is required, including ARVs, HIV tests, supplies for care of opportunistic infections and other HIV-related illnesses, palliative care (including morphine), laboratory reagents and condoms5. The WHO 3x5 strategy stipulates, that to achieve full access to commodities by all those eligible for ART, countries should have:

- Clearly defined and well performing logistics management information systems
- Secure transportation to get the commodities close to where the patients live
- Integration of ART supplies into the existing medical supply system (provided it is secure and reliable – if not, a separate system might be necessary in the early stages of scale-up)

Although drugs and supplies tend to be available at the facilities, the inefficiencies of the public pharmaceutical management system of Namibia have been identified as a significant potential threat to the success of the MoHSS planned scale up of HIV/AIDS activities. This situation is due to several factors such as the lack of personnel, poorly defined organizational and management structures and procedures, inadequate inventory control management systems, dispatch and distributions systems; all resulting in a lack of reliability of the supply system to be able to accommodate the increased load envisaged under the plan to scale up and expand HIV/AIDS activities in the MoHSS.

To address these weaknesses, the USAID Namibia PHN strategy proposes to provide support to the MoHSS for an assessment of the CMS system at the central and regional levels and provide logistics management training and long term technical assistance to the CMS, so that central managers can serve as trainers of trainers at the regional and local level. USAID will also assist with the installation of a fully computerized forecasting and distribution system which links the national office to the regional-level units. This support is aimed at building capacity for pharmaceutical, and commodity management and logistical systems, so that capacity will be developed for management of ARVs and OI drugs, condoms and other related HIV/AIDS commodities, working with the MoHSS Central and Regional Medical Stores and NGO sector as appropriate.

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5 WHO 3x5 Strategy
In the light of the forgoing, this assessment was conducted to identify the weaknesses in the pharmaceutical management system, so as to be able to design interventions that will ensure that as HIV/AIDS programs scale-up, there will be reliable systems to support the program by ensuring continuous availability and access to the commodities required to support the scale up.

Even though the capacity to manage HIV/AIDS-related commodities is the primary focus of this assessment, it is important to note that there are no separate systems and procedures employed for managing ARVs or commodities required for PMTCT. A number of HIV/AIDS-related pharmaceuticals have been included in the tracer list despite limited to use by pilot projects, as this is the primary focus of interventions to be developed.

1.2 Country Overview
Namibia is located in Southern Africa, bordering the South Atlantic Ocean, between Angola and South Africa with Botswana to the East. Formerly known as German Southwest Africa, and South-West Africa, the country obtained independence from South Africa in 1990. There are thirteen (13) administrative regions and the capital is Windhoek. Namibia covers a total land area of 825,418 square kilometers with mostly high plateau terrain, with the Namib Desert along the coast and the Kalahari Desert in the east. The climate is desert, hot and dry with a sparse and erratic rainfall pattern. Natural resources include diamonds, copper, uranium, gold, lead, tin, lithium, cadmium, zinc, salt, vanadium, natural gas, hydropower and fish. There are suspected deposits of oil, coal and iron ore.

Figure 1: Map of the Republic of Namibia

Source: CIA Fact book: Namibia, 2004

The official language of Namibia is English and Afrikaans is the common language of most of the population. Indigenous languages include Oshivambo, Herero and Nama. Literacy
level is relatively high with 84% of the population over 15 years able to read and write. (Male 84.4% and Female 83.7%)

1.2.1 Demographics
The estimated population as at July 2003 was 1,927,447 composed of 42.5% under 15 years, 54% between 15 and 64 years and 3.5% over 65 years. The median age is 18.3 years; male 17.9 and female 18.6 years. Estimated population growth rate was 1.49% (2003est) with a birth rate of 34.1 births per 1,000 population and a death rate of 19.17 deaths per 1,000 population. Life expectancy at birth is 42.77 years, 44.27 years for males and 41.22 years for females.

Chart 1: Population Age Structure of Namibia

Ethnic groups are made up of 87.5% black, 6% white and 6.5% mixed. About 50% of the population belongs to the Ovambo tribe and 9% to the Kavangos tribe. Other tribes are: Hetero (7%), Damara (7%), Nama (5%), Caprivian (4%), Bushmen (3%), Baster (2%), and Tswana (0.5%). Christians form 80 to 90%, with at least 50% being Lutheran, and indigenous believers 10 to 20%.

1.2.2 Economy
The Namibian economy is heavily dependent on the extraction and processing of minerals for export. Mining accounts for 20% of GDP. Rich alluvial diamond deposits make Namibia a primary source for gem-quality diamonds. Namibia is the fourth-largest exporter of non-fuel minerals in Africa, the world's fifth-largest producer of uranium, and the producer of large quantities of lead, zinc, tin, silver, and tungsten. The mining sector employs only about 3% of the population while about half of the population depends on subsistence agriculture for its livelihood. Namibia normally imports about 50% of its cereal requirements; in drought years food shortages are a major problem in rural areas.

A relatively high per capita GDP of $6,900 (2002 estimate of purchasing power parity), hides the great inequality of income distribution; nearly one-third of Namibians had annual incomes of less than $1400 in constant 1994 dollars. As of 2002, 50% of the population was

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reported to live below the poverty line. The Namibian economy is closely linked to South Africa with the Namibian dollar pegged to the South African rand.

Namibia had a GDP of US$13.15 billion in 2002 with a growth rate of 2.3%. GDP composition by sector was agriculture 11%, industry 28% and services 61%. The total labor force is 725,000 in the following sectors, agriculture 47%, industry 20% and services 33%, with a posted unemployment rate of 35%.8

1.2.3 Transport Infrastructure
Transport infrastructure can be ranked as good. There exists a total of 66,467km of highways with 9,172km paved and a total of 2,382km of railroads. The two main ports are the port of Luderitz and Walvis Bay. There are 135 airports in the country with 21 of them having paved runways.9

1.2.4 Telecommunications Infrastructure
The telephone system in Namibia is good with a penetration of 6 telephones for each 100 persons. At the domestic level, urban services is rated as good, fair rural service, with microwave radio relays links between major towns, connections to other populated places are by open wire. The system is 100% digital. On the international front, there is a fiber-optic cable link to South Africa, a microwave radio relay link to Botswana and direct links to other countries. Namibia is connected to Africa ONE and South African Far East (SAFE) submarine cables through South Africa. As at 2002, there were four Intelsat satellite earth stations in the country. There are two Internet Service Providers (ISPs) and about 45,000 internet users.10

1.3 Health Care in Namibia
Namibia’s healthcare system aims to improve and maintain the well-being of its citizens by providing services to prevent and cure diseases, to rehabilitate those that have suffered illness, and to generally promote good health. The health system has two main components, a public health service and a private sector. The government through the Ministry of Health and Social Services (MOHSS) provides public health services, while private health services are offered by private practitioners, hospitals and clinics and by traditional healers.11

1.3.1 Structure of Health Care Services
Healthcare in Namibia is under the jurisdiction of the Ministry of Health and Social Services. The head office of the MOHSS is in Windhoek, and consists of the offices of the Minister, the offices of the Permanent Secretary and Deputy Permanent Secretary, and two departments for Social Services, Policy Development and Resource Management and Health Care Services. The Health Care Services is further divided into the directorate of Primary Health Care and the directorate for Tertiary Health Care. The MoHSS head office is responsible for policy formulation, strategic planning, legislation and regulation, monitoring and overall coordination.

The second level of management in the public sector is made up of the thirteen (13) regional health offices responsible for policy implementation and the provision of services. Regional

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9 IBID
10 IBID
11 Health In Namibia, Progress and Challenges, 2001
Management Teams manage health and social services within each region in close collaboration with their respective Regional Councils. Until recently, four directorates, divided into 34 health districts administered public health services in Namibia. Figure 2 shows the broad organization and lines of responsibility in the MoHSS and changes in regional management from four (4) health directorates to the thirteen (13) political regions.

Figure 2: Organization of the Ministry of Health and Social Services

1.3.2 Health facilities
Majority of health facilities are located in northern Namibia and in the larger towns. This distribution largely reflects the distribution and concentration of the population. Many clinics and health centers also have one or more outreach points in more remote places.

Table 2: Health Facilities in Namibia, 2001

<table>
<thead>
<tr>
<th>Type of Facility</th>
<th>Public (MoHSS and Missions)</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinics</td>
<td>244</td>
<td>5</td>
<td>249</td>
</tr>
<tr>
<td>Health Centers</td>
<td>37</td>
<td>0</td>
<td>37</td>
</tr>
<tr>
<td>Hospitals</td>
<td>34</td>
<td>12</td>
<td>46</td>
</tr>
<tr>
<td>Private Pharmacies</td>
<td>N/A</td>
<td>50</td>
<td>50</td>
</tr>
</tbody>
</table>

Primary healthcare is mostly delivered through outreach points, clinics, health centers and district hospitals and more serious health conditions generally referred to and treated at secondary and tertiary levels. Health centers and district hospitals offer secondary level care, while specialized and tertiary level care is offered at the main referral hospitals in Rundu, Oshakati and Windhoek.
1.3.3 Human Resources

The total manpower position of the MoHSS, directly or indirectly providing healthcare services is about 10,000 with about 30% being professional staff such as medical doctors, pharmacists and nurses. There were about 250 doctors, 2,000 registered nurses, 20 non-volunteer pharmacists and 1,800 sub-professionals (enrolled and auxiliary) nurses employed by the MOHSS in the year 2000. In addition, there are those employed at facilities run by church missions and private practitioners. There are about 350 doctors and 160 pharmacists in private practice in Namibia.

The University of Namibia trains registered nurses, radiographers and social workers. Pharmacists’ assistants, orthopedic technicians, assistant radiographers, environmental health workers and enrolled nurses are trained at the MOHSS National Health Training Centre in Windhoek and in Regional Health Training Centers at Oshakati, Rundu, Otjiwarongo and Keetmanshoop.

All doctors, specialists and pharmacists, are trained in foreign countries. Most professional staff in the MoHSS are immigrants workers which reflects the overall shortage of skilled personnel in the public health system, especially doctors, pharmacists, senior managers and other specialists.

1.3.4 Health Financing

The Government of the Republic of Namibia is the main source of revenue for financing health care. MOHSS budget has averaged 12.8% of total government expenditure between 1997 and 2001. This figure forms about 135% of the average in the African region of 9.5% which ranks Namibia ninth on in the region in terms of expenditure on healthcare. This is a high proportion by international standards. About 5-8% of the total health budget is allocated for the provision of medicines and pharmaceutical supplies each year. However, the ability of the MOHSS to buy adequate supplies has decreased due to inflation, the declining value of the Namibia Dollar and real increases in the costs of drugs internationally. Expenditure on staff salaries and other emoluments form more than half of the total spending on health.

Other sources of funding for the sector include international aid agencies, who have contributed between N$50 and N$67 million to financing the health sector in support of a variety of projects and programs aimed at improving the health sector. In addition, about N$16 million is paid each year as fees paid by patients receiving treatment at hospitals and other health facilities. The amounts paid by patients vary according to the type of service provided, the type of facility used and the patient’s ability to pay. At the Windhoek Central Hospital, for example, considerable income is generated from private patients who have their own medical aid or insurance. However, all such income goes to the government’s revenue fund and is not directly available to cover the MOHSS’s annual costs.

1.4 HIV/AIDS in Namibia

Namibia is ranked among the top five HIV/AIDS affected countries in the world. The first case of AIDS was identified in Namibia in 1986. Surveys of pregnant women in selected hospitals conducted since 1992 provide good estimates of HIV infection rates among all sexually active Namibians. Overall rates of infection have risen from 4% in 1992 to 22.3% in

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13 Health In Namibia, Progress and Challenges, 2001
14 IBID
2000. The majority of infected people have been young adults, and 25% of all Namibians with HIV/AIDS in 2000 were between the ages of 25 and 29.

- very high infection rates (>20%) were first recorded in Katima Mulilo
- the incidence of HIV infection has increased more rapidly at some places than at others
- infection rates in northern Namibia (greater population density) are generally higher than in the south, but there are lower infection rates in Kavango than in the other densely populated northern regions, and
- rates at most large urban hospitals (e.g. Oshakati, Walvis Bay and Windhoek) are higher than at those serving more rural communities.

1.5 Assessment Strategy and Methodology

The main objectives of the exercise was to conduct an assessment of the pharmaceutical supply system including –

- Central Medical Store system of the Republic of Namibia MoHSS and make recommendations for improvement to support the scale up and expansion of PMTCT and ART
- Selected health facility sites to determine their capacity for scale up and expansion of PMTCT and ART and make recommendations for improvement

The strategy adopted included undertaking a pre-assessment of the sector to determine areas that required further review, followed by a detailed diagnostic assessment of the performance and potential of the supply system. A financial audit of the CMS “Trade Account” was commissioned as part of the assessment. The report of the audit conducted by Ernst and Young, Namibia is available as a separate document.

1.5.1 Pre-assessment

In August 2003, a three person RPM Plus team conducted a pre-assessment of the Pharmaceutical sector of Namibia. Data was collected during the pre-assessment phase from document reviews, meetings with key informants, and visits to selected sites, including Katutura and St. Mary’s Hospitals. In keeping with the RPM Plus approach, the pre-assessment data collection focused on the steps of the drug management cycle, obtaining information on policy and legal frameworks (including drug registration), selection, procurement, distribution, rational use, and management support systems (including information systems and human resources). Information was also obtained on the initiatives and roles of various stakeholders.

The findings of the pre-assessment were used to refine the objectives of this assessment, determine areas that needed immediate attention and focus during the assessment and in developing the methodology and instruments used. The trip report of the pre-assessment is available on request\(^{15}\).

1.5.2 Assessment Methodology
The assessment methodology called for two main surveys, a CMS/RMS survey and a facility survey. Data collection instruments for the CMS/RMS assessment and the facility assessment were developed by RPM Plus staff and discussed with MoHSS personnel. Twenty one drugs commonly used for out-patients and fourteen ARVs were selected as “tracer” drugs to evaluate stock status and procurement and pricing practices. Standardized data collection forms were prepared to collect data on tracer drugs at the CMS, RMS and health facilities surveyed. Annex 7 contains copies of the data collection instruments and forms used for the assessment. The format of both surveys is presented below.

1.5.2.1 CMS/RMS Assessment
Information on the operations of the CMS and RMSs was obtained through –

- Detailed review of operations
- Assessment of conditions and equipment at the medical stores
- Data collection from documents and records
- Key informant interviews
- Financial Audit

The review of operations involved interviews with management and staff with the aid of the survey instruments developed and were done at the –

- Central Medical Store, Windhoek;
- Oshakati Medical Store;
- Rundu Medical Store and
- Keetmanshoop Hospital.

Key Informant Interviews were conducted at –

- One major local CMS supplier
- Pharmaceutical Society of Namibia
- Pharmacists’ Assistants Training Program
- MoHSS Finance Division
- Ministry of Finance/Accountant General

The data for the CMS/RMS survey was largely collected by RPM Plus Team composed of Mr. Vim Dias and Francis Aboagye-Nyame, with the assistance of Mr. Gilbert Habimana, the Chief Pharmacist of the CMS. Financial Audit of Trade Account was awarded to Ernst and Young of Namibia through a competitive bidding process.

1.5.2.2 Health Facility Assessment
The facilities selected to participate in the assessment had either been PMTCT pilot sites or had been selected as a facility that already had or was scheduled to be provide ART and PMTCT treatment and care as part of the national plan to scale-up HIV/AIDS care. These facilities included four hospitals of the Catholic Health Services (CHS), i.e. Andara, Nyangana, St. Martin’s in Oshikuku and St. Mary’s in Rehoboth; Onandjokwe Lutheran
Health Center; and Katutura and Windhoek Central Hospitals in Windhoek, Walvis Bay Hospital, Katima Mulilo, Rundu, Keetmanshoop and Oshakati Hospitals.

Interviews were conducted with the most senior person at each pharmacy. In some situations this was a pharmacists’ assistant and in one situation, a porter. Attempts were also made to meet with all Principal Medical Officers (PMOs) or the superintendent of each hospital. Where applicable, the PMTCT coordinators or other staff (nurses and physicians) involved in PMTCT and/or ART programs were also interviewed.

Laboratory assessments were also conducted at six of the twelve facilities visited. All laboratories were part of the National Institute of Pathology (NIP) System. Interviews were also conducted with the NIP procurement office.

The facility surveys involved –

- Interviews of responsible officials
- Assessment of conditions and equipment at the dispensaries
- Data collection from documents and records
- Observation of health worker-patient interaction

Data for the facility survey was obtained by a team composed as follows

Dr. Laila Akhlaghi    RPM Plus
Barbara Matengu     Pharmacist, Consultant
Agnes Tjiramba      Data Collection Clerk
Lydia Nisbeth       Data Collection Clerk

1.5.3 Analysis

A preliminary report of the assessment was drafted by Mr. Vim Dias and the data was collated and analyzed in Arlington, Virginia by the RPM Plus team. Preliminary findings were discussed with the CMS staff and also with representation of the health facilities surveyed during two separate workshops held in January and February 2004. This was done to afford the opportunity of staff of CMS, RMS and health facilities to check and verify the accuracy of the information captured. The findings and recommendations of the assessment were also presented to the management of the MoHSS in March 2004.

The findings of the assessment are considered in the development of options and approaches to improve the efficiency and effectiveness of the procurement and management of drugs and health supplies for Namibia MoHSS in general and in particular to support of President’s Emergency Plan for AIDS relief.
CHAPTER 2:
PHARMACEUTICAL MANAGEMENT IN NAMIBIA

2.1 Introduction
This chapter provides a brief description of the pharmaceutical sector in Namibia at the time of the assessment.

2.2 Policy and Legal Framework
A national drug policy for Namibia was developed and launched in late 1998, and an implementation strategy completed and published in 2000. The extent of implementation of the policy needs to be assessed. In the light of developments in the country and the world in general, there may be the need to review the NDP. Some laws impacting the practice of pharmacy and the management of pharmaceuticals are in place. These include the Pharmacy Profession Act, 1993, the Namibia Medicines Control Act, the Pharmacy Board Act, and the Tender Board of Namibia Act. A Pharmacy Board exists to oversee the registration and licensing of pharmaceutical personnel and premises (e.g., retail and wholesale pharmacies).

2.3 Management Support Systems

2.3.1 Organization of Pharmaceutical Services
The pharmaceutical services division is housed within the Tertiary Health Care Directorate of the Ministry of Health and Social Services and is composed of three main units, the Pharmaceutical Control and Inspections Unit, the National Medicines Policy Coordination Unit and the Central Medical Store. Figure 3 below shows the organogram of the directorate.

Figure 3: Tertiary Health Care Directorate

The Pharmaceutical Services Division is headed by a Deputy Director and the units are headed by Chief Pharmacists. As at the time of the assessment, the position of Deputy Director was vacant, the Chief Pharmacist responsible for Pharmaceutical Control and Inspections was also acting as the Deputy Director, in his absence the Chief Pharmacist of the CMS deputizes. The National Medicines Policy Coordination Unit had no staff in place.
2.3.2 Management Information Systems
Systems for handling information for pharmaceutical management at the MOHSS are relatively weak. In April 2001, a set of indicators for pharmaceutical services was designed to serve as the basis of an MIS; however, this was not widely implemented and coordinated.

2.3.3 Monitoring and Evaluation
Monitoring and evaluation is very weak, and supervision of the pharmaceutical sector seems to be minimal. However, national drug utilization reviews are conducted annually.

2.3.4 Human Resources
The manpower situation for pharmaceutical management is critical. Most vital positions in the pharmaceutical sector are either vacant or staffed by officials serving in acting positions in addition to handling their own portfolios. The National Medicines Policy Coordination Unit, which is responsible for policy education, implementation, and communication with regions, does not have any staff. Most pharmacies in the public sector are manned by Pharmacists’ Assistants, technologists, and/or nurses. The majority of pharmacists in the public sector are foreigners on two-year renewable contracts or volunteers. As at the time of the assessment there were only seven (7) Namibian pharmacists in the public sector and about 160 in the private sector.

Namibia does not have a School of Pharmacy and trains only Pharmacists’ Assistants at the National Health Training Center (NHTC) in Windhoek through a 2-year course. The maximum number of students that can be enrolled in the school is limited, by the Namibia Pharmacy Board, to two students per Pharmacist working in a hospital that can provide practical training. Accordingly, the school has been able to enroll a maximum of eight (8) students per year over the years. The two-year Pharmacists’ Assistant course is not recognized as a suitable entry requirement by universities in South Africa for a Bachelor’s degree in Pharmacy; however, there is considerable interest in the training program as evidenced by the large number of applications that are submitted to the school for admission. There is no training coordinator for the Pharmacists’ Assistants course at NHTC unlike other NHTC training programs, the reason offered being that, the Pharmacist’s Assistant’s program was not envisaged to be continued beyond the training of the number required to filled current vacancies. Given the fact that many facilities under the MOHSS such as CMS, RMSs and health facilities are short of pharmacists and Pharmacists’ Assistants, with no obvious promise of improvement in the short, medium or long term, this is unfortunate. With the rapid expansion of ARV and PMTCT programs expected to occur shortly throughout Namibia, the need for this category of workers would only increase further.

2.3.5 Financing of Pharmaceuticals and Supplies
Pharmaceuticals for the public sector are procured using the government “Trade Account” which is financed through budgetary allocations. Annual procurement of pharmaceuticals is of the order of NAD 98 million (USD 14 million). GRN has recently procured generic ARVs from Hetero, Ranbaxy, and Cipla. Under the GRN “Grain Fund” (monetized wheat sale proceeds donated by USDA), NAD 14 million has been allocated for the purchase of drugs for the MOHSS.

The Public Employees Medical Aid Scheme (PSEMAS) covers health care costs (including drugs) for public sector employees (employee contributions are NAD 60 [USD 9] per month per member, NAD 30 [USD 4] per month per dependent, with a 5 percent co-payment). This
scheme is managed by the government through the Ministry of Finance. Private health insurance is also available.

2.3.6 Registration and Importation
Every drug product registered in South Africa was automatically considered to be registered in Namibia by the Pharmaceutical Control and Inspections Unit under the Pharmaceutical Services Division within the Tertiary Health Care Directorate of the MOHSS. Following the promulgation of the Medicines Control Act in August 2003, all drugs are required to be registered in Namibia using a distinct process and criteria, irrespective of registration status in South Africa. Subsequently, a total of 2,949 applications for registration had been received as at March 2004 and only 100 applications had been reviewed16. The registration fee per unique product is NAD 60 (USD 9) with an annual renewal fee of NAD 20 (USD 3). It typically takes between three months and two years to register a product in Namibia. There are about 1,900 products on the May 2002 drug register. A permit is required for the importation of Schedule 5 to 7 drugs.

2.4 Selection
The Namibia Essential Medicines List, NEMLIST, was updated and printed in 2003. Although treatment guidelines have been developed for some specific conditions such as hypertension, STIs, malaria, cholera, and ART, the comprehensive volume of standard treatment guidelines covering all diseases has not been updated since 1996. Guidelines for ART were developed through a process that allowed significant involvement of both public and private practitioners, and was launched in May 2003.

2.5 Procurement
CMS conducts a number of international tenders for different product categories every two years and a number of local tenders and/or direct procurements during the intervening period. The tender process is fully localized within the MOHSS and not through the tender board of the Ministry of Finance, as is required for other ministries. This structure shortens the procurement processing time and affords the MOHSS internal control of the procurement process. Supplier performance was reported to be inadequate, probably because of the constraining tender conditions. Procurement and donation guidelines and standard tender documents do exist.

Quantification systems are generally weak and procurement quantities for drugs are generally determined by adding 10% to the quantity procured the previous year. No formal drug management information system is in place; hence data on consumption of pharmaceuticals and actual requirements of the regions are not routinely collected and monitored by CMS and are therefore not used as a basis for the quantification of needs.

2.6 Storage and Distribution
The MoHSS operates a classical CMS system with a CMS located in Windhoek and two RMSs in Oshakati and Rundu. The CMS has a newly renovated structure including good cold-storage facilities and warehouses with individual temperature controls. The store currently handles about 1,400 different items. A computerized inventory control system, SYSPRO™, was installed in 1998 by a South African firm. The software has been recently upgraded to SYSPRO™ 6.0. CMS organizational structure, job descriptions, and personnel

numbers have been the same since 1990, and have not been reviewed in response to increasing workload. CMS does not have enough staff for its operations, and the few staff in place are not adequately trained to handle all aspects of warehouse management.

Health facilities order products from CMS every six weeks, and CMS usually takes about four weeks to deliver the order. Intermittent orders may also be placed by facilities. The CMS typically fills 60–80 percent of the orders of the facilities and does not fill back-orders. CMS distributes to two regional medical stores in Oshakati and Rundu, all district hospitals, and the two local hospitals and clinics in the Khomas region. Regional depots and district hospitals in turn are responsible for distribution to the other facilities in their jurisdiction. CMS maintains its own fleet of trucks, which were reported to be aged and not suitable for the volume of distribution conducted.

2.7 Rational Use of Medicines
There is no national adverse drug reaction monitoring system in place and no drug information center exists for the promotion and dissemination of unbiased information on medicines. Pharmacy and Therapeutic Committees are not functional in most institutions due to a lack of staff, guidelines and training. There is no comprehensive program in place to promote and ensure the rational use of medicines by prescribers, dispensers and patients at all times.
CHAPTER 3:
PERFORMANCE OF SUPPLY SYSTEMS AT THE CENTRAL AND REGIONAL MEDICAL STORES

3.1 Central Medical Store

3.1.1 Introduction
The Central Medical Store (CMS) in Windhoek commenced operations in 1960 (under the Department of Health of South Africa) and functions as a unit within the Ministry of Health and Social Services (MoHSS). The CMS is located at Voigts Street in the South Industrial area of Windhoek, in offices and warehouses that were refurbished in September 2002. The CMS procures, stores and distributes over six hundred (600) drugs listed in the Namibia Essential Drug List (NEMList), including antiretrovirals (ARV), drugs for treating and preventing opportunistic infections (OIs) and drugs used for the Prevention of Mother to Child Transmission (PMTCT) program. It does the same for over eight hundred (800) medical supply items. Distribution is done to two Regional Medical Stores (RMS), one in Oshakati in the northwestern and the other is Rundu in the northeastern part of the country. It also supplies 46 health centers and clinics situated in the Windhoek area, 15 school hostels and to an unspecified number of other facilities in the country, such as the Oshakati Hospital and Katima Mulino Hospital.

At the time of assessment, the CMS had forty-four (44) staff. The Chief Pharmacist of the CMS reports to the Deputy Director of Pharmacy Services at the MOHSS who in turn reports to the Director of Tertiary health care Directorate. The position of Chief Pharmacist of CMS, like many other key positions in the pharmacy sector, had been vacant for a while and was filled in October 2003, through the promotion of the incumbent Distribution Pharmacist, thus causing that position to be vacant as at the time of the assessment. The high level of vacancies and staff turnover causes many operational problems and leads to heavy work loads for some CMS staff.

The CMS has several sections for handling stores functions such as procurement, storage, distribution, transport, administration and finance. These functions are shown in the current CMS organization structure illustrated in Figure 4.

![Figure 4: Current Organizational Chart of CMS](image)

3.1.2 Performance Indicators
The indicators used in this survey for assessing current performance of certain key functions at CMS, RMS and other health facilities have been mainly selected from the manual “Rapid
Pharmaceutical Management Assessment: An Indicator Based Approach”, published by Rational Pharmaceutical Management Plus Project, of Management Sciences for Health. Indicators used for procurement, storage and distribution functions currently undertaken by the CMS, RMS and at health facilities provide an unbiased and a quantitative assessment of these key functions. The results from this assessment provide a useful baseline for undertaking future evaluations for assessing effectiveness of planned interventions.

Sources of data were the CMS computerized inventory control system (Syspro™), stock record cards, supplier invoices and procurement documents. A list of thirty-four (34) products used for treating diseases of common occurrence in Namibia, listed in the Namibia EDL and normally stocked at CMS and health facilities were selected as tracer products for obtaining information required for developing the necessary indicators. Annex 3 provides the full list of the tracer items used.

Table 3 presents a summary of the key pharmaceutical management indicators for the CMS.

Table 3: Key CMS Supply Management Indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average procurement lead time for CMS</td>
<td></td>
</tr>
<tr>
<td>• Air</td>
<td></td>
</tr>
<tr>
<td>• Sea</td>
<td>14 to 16 Weeks</td>
</tr>
<tr>
<td>• Local</td>
<td>6 Weeks</td>
</tr>
<tr>
<td>CMS product prices as a percentage of MSH – year 2002 International Indicator Guide Prices.</td>
<td>101%</td>
</tr>
<tr>
<td>Average percentage of a set of unexpired indicator products in stock at CMS at time of survey.</td>
<td>91%</td>
</tr>
<tr>
<td>Average percentage time out of stock for a set of indicator products at CMS over a recent 12 month period.</td>
<td>3.4%</td>
</tr>
<tr>
<td>Average % of stock records corresponding with physical counts.</td>
<td>34%</td>
</tr>
</tbody>
</table>

Reference has been made to the indicators above in the following sections describing the current operations of the CMS pharmaceutical supply system.

### 3.1.3 Procurement

#### 3.1.3.1 Introduction

Operating Guidelines for procurement in the MoHSS have been developed based on the State Finance Act, Namibia Tender Board Act of 1996 and Treasury Instructions, and are in accordance with the operational principles for good pharmaceutical procurement. These procedures have been established to ensure competition and transparency so as to obtain the

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required pharmaceuticals and commodities of acceptable quality from qualified manufacturers and suppliers at the lowest possible prices.

The CMS procured about N$75.4 million worth of pharmaceuticals and N$28.8 million of medical supplies during the financial year 2002/2003. During this same period the CMS received N$3.9 worth of donations, consisting mainly of condoms from USAID Namibia.

3.1.3.2 Organization for Procurement

The procurement section of the CMS is responsible for managing the all processes for the procurement of pharmaceuticals and supplies, and related functions such as quantifying requirements, quality assurance and receiving shipments at CMS. This unit is headed by the Procurement and Tender (P&T) Pharmacist and assisted by two (2) other staff members. The CMS maintains a range of over six hundred (600) drug products comprised of different strengths but excluding different pack sizes. All items in the CMS standard product range are listed in the Namibian EDL.

The MoHSS has constituted a CMS Procurement Committee (PC) composed of nine (9) members as follows –

- Permanent Secretary, MoHSS  Chairman
- Secretary, National Tender Board of Namibia  Member
- Director, Tertiary Health Care Directorate  Member
- Deputy Director, Pharmaceutical Services  Member
- Chief Medical Superintendent  Member
- Financial Advisor, MoHSS  Member
- Chief Pharmacist, Pharmaceutical Control & Inspections  Member
- Chief Pharmacist, CMS  Member/Secretary
- Procurement and Tender Pharmacist, CMS  Member

The PC provides guidance and policy direction for procurement in the CMS and is responsible for control, regulation and overseeing the transparent and timely procurement of pharmaceuticals and clinical supplies by the CMS.

3.1.3.3 Procurement Methods

CMS uses mainly international open tenders for procuring pharmaceuticals and commodities. Buy-outs or local purchases are used for emergency procurement or procuring supplies when suppliers who have been awarded a tender are unable to deliver according to the contract. For a limited number of drug products, sole source or direct procurement is employed. In FY02/03 91.2% by value of pharmaceuticals was procured through orders on open international tender contracts, while the remaining 8.8% was procured using buy-outs.

Limits of authority for raising Purchase Orders for Buy Out or tendered items have been set by the Pharmacy Division on the basis of value of the individual item to be procured. These limits were set by management to guide its operations and have not been formally adopted by the MoHSS. It is important to note that, because CMS issues POs on a per item basis, these limits refer to the value of an individual item to be procured, and not the value of the order placed with a supplier for a number of items.
Table 4: Procurement Approval Authority Limits

<table>
<thead>
<tr>
<th>Designation</th>
<th>Financial limits (N$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procurement and Tender Pharmacist</td>
<td>&lt; 100,000</td>
</tr>
<tr>
<td>Chief Pharmacist, CMS</td>
<td>Between 100,000 and 200,000</td>
</tr>
<tr>
<td>Deputy Director, Pharmaceutical Services Division, MOH</td>
<td>Between 200,000 and 500,000</td>
</tr>
<tr>
<td>Director, Tertiary Health Care and Social Services</td>
<td>&gt; 500,000</td>
</tr>
</tbody>
</table>

3.1.3.3.1 *International Open Tenders*

International open tenders are called by placing invitations to bid in local and international media. Usually potential suppliers are allowed six (6) weeks to prepare and submit their bids to the CMS Procurement Committee. Bid prices are solicited for two consecutive time periods, each period covering one year, and evaluation is done based on the average of the two prices offered. The CMS Procurement Unit takes about three (3) months to process bids from the time of bid opening. Processing of bids and scheduling is done using a combination of FoxPro and Microsoft Excel, through a rather slow and tedious process of data entry and analysis. CMS is in the process of investigating the possibility of procuring a Tender Management software to reduce the burden of tender processing and evaluation.

Recommendations for award of contract are made to the Procurement committee of the CMS for deliberation and approval based on price, quality and past performance of vendor.

The CMS Procurement Committee meets on days when tenders are opened and also for adjudicating bids presented by potential suppliers. The last meeting of the Procurement Committee prior to the assessment was held on October 31 2003, for the opening of a supplementary tender for pharmaceuticals, only four members were present.

Supply contracts for estimated quantities are awarded for a period of two years, and allow the CMS to place several separate orders as required with the selected supplier of a given item, over the contract period for the bid price offered. Even though an expected supply quantity is stated in the supply contract, CMS order quantities in practice vary a great deal from the contract quantity.

Table 5 presents an analysis of orders placed with one major local supplier against a contract awarded following the tender for pharmaceuticals over the two year period 2001 to 2003 for a total of one hundred and thirty-six (136) items.

Table 5: Variation of CMS Order Quantities from Contract Quantities

<table>
<thead>
<tr>
<th>Parameter</th>
<th>% of Contract Quantity Ordered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum</td>
<td>4350%&lt;sup&gt;18&lt;/sup&gt;</td>
</tr>
<tr>
<td>Minimum</td>
<td>0%</td>
</tr>
<tr>
<td>Average</td>
<td>249%</td>
</tr>
<tr>
<td>Median</td>
<td>131%</td>
</tr>
<tr>
<td>Number of Items</td>
<td>136</td>
</tr>
</tbody>
</table>

<sup>18</sup> This may be due to an unexpected increase in demand for Farmorubicin Inj. 50mg
The variation between contracted quantities and actual quantities ordered ranged from 0% to over 4,300% of the contracted quantity. On the average actual order quantities are almost 250% of contract quantity. This is a poor reflection on the ability of CMS to properly quantify needs. This is indeed a serious problem, as the practice of quoting lower purchase quantities on tenders would not permit CMS to obtain the best possible prices. Chart 2 indicates that almost 67% of orders placed had quantities that were more than the contract quantity with 35% below the contract quantity.

**Chart 2: Variations in CMS Orders**

The average number of separate orders placed for the one hundred and thirty-six (136) drugs awarded to this particular supplier during the supply cycle was 9.1 with the maximum orders for a item being thirty five (35). On this basis, CMS on the average places about four (4) orders per year for any given item. Seventy-one (71) items were ordered more than eight times and thirty (30) items more than twelve times within the two year contract period, which results in increased work load for staff.

**Chart 3: Analysis of CMS Orders Placed with a Major Local Supplier during 2001/2003 Contract Period**

Even though local wholesalers supply pharmaceuticals to the CMS, they act mainly as agents for foreign suppliers/manufacturers. Local firms are granted local preferences of about 8 to 11% on their bid price while the preference factor for manufacturers could exceed 30%. This system of domestic preferences used by CMS is in accordance with the Tender Board of
Namibia Act, 1996 (Act 16 of 1996). There is only one pharmaceutical manufacturer in Namibia, Fabupharm based in Ojiwarongo.

An analysis of the 2001/03 tender for pharmaceuticals indicated that 62.74% by value of contracts based on average price offered was awarded to five (5) local wholesalers, with one major local supplier receiving 46.27% of total value. The top three countries, from which CMS currently procures, by value, are South Africa, India and Egypt.

Annex 5 provides information on average prices paid by the CMS for a set of tracer drugs, and a comparison with the 2002 international indicator prices published by Management Sciences for Health\textsuperscript{19}. The price paid by CMS for a set of 14 tracer drugs is on the average 78% higher than international drug prices, with a median of 101% which implies that CMS does not obtain any price discounts during international tenders. The minimum and maximum deviations from the indicator price were 8% and 673% respectively.

\textbf{Chart 4: CMS Procurement Prices Compared to International Indicator Prices}\textsuperscript{20}

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{chart.png}
\caption{CMS Procurement Prices Compared to International Indicator Prices}
\end{figure}

3.1.3.3.2 \textit{Buy Outs}

Buy Outs are used to meet emergency needs and also to fill short falls caused by contracted suppliers being unable to supply a product within the stipulated period. In such cases, according to the supply contract, CMS has the right to charge the supplier the difference between the tendered price and the Buy Out price. However, this penalty has not been applied yet.

The Buy Out procedure requires obtaining a minimum of three (3) quotations from suitable suppliers as per tender board regulations. These quotations are evaluated and award made based on price, quality and past performance of the supplier. If the contract value per item is within the CMS Chief Pharmacists’ threshold, the order is placed without prior reference to the Procurement Committee. The Procurement Committee is not directly involved in making decisions on suppliers under Buy Outs, but is only provided with reports on a regular basis for ratification. During the FY02/03 buyouts formed 8.8% of total procurement of pharmaceuticals and 7% of medical supplies by value.

\textsuperscript{19} Ref MSH International Price Indicator Guide
\textsuperscript{20} Ref MSH International Price Indicator Guide
3.1.3.4 Post Procurement Review

There is no process of post procurement review in place at the CMS to ensure adherence to laid down procurement procedures and thresholds. A post procurement audit needs to be instituted to ensure better transparency of the process.

3.1.3.5 Quality Assurance

Various quality assurance procedures are used by the CMS including making visits to all new drug manufacturers including those based in Asia and Europe, to conduct Good Manufacturing Practice (GMP) audits\(^{21}\), testing of drug samples submitted by new suppliers and post purchase drug testing prior to acceptance of consignment. Quality control tests are conducted by the Quality Surveillance Laboratory (QSL) located on the premises of the CMS. The QSL was officially opened in October 2002 with assistance from German Development Service (GTZ) and possesses a variety of analytical instruments, which enables it to fulfil most analytical requests, regarding identity, purity and content of medicines. The QSL assists the Ministry of Health and Social Services to ensure that medicines are up to the required standards, is involved in the registration of drugs, and assists in assessment of the quality of all medicines marketed in Namibia.

During financial year 2002/03, a total of sixty-three (63) batches of pharmaceuticals procured by the CMS were tested at QSL, out of which thirteen (13) or 20% did not meet specifications.

3.1.3.6 Procurement Lead Times

Most shipments are received by sea or land via South Africa, with a few items such as vaccines being delivered by air. Lead times for sea shipments are between twelve and sixteen weeks and about six weeks for local purchases\(^{22}\). An analysis of orders placed with a number of suppliers for pharmaceuticals for managing HIV/AIDS, TB and Malaria showed wide variations in lead times. The average supplier lead time was fourteen weeks with a median of twelve weeks. The maximum lead-time was thirty-five weeks.

3.1.3.7 Payment Methods

90% of foreign suppliers are paid through Letters of Credit. Bank telegraphic transfers are used against documents for the remaining 10%. In the case of purchases made from Namibia and South Africa, payment is made by check, issued from the Ministry of Finance. These checks are usually issued within thirty (30) days of raising a Goods Received Note (GRN). Funds for payment of suppliers do not appear to be a problem since the Ministry of Finance pays for all claims of the CMS regularly.

3.1.3.8 Port Clearing

The Procurement and Tender Pharmacist is responsible for managing activities related to port clearing. About 80% by value of foreign orders is cleared from the port of Walvis Bay and about 20% from the Windhoek Airport. The average port clearing times from Walvis Bay and for air shipments from the Windhoek Airport, are seven days and one day respectively. For each consignment to be cleared, up to three quotations are obtained from suitable clearing agents and one is selected to clear the consignment based on set criteria. This practice causes a lot of additional work for the procurement section, which could have been easily avoided by awarding a service contract, valid for a period of one to two years for port clearing. The use of such an intervention is being explored by the CMS.

\(^{21}\) Premises inspection and GMP audits are done in collaboration with the Medicines Control Unit and the QSL

\(^{22}\) Local purchases are defined to include purchases from within Namibia and South Africa
3.1.3.9 Receiving Goods

The Procurement and Tenders Pharmacist is also responsible for receiving supplies at CMS even though this may not be advised since it does not allow for effective separation of responsibilities. Supplies arrive at the receiving section of CMS and are inspected to ensure conformity to the purchase order, quantity ordered, expiry date and physical conditions. Where the supply is from a new supplier, samples are taken for analysis by the QSL. The details of the receipt are then entered into Syspro™. At this point the GRN, which was printed at the time the PO was produced is manually filled in and signed by the receiving officer. Syspro™ then treats the goods as awaiting inspection, until the relevant warehouse clerk inspects and the goods and enters an acknowledgement in Syspro™. A Goods Received Voucher (GRV) is then printed for each individual item and the stock records in Syspro™ updated. After the checking procedure has been completed and relevant signatures obtained, a full set of documents consisting of the Purchase Order, Customer Invoice and the GRN and GRV are forwarded to the Accounts section at CMS for processing for payment.

It is important to note that Syspro™ produces Purchase Orders for each individual product and not for a group of products awarded to a supplier. Similarly, GRNs and GRVs are raised for individual products and not for a group of products delivered by a supplier. These practices have significantly increased the amount of paperwork and the need for signing numerous documents.

3.1.3.10 Key Problems Experienced by the Procurement Section

- CMS does not use appropriate methods for quantifying needs and inventory control and hence orders are not in line with needs.
- CMS does not maintain a reliable database of key information on suppliers. Such a database would be useful for introducing a system of restricted tenders in future.
- The FoxPro and Excel based system used for processing and managing tenders is weak in many respects and impacts negatively on productivity of the procurement section. Hence, this function should be strengthened or replaced by an alternative system.
- Procurement staff needs general and system specific training in quantification of needs, procurement, inventory control, order initiation and order monitoring.

3.1.4 Inventory Management

3.1.4.1 Introduction

An effective inventory control system provides timely and accurate information to allow for a good balance between inventory carrying costs, procurement costs, and stock out costs, reduce incidence of stock outs and lower procurement work loads.

In order to be effective, an inventory control system should possess the following characteristics –

- Use an appropriate method for quantifying needs based on past consumption, morbidity or a combination of these.
- A control system that allows decisions on, “when to re-order” and “how much to order”.

• Use of classification systems such as ABC, VEN and Level of Use for systematic cost reduction and maximizing therapeutic benefits, since not all products held in inventory are of equal importance.

• Use of appropriate buffer or safety stocks for maintaining a desired service level to forestall possible stock outages.

• A set of documents/computer software package for supporting the inventory control system of choice.

The extent to which the above functions are currently undertaken by the CMS inventory control system is discussed in the sections that follow.

3.1.4.2 Quantification of Needs
The Procurement Unit begins the procurement cycle by quantifying needs based on consumption over the last twelve month period. This information is based on the total quantity of the product issued from CMS over the last twelve month period. A 10% mark up is applied to this quantity to reflect additional expected needs over the coming year. Next, the current stock on hand of the product at CMS Windhoek is noted and a decision is made as to whether a tender is to be floated for this product or not.

The quantity of an item to be ordered is produced by Syspro™ in a “Replenishment Report” and quantities are calculated using a formula that takes into consideration, buffer stock requirements (2 to 3 months), procurement lead time, reorder period, minimum level and maximum level of stocks. However, due to the fact that the stock balances reported by Syspro™ are inaccurate due to the poor inventory control system of the CMS, adjustments have to be made manually to the reorder quantities based on the experience of CMS staff. This consumption based method should be improved to take into consideration other factors in estimating the average monthly consumption, such as –

• Possible periods of stock outs

• Possible impact of stock out of a complimentary product

• Use of individual adjustment rates depending on expected program expansions or contractions

• Impact of the introduction of a new drug

• Changes in therapeutic regimens or prescribing patterns

3.1.4.3 Decision Systems
CMS Procurement Section uses a system, consisting of a re-order level and a maximum stock level for making decisions on “what to order”, “when to order” and “how much to order”. It appears that CMS simultaneously employs a “Continuous Review” as well as a “Periodic Review” system of inventory control. This is unsatisfactory as such an approach does not permit a proper balance to be maintained between stock holding costs, ordering costs and stock out costs. This anomaly needs to be rectified immediately to strengthen the inventory control system and reduce the work load on CMS staff.

3.1.4.4 Use of Classification Systems
CMS utilizes VEN and Level of Care Classification systems, and Syspro™ is capable of performing ABC value Analysis and other inventory management reports. However, it is not very clear the extent to which these classification systems and management reports are
effectively employed in setting priorities, determining order quantities, and buffer stock levels or for managing other aspects of medical store operations.

3.1.4.5 Buffer Stocks
As a matter of policy, CMS attempts to maintain buffer stocks equivalent to two to three months of stock. However, space constraints, capacity to determine actual buffer stock requirements, inaccurate inventory control parameters and parameters and cost has resulted in a situation where the CMS cannot maintain buffer stocks. Buffer stocks are needed to minimize stock outs caused by higher than expected demand or supplier non performance that results in longer lead times than expected. This could be one reason for the observation that the CMS has been placing multiple orders for items. Actual buffer stock requirements of the nation and its management need to be thoroughly assessed and implemented.

3.1.4.6 Syspro™
Syspro™ 6.0, the computerized inventory control system used by the CMS was installed by Intelliware, a South African Company in January 2001. Syspro™ is used for managing inventory control functions and maintaining information on issues, receipts, stock balances, stock on order. Syspro™ is also used for generating picking lists and customer invoices. In addition to carrying out these routine transactions, the program is also capable of producing reports that assists CMS managers to identify what products need to be ordered, how much to order etc. Unfortunately, the functionality of Syspro™ is not used to the full and many functions are done manually or with spreadsheets which could have been done by the system. In addition to Syspro™, CMS uses stock cards to manually record information on issues, receipts and stock balances.

Majority of senior CMS staff initially trained in the use of Syspro™ in 2001, have left the public service, and management personnel who should be using the full potential Syspro™ in their routine work, lack the ability to use the full functionality of the system and have no time to acquire further skills in using Syspro™, because they are “bogged down in routine work”.

An in-depth assessment of the ability of Syspro™ to perform the inventory control functions that are required by the CMS for effective management of the supply system has been commissioned and modifications recommended by this evaluation will be implemented to ensure that Syspro™ meets the needs of the CMS and the required training provided to all key users.

Analysis of the current inventory control system at CMS, suggests an urgent need for strengthening of the systems and procedures used for quantifying drug needs, inventory control and related functions at CMS. This should involve the following at the minimum –

- Strengthening of the inventory control system of CMS taking into account the needs of the two regional medical stores, as well as of health facilities. This should result in lowering stock holding costs, procurement and transport costs and reduce incidence of stock outs.
- Review and update CMS Standard Operating Procedures and the development of an Operations Manual and Job Aids for all processes of the revised system.
- Specific training on the use of new systems based on the Operations Manual and Syspro™ for all concerned with procurement, inventory management and distribution.
- Provide technical assistance in the implementation of revised systems.
3.1.5 Stores Management

3.1.5.1 Storage Space
The CMS warehouse was completely refurbished in August 2002 and currently covers a floor area of approximately 1,500 square meters for pharmaceuticals and medical supplies. The key storage areas of CMS are as follows.

- Seven (7) separate air conditioned storerooms with independent temperature controls for drug storage.
- Three (3) separate storerooms for storing medical supplies.
- Two (2) separate areas for receiving and dispatching drugs.
- Four (4) walk in cold rooms and freezers.

The condition of the physical infrastructure of the store is good, however, the store can only hold up to two month’s of stock23, this is inadequate if buffer stocks have to be maintained to ensure continuous supply of pharmaceuticals. However, an assessment of space requirements of the CMS can only be accurately made after the supply management system has been strengthened, in order to determine the actual stock holdings that the CMS requires and the space that can accommodate that.

The storerooms are managed by clerks who have not received any recent training in drug management. The lack of trained manpower and adequate storage space makes it difficult for CMS to follow good storekeeping practices. This has resulted in improper stacking of pharmaceuticals, difficulty in accessing stocks, lack of methods for identifying location of products and not practicing First-Expiry-First-Out (FEFO). This may lead to losses due to expiry, pilferage and spoilages.

3.1.5.2 Storage and Handling Equipment
Warehouses are equipped with shelves, pallets and racks for storing pharmaceuticals. In addition there are fork lifts and pallet movers. The condition and numbers of these equipment seem adequate. However, as observed earlier, due to poor store keeping practices these are not being efficiently used. The adequacy or otherwise of these equipment will be fully assessed when the new inventory control system is designed and implemented.

3.1.5.3 Stock Records
Stock record cards and balances of the computerized inventory control system have to be maintained accurately and up to date. This is an important prerequisite for practicing good inventory control. Unfortunately, this vital function is not maintained properly. This is evident from the fact that balances on stock cards and in Syspro™ do not correspond with each other, and also with physical inventory counts. Of thirty-five (35) tracer drugs examined only nine (9) or 26% of the stock card balances (mainly ARVs) corresponded with the physical count, and only one (1) or 3% of Syspro™ records corresponded with physical stocks. Only two (2) or 6% of Syspro™ records corresponded with stock card records for the tracer items.

Lack of appropriate systems for recording and maintaining information on receipts, issues and ensuring that stock balances are accurate and up to date, not only weakens inventory control, but also leaves considerable room for malpractice and losses.

23 Discussions with CMS staff
A complete physical count of CMS stock has to be undertaken under the supervision of an independent body and the actual balances recorded in Syspro™ and stock cards. Thereafter the CMS Chief Pharmacist should be held responsible for maintaining accurate stock records.

### 3.1.6 Distribution

The Distribution Pharmacist at CMS is responsible for warehousing, issuing and invoicing, dispatch, and maintenance of stock records. This position has been vacant since October 2003 when the incumbent was promoted to the position of Chief Pharmacist of the CMS. The responsibilities of this position are currently undertaken by the Chief Pharmacist and the Procurement and Tenders Pharmacist. This further adds to the workload of these two incumbents.

CMS delivers pharmaceuticals to two (2) Regional Medical Stores situated in Rundu in the Northeast and Oshakati in the northwest of Namibia. In addition, CMS serves forty-six (46) hospitals, health centers and clinics throughout Namibia. CMS runs the distribution system with only four (4) relatively old trucks with occasional support from the two Regional Medical Stores who assist by collecting some supplies using their trucks. This eases the CMS distribution burden. It was observed that medical supplies take up a significant portion of CMS transport capacity because of their bulky nature.

Table 6 describes the six (6) routes operated by the CMS for distribution of pharmaceuticals.

**Table 6: CMS Distribution Routes**

<table>
<thead>
<tr>
<th>Route No</th>
<th>Route Name</th>
<th># of Facilities Served</th>
<th>Service Frequency per year</th>
<th>Turn around time in working days</th>
<th># of 30 Ton Trucks needed for 6 week cycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Midland</td>
<td>8</td>
<td>9</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>West/Local facilities</td>
<td>12</td>
<td>9</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>Kavango/Caprivi</td>
<td>6</td>
<td>9</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>North West</td>
<td>4</td>
<td>9</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>East/South</td>
<td>10</td>
<td>9</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>North/West Local facilities</td>
<td>11</td>
<td>9</td>
<td>3</td>
<td>7</td>
</tr>
</tbody>
</table>

Distribution from CMS to its clients occurs throughout the year without any interruption due to poor weather or road conditions. However, distribution from RMS to some clinics is disrupted in time of heavy rains. The distances covered by CMS trucks vary widely from only three (3) kilometers to Windhoek Central Hospital to Karasburg Hospital situated about 1,000 kilometers from the CMS and requires five (5) days turnaround time to service. Road conditions throughout Namibia are good and this has helped a great deal in minimizing turnaround times on all delivery routes, and the costs of maintenance of trucks.

Health facilities and Regional Medical Stores are expected to place orders using the “Order Book”, once every six (6) weeks. CMS is expected to prepare and dispatch facility orders within ten (10) working days from receipt of order. The Order Book contains all CMS products; with preprinted product names, VEN Classification, Level of use, pack size and

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24 Excludes emergency deliveries
unit price. Facilities are expected to fill in their needs against products requiring re-order, by filling the columns, “Units in Stock” and “Units Ordered”. Order books are expected to be returned to health facilities together with invoices etc. at the time of delivering supplies; however, this is not usually the case.

It was observed that in between formal ordering times, most facilities place a number of emergency orders. This practice places an additional distribution and drug assembly burden on CMS staff and severely impacts on the performance of CMS operations. Key reasons for this situation were verified during visits to the two RMS as well as health facilities, as the lack of proper inventory control systems and poor management.

3.1.6.1 Transport Management

The CMS vehicle fleet is rather old with an average age exceeding ten (10) years. This in addition to the heavy delivery schedule of the CMS places undue burden on the four trucks. This has resulted in heavy maintenance charges incurred during FY 02/03 of N$665,800 and long down times. The CMS has no repair and maintenance facilities of its own and hence has to depend on the private sector for undertaking all types of maintenance and repair work on vehicles.

Table 7: CMS Transport Fleet

<table>
<thead>
<tr>
<th>No</th>
<th>Type of Vehicle</th>
<th>Vehicle Capacity in Tons</th>
<th>Age in Years</th>
<th>Condition</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Nissan</td>
<td>30</td>
<td>&gt; 11</td>
<td>Running</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Nissan</td>
<td>30</td>
<td>&gt; 12</td>
<td>Running</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Scania</td>
<td>30</td>
<td>&gt; 13</td>
<td>Running</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Nissan</td>
<td>4</td>
<td>&gt; 8</td>
<td>Running</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Ford</td>
<td>1</td>
<td>&gt; 4</td>
<td>Running</td>
<td>Met with a major accident, was written off, but repaired and used.</td>
</tr>
</tbody>
</table>

Transport management is currently shared between the MoHSS and the CMS. Records on fleet movement, maintenance and fuel usage were not readily available at the CMS. An efficient transport management system must be implemented in the CMS to track all activities and costs associated with transport usage. Analysis of the best option for transporting supplies from the CMS to clients will be undertaken to make recommendations for the optimal use of transport resources.

Since the fleet of CMS vehicles has aged significantly, there may be the need to replace at least one of the oldest 30-ton trucks at the CMS and the provision of 10-ton trucks for the RMSs. The existing trucks may be maintained as standby units at their respective locations. In addition, both RMSs indicated the need for pickup trucks for distribution and monitoring activities.

The current high distribution load could be further reduced by strengthening inventory management and order raising practices at health facilities as well as at the two RMS. These interventions would greatly help in easing the current transport problems at CMS and thereby bringing down unit transport charges.
3.1.7 Financial Management

3.1.7.1 Introduction
The Ministry of Finance (MoF) established a Trade Account for the Ministry of Health and Social Services (MoHSS), to serve as a tool for guaranteeing perpetual availability of funds to purchase medicines and related substances according to the needs of the population of Namibia. The trade account is financed through budgetary allocations. The authorized capital of the Trade Account is N$9.35 Million; however, the CMS has a gross annual turnover of N$82 to 90 million, with a current stock build up of N$42 Million. The Trade Account has been located at and managed by the Ministry of Finance (MOF) even before the independence of Namibia. The CMS has no role in the management of the account.

The Trade Account is currently experiencing a number of problems, including a lack of accurate information on the status of the account to assist in management decision making, under funding of the account, discrepancy between the monthly allowed amount and the actual amount used by CMS, creating an impression of overspending, no adjustments of the account in response to changing operating environment e.g. population increases and higher utilization of health services leading to a greater demand for medicines and related substances and the ease of operation of the account.

Over the years, the account has accumulated a very large deficit due to no regular reconciliation of the account to account for losses etc and also CMS has been allowed to procure any amount of pharmaceuticals without question, partly due to the assumption that drug supplies are so essential to the welfare of the nation.

CMS does not apply a mark up on cost to pharmaceuticals it issues to health facilities but simply issues at cost. Supplies are issued to health institutions at the average of procurement prices over a two-year period. This practice may lead to some consignments, especially goods bought on buy out, being issued at a price lower than cost. Individual health facilities are allocated an annual drug budget, which is managed at the regional level, however, there appears to be no control over how much facilities could actually draw from CMS due to a lack of a proper management information system to track level of usage of budgetary allocations. At a number of facilities surveyed, the persons in charge of the dispensaries and medical stores did not have any information on their budget allocations or performance.

CMS does not maintain a current account or a petty cash account to pay for purchases or services. The practice is for CMS to prepare relevant payment documents relating to CMS expenses such as vehicle maintenance and stationery etc. and present them to the finance section at MOHSS. A similar approach is used for making payments to suppliers of pharmaceuticals. The MOHSS then reviews the documents submitted by CMS and pass them on to the Economizing Committee for approval, if it is for the purchase of supplies for CMS and directly to Finance division for onward submission to the Ministry of Finance for checks to be written. The checks are then returned to MOHSS for payment to relevant vendors. Accordingly, CMS does not handle any cash transactions thus the Accountant plays a very limited role in the financial management of the CMS and appears to be mainly occupied with expediting payments to vendors.
3.1.7.2 Operational Cost Analysis - CMS

There are usually three key cost components associated with operating and managing a pharmaceutical supply system. These are the cost of placing orders or ordering costs, inventory carrying charges or holding costs and stock out costs. These costs usually have a tendency to oppose each other. For example, when an attempt is made to reduce carrying costs by lowering inventory levels, the probability of stock outs increases, which may lead to an increase in stock out costs. Gains can be achieved in any supply system through good inventory management by maintaining a proper balance of these opposing cost components which results in minimizing the overall cost of managing the system.

3.1.7.2.1 Key CMS Financial Information

Key information on CMS inventory, operational costs, income and other related financial information for financial year 2002/03 are presented below followed by key financial information and performance indicators for CMS operations during financial year 2002/03 (April 02 to March 03). A comparative analysis with previous years could not be performed due to lack of information from previous years. Table 8 below shows key financial information relating to the operation of CMS and Table 9 provides a set of key financial indicators developed based on financial information for CMS operations during FY 02/03.

Table 8: Key CMS Financial Information

<table>
<thead>
<tr>
<th>Description</th>
<th>Value (N$)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total value of drugs and supplies issued</td>
<td>91,975,733.03</td>
<td></td>
</tr>
<tr>
<td>Total Salary Costs</td>
<td>3,135,341.00</td>
<td>58%</td>
</tr>
<tr>
<td>Total Non Salary Operating Costs(^{26})</td>
<td>2,240,844.48</td>
<td>42%</td>
</tr>
<tr>
<td><strong>Total operating costs</strong></td>
<td><strong>5,376,185.48</strong></td>
<td><strong>100%</strong></td>
</tr>
<tr>
<td>Total value of drugs and supplies received through purchases</td>
<td>94,993,329.97</td>
<td>96%</td>
</tr>
<tr>
<td>Total value of drugs and supplies received through donation</td>
<td>3,913,157.58</td>
<td>4%</td>
</tr>
<tr>
<td><strong>Total value of drugs and supplies received from all sources</strong></td>
<td><strong>98,906,487.55</strong></td>
<td><strong>100%</strong></td>
</tr>
<tr>
<td>Value of beginning usable inventory</td>
<td>40,013,192.05</td>
<td>100%</td>
</tr>
<tr>
<td>Value of ending usable inventory</td>
<td>40,008,368.77</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Value of average inventory</strong></td>
<td><strong>40,010,780.41</strong></td>
<td><strong>100%</strong></td>
</tr>
<tr>
<td>Expired Stock</td>
<td>529,029.00</td>
<td>8.6%</td>
</tr>
<tr>
<td>Damaged Stock</td>
<td>20,564.57</td>
<td>0.3%</td>
</tr>
<tr>
<td>Shortages</td>
<td>5,571,118.62</td>
<td>91%</td>
</tr>
<tr>
<td><strong>Total value of inventory losses</strong></td>
<td><strong>6,120,712.19</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

\(^{25}\) Does not include costs of operating any of the RMSs
\(^{26}\) Costs associated with maintaining the stores, taxes, rates and port clearing charges, electricity, water, staff welfare, training and other stock holding costs are not included in the operating costs because they were not available
Table 9: Key Financial and Operational Indicators for CMS

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total operating costs as a % of the value of issues</td>
<td>5.8%</td>
</tr>
<tr>
<td>Total operating costs as a % of average inventory value</td>
<td>13.4%</td>
</tr>
<tr>
<td>Total value of inventory losses as a % of value of issues</td>
<td>6.7%</td>
</tr>
<tr>
<td>Total value of inventory losses as a % of average inventory</td>
<td>15.3%</td>
</tr>
<tr>
<td>Value of supplies procured as a % of total value of receipts</td>
<td>107.5%</td>
</tr>
<tr>
<td>Total salaries as a % of total operating costs</td>
<td>58.3%</td>
</tr>
<tr>
<td>Inventory turnover ratio</td>
<td>2.5</td>
</tr>
<tr>
<td>% time out of stock for tracer drugs over recent 12 month period</td>
<td>3.4%</td>
</tr>
<tr>
<td>% of tracer products that corresponded with inventory records</td>
<td>34%</td>
</tr>
<tr>
<td>% of tracer drugs in stock at time of survey</td>
<td>91%</td>
</tr>
<tr>
<td>Opportunity cost of inventory tied up</td>
<td>N$2,000,539.02</td>
</tr>
</tbody>
</table>

3.1.7.2.1.1 Operating Costs

The total value of operating costs as a percentage of the value of issues for the financial year 2002/03 was 5.8%. This is a key indicator and seems favorable, indicating that the CMS’s total cost of operating in relation to value of issues is low. It must however, be noted that other stockholding costs such as costs associated with maintaining the stores, taxes, rates and port clearing charges, electricity, water, staff welfare, and training are not included in the operating costs above. If these are factored in, the actual operating costs of the CMS will be higher than reported. A further analysis of the costs of operating the CMS needs to be conducted using the Total Variable Costs Analysis tool to accurately determine the efficiency of the CMS. Salary associated costs accounted for 65% of the costs of the CMS.

Chart 5: Operational Costs of the CMS – FY02/03

Non-salary operating costs of the CMS were made up of vehicle running and maintenance (N$665,826; 39%), Office running expenses (N$323,390; 19%), travel and subsistence (N$306,980; 18%), telephone (N$89,554; 5%) and miscellaneous expenses (N$305,501; 18%). The opportunity cost of inventory on hand is about N$2M27 which is about 5% of average inventory and 2% of total issues.

27 Average inventory multiplied by average market rate
3.1.7.2.1.2 Inventory Losses

In FY 02/03 total inventory losses amounted to N$6,120,712; i.e. 6.7% of total issues and 15.3% of average inventory. This was composed of losses due to expiry (8.6%), damaged stock (0.3%) and shortages (91%).

Inventory losses due to shortages were significantly high, accounting for 6.7% of total issues and 15.3% of average inventory and are higher than the operating costs of the CMS. This implies that the value of goods “lost” by the CMS in FY02/03 was more than the cost of operating the CMS in the same year. The causes of this huge loss could not be ascertained, however, this finding reinforces unsubstantiated assertions that there is a significant level of pilfering in the CMS. Information available at the CMS suggested that persons found to be perpetrating such acts are not disciplined. Over the past few years a significant number of such cases had been reported for action. It is worth noting that the head of the CMS does not have the power to exercise disciplinary action over staff.
3.1.7.3 Improving Financial Management at CMS

The role of financial management in ensuring the continued availability of pharmaceuticals in Namibia cannot be understated. This role will become more significant with the scale up of HIV/AIDS activities and the provision of funds from non traditional sources such as Emergency Plan and the Global Fund for the procurement of pharmaceuticals. To meet the accountability requirements for these and possibly other funding sources, it will be necessary to put in place an accounting system that will be able to provide the required financial information.

As part of the pharmaceutical sector assessment, a financial audit was commissioned to identify the constraints to the effective operation of the Trade Account of the CMS and make recommendations for improvement. The external audit was to address two types of issues – Definition/allocation of Trade Account management responsibilities and established operating procedures, and adherence to established procedures and accounting rules and regulations. The report of the audit is available as a separate document.

3.1.8 Human Resources

All systems and procedures are as good as those who operate them, since everything is achieved through people. One of the more important areas to focus on is to building a strong team at CMS and other facilities, which are well trained and motivated to take on the functions recommended in this report. If this prerequisite is not sufficiently met, money, time and effort expended in developing and implementing new systems would yield poor dividends.

Table 10 shows the current staffing levels, and approved positions at CMS Windhoek. As at the time of the assessment, five positions - Distribution Pharmacist, Accountant, one Pharmacist’s Assistant and two work hands - were vacant at the CMS. Two of the most important positions, namely, the Chief Pharmacist and the Procurement and Tender Pharmacist were filled by expatriates on two-year contracts. Security services are outsourced to a private security company that provides four guards during day and two at night.

Table 10: CMS Personnel Position as at November 2003

<table>
<thead>
<tr>
<th>Position</th>
<th>Number Approved</th>
<th>Number Filled</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Chief Pharmacist</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2 Tender &amp; Procurement Pharmacist</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>3 Distribution Pharmacist</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>4 Pharmacist’s Assistant</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>5 Senior Accountant</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>6 Accountant</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>7 Assistant Accountant</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>8 Chief Clerk</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>9 Clerk</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>10 Order Entry Clerk</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>11 Record Clerk</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>12 Typist</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>13 Work hands</td>
<td>17</td>
<td>15</td>
</tr>
<tr>
<td>14 Drivers</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>15 Cleaners</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>48</strong></td>
<td><strong>44</strong></td>
</tr>
</tbody>
</table>
CMS has difficulty in filling vacancies even though unemployment in Namibia is relatively high at over 30%. This is attributed to the fact that the CMS operates as a unit under the MOHSS, and is not in allowed to recruit directly from the labor market. All personnel are recruited and assigned to CMS by the Human Resources Unit of the MOHSS. The public sector is not able to attract and retain Namibian pharmacists as required and the reasons for this situation were not readily clear. The high turnover of pharmacists and other categories of workers at CMS, and indeed in the pharmacy sector, may be attributed to an apparent lack of recognition/appreciation of the position and profession of Pharmacy in the MoHSS, poor job satisfaction, excessive work loads and lack of career development and training opportunities. This has resulted in very low morale among workers, low productivity and the unwillingness to employ innovative methods of work.

For the interventions planned to be successful there is an urgent need to undertake a thorough investigation of the staffing problems at CMS and the pharmaceutical sector in the MoHSS, revise job descriptions and recommend compensation schemes in line with the new systems and procedures recommended in this report. Top management at MOHSS has to recognize the importance of the role played by the CMS in providing pharmaceutical services to the nation, the financial burden on the tax payers and therefore support the urgent need to develop human resources at the CMS to make it more efficient. Hence, such an exercise should be done with the full and true blessing and commitment of those responsible for oversight of the CMS and the pharmaceutical sector in the MOHSS.

### 3.2 Oshakati Regional Medical Store

#### 3.2.1 Introduction

Oshakati RMS is located about 720 Kms from Windhoek in Northwest Namibia. The Oshakati Regional Medical Store was initially located on the premises of the Oshakati District Hospital until October 2003 when it moved into a newly refurbished old army warehouse, also in Oshakati. Prior to August 2003, the Oshakati RMS was operating under the CMS, but it is now administratively under the Regional Health Office (RHO). The RMS has no budget of its own and operates with funds from the Oshakati RHO budget. According to the Pharmacist in charge of the RMS, the other three regions do not contribute towards the RMS budget even though their facilities are served by the RMS. The key reasons for this change in administrative structure were not very clear to the assessment team.

The Oshakati RMS serves four regions, namely, Oshikoto, Oshana, Omusati and Ohangwena with a population that forms about 30% of the total national population. The Oshakati Regional Medical Stores serves eight (8) hospitals and fifty-two (52) health centers and clinics. However, Tsumeb and Oshakati Hospitals do not patronize the Oshakati Regional Medical Stores, but obtain their needs directly from CMS in Windhoek. These two hospitals requirements may equal about 50% of supplies provided by RMS to the sixty (60) facilities currently served. The reasons for the two hospitals not patronizing the Oshakati Regional Medical Stores were not clear, however, it may relate to past non-performance of the Oshakati Regional Medical Stores. The refurbished RMS at Oshakati has sufficient capacity to service these two hospitals, if a decision is made to do so and the necessary systems are put in place.
3.2.2 Storekeeping and Inventory Control
The Oshakati Regional Medical Stores does not maintain up to date records on drug receipts, issues and stock balances. There is also no computerized inventory control system in place. The pharmacist in charge explained that it was originally planned to install the system at CMS in the two RMSs, however, when the RMS were administratively placed under the regions, this was not implemented. However, the pharmacist in charge had developed a FoxPro based invoicing system that was used to bill clients. However, this was not functioning at the time of the assessment.

An examination of available stock records showed that they have not been properly maintained prior to moving to the new premises. The RMS does not raise GRNs for supplies received from CMS. Lack of up to date and accurate stock records is indeed a serious problem for a RMS that serves nearly 40% of the total population of Namibia. Due to this lack of proper records, it was not possible to obtain measures for the selected pharmaceutical management indicators.

There are no established systems for quantification of requirements, since there are no records to establish reliable data on “Estimated Monthly Consumption” for individual products. Some minimum and maximum stock levels, ostensibly corresponding to two and four month’s usage is available, however, these have not been updated for five (5) years and hence serve no useful purpose.

Formal orders representing about four month’s requirements are placed with CMS once every six weeks, which works out to approximately nine orders per year. In addition, a number of emergency orders are placed in between the formal orders. This has become a regular feature due to a combination of poor quantification and inventory control practices. The Oshakati Regional Medical Stores cannot depend on the accuracy of stock records, hence stock balances of all items requiring reordering have to be verified through physical stock counts prior to placing orders with CMS. This procedure consumes valuable resources at a time when the Oshakati Regional Medical Stores lacks qualified and experienced staff.

3.2.3 Distribution
Approximately 90% of supplies are delivered by the Oshakati Regional Medical Stores to health facilities, while the remaining 10% is collected by the facilities. The Oshakati Regional Medical Stores uses three delivery routes for distribution of drugs to the health facilities. The furthest user unit served by the RMS is situated 200 kms from Oshakati and the turnaround time for serving this point is one day. Supply cycles have been set for individual facilities. Hospitals are expected to place orders twice a month, and other facilities such as clinics and health centers are expected to place orders once a month. The RMS is expected to have supplies ready for dispatch within seven (7) days of receiving an order from a user unit. At the time of delivery, an invoice, the order book and a dispatch note are expected to be delivered with the supplies to user units. To simplify the ordering process and forestall the situation where order books are not returned by the medical store, some facilities served by the Oshakati Regional Medical Stores do not use the “Order Book” but use a duplicate book in which they write their orders and submit the original to the store for services.

Oshakati RMS uses three trucks (1, 5 and 16 Tons) for distribution as well as picking up supplies from CMS in Windhoek when required. The ages of these vehicles range from seven (7) to fifteen (15) years and their maintenance costs are relatively high. The Pharmacist in
charge indicated that at least one 10 ton truck is urgently needed for distribution and another 4x4 pickup truck for undertaking supervisory visits.

3.2.4 Human Resources
Of a total of twenty-seven (27) approved positions twenty-three (23) are currently filled. Out of these, the important positions of Principal Pharmacist, Senior Pharmacist and Pharmacist’s Assistant are all vacant. This has resulted in a serious human resource capacity problem at the RMS and hence immediate steps are warranted to fill the vacant positions and provide system specific training on all aspects of pharmaceutical management to new and existing staff and to motivate them to be more productive.

3.3 Rundu Regional Medical Store

3.3.1 Introduction
The Rundu Regional Medical Store is situated 700 kms from Windhoek in the North eastern part of Namibia, close to the Angolan border. The Rundu Regional Medical Store moved into the present new facility in June 2002. As is the case in Oshakati RMS, Rundu RMS was also functioning under the CMS until 2002 when administrative control of the store was transferred to the Regional Health Office. The RMS has no budget of its own and operates with funds released from the Rundu RHO budget.

The Rundu Regional Medical Store serves two regions, Caprivi and Kavango. The RMS provides normal supplies to one (1) hospital, thirty-one (31) health centers and clinics and emergency supplies to five hospitals.

3.3.2 Storekeeping and Inventory Control
In contrast to the RMS at Oshakati, stock records at Rundu were very well maintained. Out of 34 tracer drugs, stock records relating to 13 drugs, or 57% exactly corresponded with a count of physical inventory and average percentage of a set of unexpired tracer drugs available in stock at the time of visiting the RMS was 100%.

Formal orders ostensibly representing about four month’s needs are placed with CMS once in every six weeks, which works out to approximately nine orders per year. In addition, a number of emergency orders are placed in between formal orders. This situation could be overcome by strengthening quantification and inventory control systems.

3.3.3 Distribution
Approximately 30% of supplies are delivered by the RMS, while the remaining 70% is collected by health facilities. Since the RMS has only one 10 ton truck for distribution and some approach roads leading to health facilities are poor, most drugs are collected from Rundu Regional Medical Store. The RMS uses two delivery routes for distribution. The furthest user unit served by the RMS is located 250 kms from Rundu and the turnaround time for serving this point is one day. Supply cycles have been set for individual facilities. Hospitals are expected to place orders once in three weeks, and other facilities such as clinics and health centers are expected to place orders once a week. The Rundu Regional Medical Store is expected to have supplies ready for dispatch within seven days of receiving an order from a user unit. At the time of delivery, the order book and a delivery note are expected to be forwarded with supplies to user units. Hospitals are invoiced once in three months. In the case of the Lutheran Hospital and the two Catholic Hospitals, checks are forwarded to RMS against supplies.
The Rundu Regional Medical Store has only one 10-ton truck for distribution as well as picking up supplies from Windhoek when required. This truck is over 10 years old and is available only about 50% of the time due to down time for maintenance and repair. The Pharmacist in charge indicated that at least one 20-ton truck was urgently required for distribution and another 4x4 pickup truck for distribution and supervisory visits.

3.3.4 Human Resources
Of a total of thirteen (13) approved positions, twelve (12) are currently filled. The vacant position of a Pharmacist needs to be urgently filled. In addition, the Pharmacist in charge expressed the need for the following additional personnel –

- Pharmacists’ Assistants (2)
- Accountant (1)
- Work Hands (2)

The Rundu RMS is performing well and should be provided with the necessary facilities and encouragement to improve on what they are doing. Immediate steps should be taken to fill vacant and additional positions and provide system specific training on all aspects of pharmaceutical management to existing staff and motivate staff to perform even better.

3.4 Comparison of Inventory Management in MoHSS Storage and Health Facilities
The foregoing discussion of the supply system management at the CMS and RMS and of health facilities presented in Section 4.1 reveals varied levels of functioning of the inventory management systems. Stock record keeping systems that are significantly inaccurate are of limited use for monitoring the status of inventory, estimating future needs, and for controlling leakage and wastage of stock. Due to the lack of updated sock records at the Oshakati Medical stores, some of the measures could not be calculated for the OMS.

The weighted average percentage of inventory variation measures the degree to which stock record keeping systems reflect the real status of drugs in stock. This indicator is the weighted average percentage difference between recorded stock levels and actual physical counts for a set of indicator drugs. This is also known as average piece variation. As a measure, it indicates the overall correspondence between records and real stock levels. After adjusting for issues and receipts not yet entered in the records, the average percentage of inventory variation between the stock records and the physical count is presented in Chart 8.
Chart 8: Weighted Average Percent of Inventory Variation in MoHSS Storage and Health facilities

Chart 9 shows the average percentage of individual variation at the various facilities after adjusting for items not yet entered in the records. This indicator measures the degree to which stock record keeping systems reflect the real status of drugs in stock. As a measure, it indicates the magnitude of discrepancy between records and the real stock levels of individual items. This indicator is the weighted average of the absolute differences between recorded stock levels and physical counts for the same list of indicator drugs.

Chart 9: Average percent of Individual Variation for In MoHSS Storage and Health Facilities
The average percentage of individual variation for the set of indicator drugs was calculated as 12% for the CMS, 1.55% for Rundu Medical Store and an average 29% for the health facilities surveyed. This wide variation reflects the quality of inventory record management practices in the various institutions.

The average percentage of stock records that corresponds with physical counts is useful for clarifying the quality of the stock record keeping system in cases where average variations and variance are skewed by a small number of items. This is the average percentage of in-stock indicator drug inventory records which corresponds exactly with physical stock count for a set of indicator drugs.

Chart 10: Average Percent of Stock Records that Corresponds with Physical Counts in MoHSS Storage and Health Facilities

The percentage of records that corresponded exactly with physical counts was 34% (N=35) at the CMS, 57% (N=23) at the Rundu Medical Store (RMS) and 0% Oshakati Medical Store (OMS). The average percentage of health facility records that corresponded exactly with physical counts was 70%, with the range among facilities from 34% to 97%. Chart 10 presents a comparison between the various facilities and shows that the quality of stock records at health facilities is better than that of the medical stores.

The availability of indicator drugs measures a procurement and distribution system's ultimate effectiveness in fulfilling its basic mission; that is, providing drugs at health facilities. A drug is defined as available if even one unit of unexpired product is in stock. Since expired drugs are inappropriate for use in almost all situations, they are not counted as stock available for use. In the survey of 12 health facilities, where 23 indicator products were confirmed to be normally stocked, an average of 96% of the listed products was found in stock. The range among facilities was 93% to 100%.

In summary, Chart 11 presents a comparison of the some inventory management parameters measured for the various institutions. The findings from the survey indicate that, even though
the indicators measured suggest weak management of inventory records, availability of tracer drugs was found to be relatively good.

**Chart 11: Comparison of Inventory Variation and Stock Records Corresponding to Physical Counts in MoHSS Storage and Health Facilities**

![Chart 11](chart11.png)

The foregoing indicates that inventory management at the CMS is not optimal. Only 34% of stock records matched physical stock with an individual variation of 12% and weighted average variation of 14%. Oshakati Medical Stores has the weakest system. The individual variation in records was 89% with 0% of records corresponding to physical stocks. Rundu Medical Store had the best system. With corresponding records on 57% they reported individual variation of only 1.55% and weighted variation of 0.0%. This indicates that the magnitude of discrepancy between the non-matching records was minimal. The health facilities seem to do better in terms of keeping the records straight, and thus had 70% of stock records corresponding to physical stocks, with individual variation of 29% and weighted variation of 10%.

In general this reflects an attempt by the facilities to maintain inventory records; however, due to the constraints of a lack of standard procedures and tools, lack of adequate numbers of appropriately qualified staff and high work load, these records tend not to be given the needed attention and maintenance. However, the finding of relatively high levels of availability of tracer drugs indicates an attempt to ensure that important medicines needed to meet the needs of health care delivery are always made available, probably through placement of frequent orders and overstocking.

Chart 12 presents indicates that drug availability is good with relatively low times out of stock of the tracer drugs assessed in the CMS (3.4%) and the health facilities (Average 0.94%). Time out of stock could not be computed for the two regional medical stores due to lack of records.
Chart 12: Comparison of Availability and Time Out of Stock of Tracer Drugs in MoHSS Storage and Health facilities
CHAPTER 4:
PHARMACEUTICAL MANAGEMENT AT HEALTH FACILITIES

4.1 Management Support Systems

4.1.1 Human Resources
Seven of the 12 hospitals did not have a pharmacist at the time of the assessment and one hospital had neither a pharmacist nor a pharmacists’ assistant. Of the five mission hospitals assessed only one had an establishment for a pharmacist post, however, this post was not filled. In total, the 12 facilities had 19 established pharmacist posts with only 39% filled and 68% of pharmacists’ assistant posts filled. 8 out of 9 pharmacists’ assistant posts were filled at the five mission hospitals and 19 out of 31 in the rest of the facilities. Overall, 58% of all pharmacy professional positions (pharmacist and pharmacists’ assistants) were filled. This lack of pharmacists or pharmacists’ assistants has created the need for lower cadre of staff, to carry out responsibilities that are far beyond their competence and capability. These personnel lack the authority and education to accomplish the tasks and this added responsibility and workload is not compensated for.

In addition to the MoHSS employed pharmacists, there were a total of 13 volunteer Cuban pharmacists working at the facilities assessed. Inclusion of these pharmacists in the total count of available manpower indicates that over 100% of the pharmacy positions are filled. However, this may mislead to the conclusion that there is enough manpower available; an observation of the workload at the facilities indicates a need for increased manpower. This observation is supported by the finding that 10 of the 12 (83%) representatives questioned at the pharmacies expressed the opinion that pharmacy staffing levels were inadequate. Every representative interviewed stated that they would need even more staff to handle the PMTCT and ART programs. There was however, no consensus on what would be the desired positions or responsibilities. A proper job evaluation is required to ascertain the actual staffing norms required.

Cuban volunteers are not required to be registered in Namibia or take any qualifying examinations; some do not have adequate language skills, and they do not receive adequate orientation and training when they are engaged, and they are not accorded the same level of respect by peers, other hospital staff and patients as the employed pharmacists. In addition, by the time the Cuban pharmacists become conversant with the system and are able to fully contribute, their contract term (typically two years) may be ended and they have to return to Cuba. Not all volunteers can be lumped together under this characterization however, during the assessment one Cuban volunteer, who was very knowledgeable in pharmacy management and had the necessary language skills, indicated that she was not given the authority to implement suggested improvements in her pharmacy.

One of the major findings of the pre-assessment was that motivation and retention was low and recruitment of pharmacists and other professional staff was difficult. Respondents were questioned on the basis for these difficulties and the responses obtained are presented in Table 11.
Table 11: Problems with Recruitment and Retention

<table>
<thead>
<tr>
<th>Problems</th>
<th>Frequency (n=12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inadequate salary</td>
<td>6</td>
</tr>
<tr>
<td>Lack of training and advancement opportunities</td>
<td>4</td>
</tr>
<tr>
<td>Geographic location and/or poor accommodations</td>
<td>3</td>
</tr>
<tr>
<td>High workload</td>
<td>3</td>
</tr>
<tr>
<td>Lengthy recruitment process for foreign pharmacists</td>
<td>3</td>
</tr>
<tr>
<td>Lack of supervision</td>
<td>2</td>
</tr>
<tr>
<td>Not enough pharmacists’ assistants being trained</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 11 indicates that inadequate salary was the most frequently mentioned (50%) cause of problems of recruitment and retention of pharmacy professionals; however, there was little evidence to support this finding. Our observation was that there was no significant difference in compensation packages between the public and private sectors, even though, respondents maintained that there was a three fold difference. Fixed overtime allowances for pharmacists in the public sector were increased by 12% to about 60% of the base salary in February 2004, hence base salaries plus fixed overtime have ranged between NAS14,000 and NAS21,500 per month. Other benefits provided to public sector staff include Medical AID, a housing support scheme, which is available to Namibian nationals only and motor vehicle allowance available for Chief Pharmacists and above. Non Namibia pharmacists are provided with accommodation; however, this is typically not available outside the capital and main towns. In comparison, salaries in the private sector range from NAS10,000/month for a pharmacist working for a private pharmacy owner to between NAS12,000 and NAS15,000/month working as a staff pharmacist in a hospital up to NAS30,000/month as a pharmacy owner. However, most employers in the private retail sector do not provide Medical AID, which can range from NAS1,500 to NAS2,500 per month, nor housing support. Private hospitals have varying benefit packages for staff.28

The lack of training and advancement opportunities was cited as a major cause of problems with recruitment and retention of pharmacy professionals. The Pharmacists’ assistants’ training is not accredited and does not transfer to college credit nor can it be used to support application to professional programs, in addition, there is inadequate in-service training for professionals. Until recently, there was no professional progression for pharmacist’s assistants and the recently created positions of senior and principal pharmacists’ assistant posts were yet to be implemented at the time of the assessment. There are no career development opportunities for pharmacists’ assistants.

CHS receives subsidies for payment of employee salaries from the MoHSS, but do not receive subsidies for all other benefits (housing, car allowance, medical aid and pension). CHS pays for these benefits from its own budget. Allowances and incentives for volunteers are inadequate, for example, Cuban pharmacists do not receive subsidies for food and are placed in undesirable regions which lack suitable accommodations.

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28 Source: Interview with a representative of the Pharmaceutical Society of Namibia
4.1.1 Training

Formal in-service training was not the norm at the twelve facilities. Staff from only two (17%) facilities had received some form of on-the-job training. One of the staff received training from the PMO and the other staff member described an on-the-job training by the chief pharmacist to all staff members of that facility. Other pharmacists did give informal training to clerks, work hands, nurses and pharmacists’ assistants. Provision of training was closely linked to the presence of a pharmacist at the facility. With the decrease in numbers of pharmacists and regional pharmacist, many staff members commented that training on the job used to be available, but was no longer due to the loss of the pharmacist.

Due to the high workload and the lack of staff, pharmacy personnel are not able to take advantage of training opportunities outside their facilities, since they cannot leave their routine responsibilities to attend these sessions. Foreign pharmacists are not permitted to attend training programs or other activities outside the country with government sanctioned funds.

Most respondents indicated a need for further training in stores management, rational drug use and the use of computers. Other suggested training topics were inventory management, procurement and ordering, counseling/adherence, customer care/interpersonal communications, budgeting, dispensing, compounding, mathematics, and adverse drug reactions.

Half of the facilities had had at least one pharmacy staff member trained in HIV/AIDS-related issues. Even so, all respondents in the pharmacy indicated the need for further training in HIV/AIDS related issues such as HIV/AIDS, opportunistic infections, sexually transmitted infections, the rational use and monitoring of antiretrovirals, medication use counseling and adherence, and the management of the ARVs.

4.1.2 Monitoring and Evaluation/Management Information Systems

Five of the thirteen regions in Namibia had a regional pharmacist at the time of the assessment. These regional pharmacist positions are administered under the respective regional health administrations and do not report to a central body such as the Division of Pharmacy Services directly. Regional pharmacists are responsible for pharmaceutical supply management and budgeting in the region, are members of Regional Management Teams, and in addition work at some health facilities in their regions. Regional pharmacists are also responsible for the pharmacy section of the region’s and at times a health facility’s annual report. The annual report has a list of pharmaceutical management indicators, although it is unclear if the same indicators are used by each regional pharmacist or health facility to complete the annual report.

Regional pharmacists have a supervisory list that is used to monitor the work of pharmacies in the region. Visiting all pharmacies for supervision, training, and proper management of the supply system have proved difficult due to the geography of regions and/or workload. This situation has led to a lack of disciplinary action and a critical gap in monitoring and supervision. Regional pharmacists used to hold annual coordinating meetings with all other pharmacists in the public sector, but these meetings have not been held since 2002, due to the decreased numbers of regional pharmacists and increased workloads.

With only 39% of pharmacy posts filled, pharmacists are overwhelmed with the day-to-day running of the hospital pharmacy to be able to gather data or analyze monitoring and evaluation information or to represent a strong authority and enforcer of facility policies and
procedures. This was confirmed by the finding that a list of indicators to monitor rational drug use at facilities which was developed a few years ago was implemented in only one facility out of the 12 assessed.

Five of the twelve facilities had a computer in the pharmacy but, the lack of a standard electronic system for gathering and analyzing information has led staff to invent their own unique methods and applications based on software available on the computers. Four of these pharmacies used the Microsoft Excel for data collection and analysis. Three pharmacies had access to e-mail and used it to send and receive stock information from the Central Medical Store, but with no link to the CMS inventory management systems, Syspro™. Access to the Health Management Information System (HMIS) was limited, with only two pharmacies with access to HMIS data.

4.1.3 Infrastructure
The suitability and availability of required infrastructure for pharmaceutical management varied greatly within the 12 hospitals, ranging from one facility pharmacy lacking in every area assessed and thus requiring dramatic changes, to newly built pharmacies which only needed more furniture and/or maintenance. Table 12 below describes the infrastructure areas assessed and the findings for each hospital.

Table 12 Status of Infrastructure at Health Facilities Assessed

<table>
<thead>
<tr>
<th>Infrastructure Area Assessed</th>
<th>Total No of Facilities with Adequate Infrastructure</th>
<th>% of Facilities (N=12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Space</td>
<td>8</td>
<td>67%</td>
</tr>
<tr>
<td>Maintenance</td>
<td>8</td>
<td>67%</td>
</tr>
<tr>
<td>Security(^{29})</td>
<td>4</td>
<td>33%</td>
</tr>
<tr>
<td>Electricity</td>
<td>11</td>
<td>92%</td>
</tr>
<tr>
<td>Running Water</td>
<td>9</td>
<td>75%</td>
</tr>
<tr>
<td>Ventilation/Temperature</td>
<td>6</td>
<td>50%</td>
</tr>
<tr>
<td>Refrigerator</td>
<td>10</td>
<td>83%</td>
</tr>
<tr>
<td>Dispensing Area</td>
<td>9</td>
<td>75%</td>
</tr>
<tr>
<td>Confidentiality</td>
<td>3</td>
<td>25%</td>
</tr>
<tr>
<td>Patient Waiting Area</td>
<td>9</td>
<td>75%</td>
</tr>
</tbody>
</table>

Areas for confidential counseling were lacking at most pharmacies and in facilities with no area for the dispenser to talk to the patient privately, the conversation did not occur, occurred at the dispensing window audible to other patients, or patients would be asked to enter the pharmacy, thus compromising the security of the pharmacy.

Nine of the 12 facilities assessed had the physical capacity to maintain security of the pharmacies (e.g. burglar bars on windows and lockable, solid doors and dispensing windows), but at the time of assessment five of these pharmacies were not utilizing these structures. Doors to the pharmacy were kept unlocked and non-pharmacy staff were able to enter the pharmacy area uninhibited or checked. Of the three other pharmacies Oshakati had weak doors, due to the pharmacy been broken into previously; Katatura had weak burglar

\(^{29}\) Represents pharmacies that have capacity for security, but at the time of the assessment secure practices were not followed
proof bars on the windows and weak wooden doors on dispensing windows as did Onandjokwe which had very poor infrastructure to keep the dispensary secure.

Six of the pharmacies had inconsistent functioning air conditioning and at the time of the assessment two pharmacies had an internal temperature of 32°C. Although most pharmacies did have a thermometer visible and mentioned that they visually checked the temperature, only one consistently kept a record of temperature in the refrigerators/cold rooms, stores and dispensaries.

Seven of the 12 facilities require secure areas for the storage of ARVs. At the time of the assessment these dispensaries lacked the space for the storage of the ARVs, and the available space cannot accommodate an expansion to the programs. In addition the storage area was not secure. At one facility, boxes of ARVs were found in a hallway that opened up to the outside with the doors to the outside unlocked, due to the lack of space in the ARV cupboard.

Dispensing areas were adequate for nine of the twelve facilities visited. The rest require reorganization, expansion or new dispensing windows for effective dispensing activities. Most dispensaries will require the provision of furniture such as book shelves, chairs, and tables. Dispensing and manufacturing equipment such as dispensing trays, scales and liquid measures were also lacking.

Maintenance of the dispensaries was adequate at 9 facilities while 3 had difficulty with the timeliness of the maintenance staff and the quality of work. Onandjokwe stated that they have had plans for renovation since 1990, but no progress had been made. Responsibility for physical infrastructure, security and maintenance of air conditioning and cold rooms lies with the Ministry of Works.

4.1.4 Resource Centers, Policies and Guidelines
Ten of the twelve (83%) pharmacies had designated areas for reference materials and other resources. The most frequent resource available to pharmacy staff was text books (75%) however; most of them were old editions. The availability of various national treatment guidelines and the National Drug Policy was also assessed at each pharmacy. Chart 13 shows the availability of some national policies and guidelines documents at the pharmacy at the time of visit.
National Guidelines for Anti-Retroviral Therapy and Guidelines for the Clinical Management of HIV and AIDS were not physically present at 25% of the dispensaries at the time of the assessment.

SOPs exist for most, if not all, pharmacy practice areas. These SOPs were present in hospitals, but since the Namibia pharmacy practice SOPs are not incorporated in one document not all SOPs were available at every site, subsequently, certain facilities had developed their own procedures.

4.2 Drug Supply System

The drug supply system within facilities consists of the following: ordering, inventory management and distribution. Selection and procurement activities were limited and true quantification was not practiced.

Selection is not required for the facilities assessed since Namibia has an updated Essential Medicine list (NEMList), which lists medicines to be used at each level of care. MoHSS facilities are not allowed to order items which are not included in the NEMList or procure outside the CMS/RMS system. Facilities in the mission sector (Lutheran and Catholic Health services, 5 of the 12 assessed), however, can select and procure medicines from outside the NEMList and the CMS/RMS system. “Buy-outs” mostly occur due to shortages in the supply system. A motivation for each product not on the NEMList needs to be written by the prescriber for the pharmacy to procure the selected item(s).

Other areas of the drug supply system in the health facilities are described in further detail below.

4.2.1 Inventory Management

Inventory management was poor at every level and each hospital complained of the lack of proper inventory control practices. Inventory practices were described as the use of stock cards for management and ordering. Minimum and Maximum inventory levels were described as part of inventory management practices in half of the facilities visited, yet, most of these facilities had not reviewed their minimum and maximum stock levels for years.
Eight facility representatives did not know how many items were in stock at their facility, 10 stated that each item in the store had a stock card, but upon review, only seven of these facilities had stock cards for the items on the tracer list (excluding male and female condoms, vaccines and ORS). One facility did not have any stock cards - this was also a facility that did not have a pharmacist.

Most facilities had a regular internal audit of the inventory, which involved checking the physical stock when it was time to order new stock. Stock cards were corrected to reflect the physical stock on hand in case of a discrepancy. External audit of the inventory was not done in all facilities, although one respondent stated that it used to occur at some time in the past. Two facilities performed an annual internal audit of the stock and discrepancies were recorded and closely monitored.

Chart 14 presents the accuracy of the maintenance of the stock cards at eleven facilities assessed; one facility did not keep records. The green bars represent the percent of recorded stock count that corresponds to the physical count and the orange; (pattern) bars represent the variations in the differences between recorded and physical counts.

**Chart 14: Variation of Stock Control Parameters at Selected Health Facilities**

Seven facilities (58%) had above 70% of their stock records accurate with one facility with 97% accuracy and four facilities (33%) had between 34% and 55% accuracy rate. Most of the facilities with accuracy rate above 90% showed very little variance between the actual stock figures and the stock balances on the card, probably due to computational errors and not a lack of proper inventory management. Three of health facilities had both high levels of inaccurate recordings, with wide variations between recorded balances and physical counts. These findings indicate that one third of the facilities had none or very poor inventory management practices.

Another major finding of the assessment was that none of the facilities assessed kept a record of medicines dispensed to patients or inventory losses due to pilferage, expiry or other factors.
Availability of drugs at the facilities assessed was on the average 99% of the products on the tracer list with the range among facilities being 93% to 100%. A drug is defined as available if even one unit of unexpired product is in stock. This finding illustrates that even though the facilities do not maintain accurate stock records, they maintain adequate levels of the most important drugs needed for the delivery of healthcare.

Time out of stock, or stockout time, is defined as the number of days that a product was not present in a warehouse or health facility over a recent twelve month period (usually the 12 months preceding the one during which the assessment takes place). To be considered a stockout, there must have been none of an unexpired drug in stock. Percentage of time out of stock is defined as the percentage of days during a 12 month period that a drug has been out of stock based on inventory records. Chart 15 below illustrates that, the average percent time out of stock for the tracer products was 0.94% with a range of 0% to 1.96%.

Chart 15: Time out of Stock for Indicator Drugs at Selected Health Facilities

The apparent high level of availability with associated low rate of time out of stock was not in conformity with anecdotal information gathered during the assessment, which suggested that health facilities were usually stocked out of medicines. However, this situation may have been achieved through frequent ordering and overstocking. This assumption was confirmed by facility representatives at a verification workshop in February30 who stated that most facilities make use of many interim orders to keep items in stock and usually inflate orders. Available figures from six facilities indicted that average inventory losses due to expiry was 0.96%. However, further analysis is required to determine the level of overstocking, expiry and inefficient ordering that this may entail.

Antiretrovirals (ARVs) are classified as schedule 431 medications but, upon directives of the Division of Pharmaceutical Services, they are managed as Schedule 7 medications (narcotics) and registers similar to those used for Schedule 7 medicines are to be used when dispensing ARVs. Average percentage of unexpired ARVs available in health facilities was 100% compared to 98% for other indicator drugs and the average percentage of stock records that corresponded with physical count of ARVs was 78%, compared to 69% of other indicator drugs. Inventory management indicators for the ARVs were only slightly better then those of non-ARVs as shown in Chart 16.

---
30 Refer meeting report
31 Refer classification system/law/regulation
### Chart 16: Comparison of Non-ARV and ARV Inventory Indicators at Selected Health Facilities

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Non-ARV Stock</th>
<th>ARV Stock</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average percentage of time out of stock for a set of indicator drugs in health facilities</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>Average percentage of a set of unexpired indicator drugs available in health facilities</td>
<td>8%</td>
<td>80%</td>
</tr>
<tr>
<td>Average percentage of stock records that corresponds with physical counts for a set of indicator drugs in health facilities</td>
<td>9%</td>
<td>78%</td>
</tr>
<tr>
<td>Weighted average percentage of inventory variation for a set of indicator drugs in facilities</td>
<td>0%</td>
<td>100%</td>
</tr>
</tbody>
</table>

4.2.2 Quantification

Quantification was most frequently the responsibility of the pharmacists’ assistant due to the lack of pharmacists; however in facilities that had a pharmacist, he/she was responsible for quantifying needs. In three of the facilities assessed where there were no pharmacists, the Regional Pharmacist did the quantification at one of these facilities and the PMO was responsible in the other two.

Methods used for determining pharmaceutical needs varied among facilities, most respondents (83%) stated using the consumption method, however, described it as “looking in the order book at the amount ordered previously and adding or subtracting from this amount based upon experience” (67%) and the third most used method was based on the min/max levels. (See Chart 17)

### Chart 17: Quantification Methods in Use at Selected Health Facilities

<table>
<thead>
<tr>
<th>Method</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumption</td>
<td>83%</td>
</tr>
<tr>
<td>Morbidity</td>
<td>17%</td>
</tr>
<tr>
<td>Morbidity and consumption</td>
<td>17%</td>
</tr>
<tr>
<td>General experience</td>
<td>67%</td>
</tr>
<tr>
<td>Formula</td>
<td>33%</td>
</tr>
<tr>
<td>Min/Max</td>
<td>50%</td>
</tr>
<tr>
<td>Stock-outs</td>
<td>8%</td>
</tr>
</tbody>
</table>

Stock cards are the most often used document for determining quantities to order (75%) however, as was discussed earlier, inventory records on stock cards are often times not accurate. The second most frequently used document is the order book (50%), which again contains orders based on inaccurate stock records, previous orders or out of date min/max levels. Two respondents stated that the use of min/max levels were futile due to unreliable supplies and high turnover of prescribing staff. One respondent stated that he did not use the stock cards for determining needs due to their lack of accuracy, but reviewed the physical
stock before placing every order. Chart 18 shows the documents used in quantification at the facilities assessed.

**Chart 18: Documents Used for Quantification at Selected Health Facilities**

<table>
<thead>
<tr>
<th>Documents Used for Quantification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stock Cards</td>
</tr>
<tr>
<td>Order Books</td>
</tr>
<tr>
<td>Computer records</td>
</tr>
<tr>
<td>Budget</td>
</tr>
<tr>
<td>Physical recount and Min/Max</td>
</tr>
</tbody>
</table>

### 4.2.3 Ordering

Orders to the CMS and RMS are placed using pre-printed bound order books provided by the CMS. Health facilities that order from the CMS are scheduled to place orders once every 6 weeks and those that place orders with the RMSs are on a once a month schedule. Due to a lack of storage space needed to store medicines for one month’s use, the once-a-month ordering schedule for some of the smaller facilities was unpopular.

Three pharmacies had access to e-mail to send/receive stock information from the Medical Store, but did not use e-mail for sending orders. The most common method of placing orders with the medical stores was by a driver, i.e. delivered by hand.

The use of the order book results in a record of items and quantities ordered not being kept at the facilities. To keep such a record, facilities have to spend extra time to transcribe the orders. Five health facilities kept a separate record of the order book in the facility and four of these use MS excel software to record the orders.

Most respondents stated that, due to budget constraints administrators (i.e. PMOs, Regional Pharmacists, etc) randomly cut orders without knowledge of the facilities inventory situation, thus to compensate for these cuts, orders are inflated. Most facility representatives do not know their budget allocations to assist in planning their requirements. Respondents also stated that inflation of orders is also done to compensate for unreliable drug supply from RMS/CMS.

Another way of keeping stock on hand was to place frequent interim or emergency orders in between scheduled order times. One placed interim orders every 1 or 2 days. This particular facility is in close proximity to the CMS and can pick up new stock as they arrive. CMS notified at least half of the facilities when products are not in stock and two respondents remarked that there have been improvements in stock availability at the CMS in the last two years.

Eight of the twelve selected health facilities knew the total value of pharmaceutical procurements for financial year 2002-2003. Three of these facilities were able to provide information on the value of “buy-out” procurements. Two facilities procured from the private sector not due to stock outs at CMS/RMS, but rather for doctors who needed medications not on the NEMList.
The total value of buy-outs ranged from NAD 60,000 to NAD 129,316 in the four facilities that had this information available. The only mission facility which had both data available had used 16% of its total pharmaceutical budget on buy-outs. The two reasons stated by this facility for buy-out were stock outs at the CMS and the need for medications not on the NEMList. One health facility had a total buy-out value of NAD 109,698, but the value of total pharmaceutical procurements for the facility was not available.

4.2.4 Distribution

Orders from the CMS are typically delivered within 2 weeks. Orders from the RMSs were stated to take 2-4 weeks. One facility at the time of visit had been waiting for a RMS delivery for over 4 weeks, which happened to arrive that day.

Upon receipt of supplies from the CMS/RMS, the pharmacy staff checks the Delivery Note from the driver and verifies the serial number on the seal of the truck door and inspects the seal for evidence of tampering. The plastic seal is placed on the truck by either the CMS or the previous delivery point. If the seal has been tampered with or does not bear the correct serial number, the truck is turned back, and the delivery is not performed. The pharmacy staff then verifies the number of boxes expected on the Delivery Note, which is signed and the original copy retained at the health facility along with the invoice, picking list and order book. These documents may not always arrive with the supplies. The pharmacy staff do not typically have time to check the picking lists against the items received until after the truck has left. Items are then checked for expiry and correct quantity. The quantity delivered is written into the order book and on stock cards.

The perceptions of the health facility representatives were that CMS and RMS deliveries were incomplete both in the items delivered and percent of items delivered that were requested, although only one health facility kept a discrepancy record. Four facilities were of the opinion that all deliveries were incomplete. In the facility that maintained discrepancy data, on the average 28% of items ordered were not received, thus putting the service level at about 72%. During the assessment, a spot check of the first 97 items on one picking list for a referral hospital revealed that 20 items were not delivered due to stock out at the CMS and 11 other items were received with a quantity less then requested (14% of items received). This was described as a “good” delivery. The CMS does not process back-orders.

Three other health facilities recorded discrepancies between what was ordered and what was delivered, but used this information to report back to the CMS for processing of credit notes or to place an interim order. The CMS allows 3-5 days after deliveries to report discrepancies, however, discrepancies in the number of boxes received has to be reported at the time of delivery. Seven other health facilities stated that they had no formal system for recording discrepancies and faxed or phoned the CMS/RMS to let them know of any, when discovered.

Most respondents reported problems with the supplies that were received from the CMS. During the 12-month period preceding the assessment, all facilities assessed had received incorrect quantities of supplies from the CMS, 92% had received expired or near expired products, 50% had received damaged goods and 83% had received items they did not order, at least once. The percentages represent the average of responses. Chart 19 below presents the average of responses. With the exception of one facility, there was no record of these discrepancies at the sites.
Chart 19: Problems with Orders Received at Selected Health facilities

Chart 20 provides an overview of the distribution problems encountered by health facilities in dealing with the CMS/RMS. Two facilities reported no problems, one-third of respondents complained of stock outs, and two-thirds had a problem with transportation. Some examples of transportation problems were CMS truck break-downs, timing of deliveries, or use own transportation to pick-up orders.

Chart 20: Distribution Problems with Distribution by Medical Stores to Selected Health Facilities (N=12)

Half of the health facilities assessed were responsible for distributing pharmaceuticals to health centers and clinics in their district. CMS or the RMSs deliver pharmaceuticals to the health centers and clinics in their own districts and other surrounding areas. The health facilities have to use their own vehicle to make deliveries to health centers and clinics in some districts, over 100km away. Over half of the health facilities had access to a vehicle. One health facility stated having to use the casualty vehicle for transport. One facility was responsible for delivering to over 30 health centers and clinics and due to lack of human
resources the cleaner was responsible for the packing these orders, with oversight from the pharmacist.

Health centers and clinics have their own order books and place their orders with CMS/RMS, regional pharmacists or district hospitals, as the case may be. As with the health facilities, health center and clinic orders can also be cut due to several reasons including budget constraints or experience of CMS/RMSs, regional pharmacist or district hospital pharmacy staff. Health centers and clinics had a wide range of delivery schedules, ranging from 3 times a week to once every six weeks.

The major problems with distribution to health centers and clinics, as stated by the health facilities were lack of communication, inability to monitor health center and clinic sites due to long distances and poor quantification by health centers and clinics.

4.3 Rational Drug Use

Health facilities visited do not keep records of prescriptions dispensed except for the Diflucan®, Schedule 7 medicines and ARVs. The recording system for ARVs dispensed was not uniform among the facilities assessed. Some health facilities used the schedule 7 registers to record ARVs dispensed, while other facilities had designed their own recording formats. Five health facilities kept a record of the number of prescriptions dispensed and these ranged from about 60 to over 500 prescriptions per day.

Proper dispensing practices were not uniformly practiced. Few health facilities had tablet counting trays, spatulas or functioning tablet counting machines and tablets were seen being counted with bare hands. Every health facility prepared prepackaged medicines, but only five had a written procedure for staff to follow. One health facility stated that it had a standard operating procedure on preparing pre-packs but it was not implemented.

Personnel responsible for dispensing were the pharmacist and pharmacist’s assistants. In some facilities that didn’t have adequate staff or did not have pharmacists and/or pharmacist’s assistants, nurses and porters did the dispensing of medications. (See Chart 21)

Chart 21: Designation of Dispenser at Selected Health Facilities

<table>
<thead>
<tr>
<th>Designation of Dispenser</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmacist</td>
<td>8</td>
</tr>
<tr>
<td>Pharmacist Assistants</td>
<td>11</td>
</tr>
<tr>
<td>Nurse</td>
<td>2</td>
</tr>
<tr>
<td>Porter/Clerk</td>
<td>2</td>
</tr>
<tr>
<td>P/A students</td>
<td>2</td>
</tr>
</tbody>
</table>

When dispensing prescriptions, the dispenser writes out the quantity dispensed, dates and initials the patient’s medical passport. This is the only record of prescriptions and dispensing maintained. However, the patient passports are not retained in the pharmacy or hospital.
As part of the assessment, seventy-nine observations of the pharmacy worker and his/her interaction with the patient were made. Data collectors recorded the amount of time the dispensers spent talking to patients, if the name of the medicine was given, if patient was told what the medicine was for, what dose to take and for how long; if the patient was asked to repeat the information given, if the medicine was available and if any additional information was given.

**Chart 22: Percentage of Observations of Pharmacy Worker at Selected Health Facilities where information was provided to the patient**

<table>
<thead>
<tr>
<th>Observation of Pharmacy Worker</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gave name of medication</td>
<td>19%</td>
</tr>
<tr>
<td>Explained what the drug was being given for</td>
<td>47%</td>
</tr>
<tr>
<td>Explained the dose of the medicine</td>
<td>95%</td>
</tr>
<tr>
<td>Told patient how long to take the medicine for</td>
<td>65%</td>
</tr>
<tr>
<td>Asked patient to repeat instructions</td>
<td>6%</td>
</tr>
<tr>
<td>Medication was available</td>
<td>95%</td>
</tr>
<tr>
<td>Gave additional information</td>
<td>3%</td>
</tr>
</tbody>
</table>

In 95% of the interactions the medication was available to be dispensed to the patient and the dose was explained. 65% of patients were told how long to take the medicine, 47% were explained what the medicine was given for, 19% were given the name of the medicine and 6% were asked to repeat the instructions. Only 2 patients of 79 (3%) were given additional information (e.g. take medicine with food, confirmed identity of patient). Only one health facility had information pamphlets for patients on ART.

Most pharmacy staff interviewed attributed rational drug use problems to irrational prescribing by medical officers. Other perceived causes included the non-availability of standard treatment guidelines in health facilities, prescriptions without prescriber’s name, limited English language proficiency of Cuban volunteer doctors and pharmacists, and overall lack of pharmacy staff to keep up with patients needs. Pharmacy personnel, specifically pharmacist’s assistants stated that they did not feel comfortable advising doctors on rational prescribing and that doctors did not accept information from pharmacists’ assistants.

Only two of the twelve health facilities had a system of monitoring use of medicines in their facilities. Both of these health facilities performed a periodic prescribing audit.

The general lack of monitoring may be attributed to staff capacity and/or lack of, or poorly functioning Drugs and Therapeutic Committees (DTCs) at most health facilities. In some facilities, the respondents expressed the opinion that DTCs not needed since most of the same people met on other committees. Generally, hospital staff did not see the need for a DTC which makes it difficult for pharmacy staff to enforce recommendations.

A national survey on drug use was conducted in 1997 in randomly selected health facilities based on indicators developed by International Network of the Rational Use of Drugs.
An Assessment of the Public Sector Pharmaceutical Supply System of the Republic of Namibia

November, 2003

(INRUD) in collaboration with World Health Organization (WHO). One of the recommendations of the survey was to carry out a drug use survey every two years in order to monitor trends\(^32\). Subsequently, surveys were conducted in 1999 and 2001.

Two of the indicators gathered in these national surveys were also gathered in this assessment. Patient passports were reviewed and eighty-four encounters with a doctor were assessed, the diagnosis and prescriptions given were recorded and analyzed.

Chart 23 and Chart 24 show the results from this assessment in comparison to previous years’ results. From the analysis, the percentage of drugs prescribed by generic name has increased from 49.5% in 1997 to 62.4% in 2003. The number of drugs per prescription has grown from an average of 2.4 drugs per prescription in 1997 to 2.79 in 2003.

This shows a mixed trend. While improvements are made with generic prescribing, there seems to be a tendency to prescribe more medicines on the average.

**Chart 23: Percentage of Drug Prescriptions Using Generic Name**

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\(^{32}\) Refer survey
There is no national system to monitor adverse drug reactions (ADRs). ADR forms were available at one referral hospital, but were not routinely used, and there is no central mechanism for collection and analysis of adverse drug reaction reports.

4.4 Counseling and Testing, Prevention of Mother to Child Transmission and Antiretroviral Therapy

A pilot PMTCT program was started in 2002. Ten of the health facilities assessed were providing PMTCT, six of these facilities had begun ART services and the rest of the health facilities were scheduled to be provide ART and PMTCT treatment and care as part of the national plan to scale-up HIV/AIDS care.

4.4.1 Counseling and Testing

Voluntary counseling and testing, as such, did not exist at all health facilities assessed, even though all facilities did provide testing for patients on medical referral and as part of ANC services. It was noted that VCT centers were planned be opened soon in most hospitals. Patients who voluntarily sought HIV testing had to pay for the test. At the time of the assessment, Rapid Test Kits (RTK) were not approved for use by the MoHSS and therefore not available. Since RTK were not routinely in use in the MoHSS, its management was not assessed. HIV testing is done using ELISA, by drawing blood and sending the sample to the laboratory that is either in the health facility or elsewhere, for testing. This process is managed by the National Institute for Pathology (NIP). Most labs in the MoHSS health facilities belong to the NIP system. Rapid test kits (RTK) were available at NIPs for the purpose of accidental needle stick testing and post-exposure prophylaxis (PEP).

Pre- and post-counseling were provided to patients who were tested for HIV. Half of the facilities used materials such as pamphlets or videos to assist in counseling. All respondents used confidentiality measures such as separate rooms for counseling and codes for recording HIV/AIDS status of patients, but only 2 of the facilities had confidentiality guidelines. Only one of the respondents stated that they had adequate staff for the counseling and testing.
program at the facility. All facilities had plans for expansion of the counseling area, hiring more counselors, either nurses or lay persons, and training.

### 4.4.2 Prevention of Mother to Child Transmission

Access to the PMTCT program begins with the first visit to the Anti-natal clinic (ANC), where women receive group educational counseling, which includes information on PMTCT. These women can then volunteer for testing, and receive private pre- and post test counseling. However, since most women enter ANC late (28-30 week gestation or above) there is limited time to convince partners for testing, or to do a repeat test for a woman that is HIV negative at the time of the first test.

The recommended therapy for PMTCT in the MoHSS Guidelines for Anti-Retroviral Therapy includes ART as well as nevirapine 200mg to mother at onset of labor and nevirapine 2mg/kg to the newborn at 48-72 hours of age or at discharge, but the only treatment used in facilities was the later.

The health facilities administered by the Catholic Health Services (CHS) procured nevirapine from the CHS and not the CMS/RMS. All other hospitals procured from the CMS/RMS. Maternity wards kept stocks of nevirapine in their S5/S6/S7 cupboards in the maternity ward medical closet. There was no concern about security of the nevirapine.

Although there was almost 2 years of PMTCT program experience in Namibia there was no uniform recording and monitoring systems at the facilities. Other concerns raised by respondents were the inaccessibility to RTKs, and its effect on access to PMTCT therapy and missed opportunities in treating child and mother after PMTCT due to loss to follow-up.

Language barriers, communication between maternity and labour wards, confidential areas for counseling, as well as, availability of enough trained nurses and counselors to handle the workload were concerns of the staff interviewed. Five respondents mentioned lack of enough staff trained in counseling and in one health facility only one doctor was trained in PMTCT counseling. As with the counseling and testing programs, there were plans for infrastructure enhancement and expansion, training and increasing staff.

### 4.4.3 Antiretroviral Therapy

Six of the 12 health facilities assessed were providing ART to patients from their own jurisdiction, as well as, referred patients from other health facilities. All other hospitals assessed were to begin ART by the end of 2004. The first MoHSS ART guidelines were written in 2003 and were present at 75% of the pharmacies.

As with the Nevirapine (NVP) for PMTCT, ARVs for CHS health facilities were bought through CHS. At two of the sites assessed (that had not yet begun ART) the ARVs were only accessible by the PMO and not by the pharmacy staff.

There was no uniform system in the health facilities for recording ARVs dispensed and patient information. Some health facilities used the Schedule 7 registers to record this type of information, however, the S7 register had not been designed for purposes of monitoring patient care or recording ARV use and was thus inadequate. Other health facilities had designed unique recording forms and systems, but these were not always adequate. The lack of proper recording may lead to poor patient treatment and care and can make for difficult

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33 Reference
facility level quantification of ARVs, as well as, inhibit proper central collection of data for the purposes of CMS/RMS quantification. The concern was raised that the lack of systematic data collection analysis and reporting has put too much responsibility and dependency on certain individuals and with a loss of such key staff members, the health facilities ART services would be severely weakened.

Five of the respondents stated that they either did not have or would not have enough staff for the expanded ART program. One respondent stated that they could not adequately follow-up on patients due to lack of human resources. Understaffing of doctors and other staff had led to doctors not being fully assigned to the ART program. Patients saw different doctors for care and do not receive all services in one day (doctor visit, medication use counseling, collection of ARVs, etc).

Some of the health facilities that were not providing ART services at the time of the assessment were referring their patients to sites that had begun treatment. The lack of readiness of some of the sites had compelled them to use excuses of inadequate supplies of ARVs to health facility administrators and other referral sites, to slow down recruitment of patients. The actual situation was a lack of human resources necessary for the extra dispensing and medication use counseling.

Keeping the status of HIV/AIDS patients confidential at the pharmacy appeared to be a major challenge in most pharmacies assessed. In one health facility all ART patients receive treatment on the same day and wait in the same corridor for counseling and refills. In another, the respondent stated that patient confidentiality was not always honored by the health professionals, possibly due to the lack of facilities to allow for confidentiality.

4.5 Condoms
Health facilities received their male and female condoms from the CMS/RMSs. The Ministry of Women Affairs and Child Welfare was also a source for female condoms. All, but two facilities, kept an inventory record for male condoms and three facilities kept an inventory record for female condoms. Facilities were not able to distinguish between donations or purchases as their sources for both types of condoms. However, all facilities stated that they had not had any problems with procuring condoms in the past year. A few even stated that they had too many condoms.

Three facilities did not stock female condoms and some staff members commented that requests for female condoms were not made as they are not as accepted in the community; clients did not know how to use them, or staff, themselves, did not know how to explain their use.

Male condoms were typically distributed to clinics or other divisions of the facility such as the out-patient, STI, public health and casualty departments and pharmacy dispensing windows. Some hospitals received requests for condoms from the community groups and offices, such as clubs, businesses, Regional AIDS Coordinating Programs, schools, police stations, agricultural projects, or ship inspectors.

Female condoms were not as well distributed within and outside of facilities. They were typically placed at the pharmacy dispensing or out-patient windows and/or the gynecology clinics.
CHAPTER 5:
STRENGTHENING THE PHARMACEUTICAL MANAGEMENT SYSTEM OF NAMIBIA

5.1 General Observations and Recommendations
During Financial year 2002/03, CMS ordered and issued drugs and medical supplies worth N$95M and N$91M respectively. Donations worth N$3M was also received. The operating costs of the CMS as a percentage of the value of issues during financial year 2002/03 was 5.8%. The levels of activity of PMTCT and ART centers in Namibia are expected to increase significantly over the coming years. Unlike most pharmaceuticals, ARVs are costly and most have relatively short shelf lives. The supply of ARVs must be uninterrupted since patients should not break their treatment. Moreover, the legal and availability issues associated with ARVs make them commodities that require special attention.

Ensuring a constant supply of adequate quantities of ARVs, would not only result in high procurement costs but also higher stockholding costs due to the need to hold higher levels of buffer stocks to ensure an uninterrupted supply and the potential for expiry or obsolescence due to changing treatment regimens. Many ARVs would therefore be classified as Class “A” drugs at CMS, accounting for a big proportion of the value of all drug purchases, and requiring close attention and management.

Implementation of effective systems and procedures for drug management will dramatically reduce wastage in the supply system. Developing such systems is relatively easy, but what is more difficult is to ensuring that they are properly implemented, supervised and monitored. In other words, all systems are as good as those who operate them. Providing proper training, filling vacant positions and motivating staff at all levels of the logistics system is an important prerequisite for strengthening pharmaceutical management. This is an uphill task which would need to be undertaken systematically. Without adequately addressing the human resource problems, planned interventions may not yield the desired results.

5.2 Specific Observations and Recommendations
During the assessment, RPM Plus team had the opportunity of visiting facilities at all levels of the health delivery system, namely, CMS, RMS, hospitals and clinics. A set of questionnaires were used to obtain information relating to pharmaceutical management and the capacity of the supply system to support the scale-up of PMTCT and ART services. From the discussions, observations and information collected, and the key indicators developed, the assessment team was able to gather useful information and insight into the operations of the pharmaceutical management system, key weak spots and constraints. Accordingly, the team has developed the following set of key observations and recommendations, covering all aspects of the management of the pharmaceutical supply system in Namibia. For convenience, these have been listed under separate functional areas.

5.2.1 Procurement and Port Clearing:
A.1 Observation: Comparing a set of 14 tracer drugs with international drug indicator prices for CMS purchases made during 2002, average CMS prices were 78% higher.

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34 Source: CMS Trial Balance, 2003
35 IDIP
**Recommendations:** CMS should review tender and contract conditions and amend them if needed to stimulate competition and attract new suppliers.

A.2 **Observation:** CMS has no tender evaluation or management software and uses a combination of Foxpro and Excel to do the evaluation of tenders. This is a rather slow and tedious process and does not facilitate the production of appropriate procurement reports.

**Recommendation:** Explore possibilities of developing or acquiring a tender evaluation and management software that can integrate with Syspro™, for effective and efficient management of procurement. CMS has initiated acquisition of such a software through Intelliware Africa and Flowcentric.

A.3 **Observation:** To clear goods from the port, CMS obtains a minimum of three quotations from clearing agents for handling individual drug shipments. This process is expensive and time consuming for procurement staff.

**Recommendation:** CMS should procure a long term service contract for clearing all CMS shipments through Walvis Bay and Windhoek Airport. This intervention would significantly reduce port clearing charges and lower the work load associated with clearing goods for procurement staff.

A.4 **Observation:** The Procurement and Tenders Pharmacist in charge of drug procurement is responsible for receiving drugs and raising Goods Received Notes (GRNs) at CMS.

**Recommendation:** In accordance with the principle of separation of responsibilities, two different persons should be responsible for key tasks of procurement and receiving of supplies. Hence, it is recommended that the function of receiving is entrusted to the Distribution Pharmacist.

A.5 **Observation:** Purchase Orders are issued for individual items and not for all items ordered from a given supplier. This practice takes up a lot of valuable time of senior procurement staff, who have to then sign all the individual POs and leads to a waste of stationery. This same situation applies to the raising of Goods Received Notes (GRN).

**Recommendation:** Modify Syspro™ to produce Purchase Orders and GRNs to cover all items ordered or received from a given supplier, and not one PO or GRN per item.

A.6 **Observation:** The value of Buy Outs for pharmaceuticals and medical supplies as a percentage of the value of all orders during financial year 2002/03 was 8.3%.

**Recommendation:** Dependence on Buy Outs for procuring drugs and medical supplies can be further reduced by strengthening methods employed for inventory management and quantifying drug needs.

5.2.2 **Quantifying Drug Needs**

B.1 **Observation:** The method used by CMS for quantifying pharmaceutical requirements is very weak. The variation between quantities mentioned in the supply contract and what is actually purchased by CMS during the contract period of show variations ranging between 0% to over 4,000%. This situation has made it very difficult for CMS to exercise proper control over its inventory, obtain better drug prices and for suppliers to effectively schedule their shipments.
Recommendation: Develop new systems and procedures for quantifying needs which are more effective by identifying all key factors influencing demand and also by using different methods for quantifying needs depending on the type of drug.

B.2 Observation: The number of patients accepted for antiretroviral therapy (ART) is already increasing rapidly at many of the treatment centers. The management of these pharmaceuticals will place a severe burden on CMS.

Recommendations: It is important for health facility managers and HIV/AIDS Coordinators to strictly adhere to guidelines set out for enrolling patients. The rate at which patients are selected to receive treatment would basically determine the demand for ARVs. If guidelines used for patient selection are not strictly adhered to, forecasting models developed for quantifying ARVs would not be reliable. Other MoHSS units responsible for collecting data on patient enrollment and ARV usage should make available such information to the CMS to enable appropriate quantification of needs. This system for data collection needs to be strengthened to ensure that it actually collects all the information necessary to do a proper estimation of needs.

Under a rapid growth environment, conventional inventory control models using maximum and minimum stock levels would be ineffective in controlling inventories of ARVs. Hence, it is recommended that a user based system for quantifying and ordering ARV drugs on a periodic basis be developed and introduced at all treatment centers. CMS should aggregate requirements received from all treatment centers and place quarterly orders with suppliers taking into account relevant lead time and buffer stock requirements. Use of Buffer stocks is critical to avoid treatment interruptions on account of stock outs.

5.2.3 Inventory Control of Drugs

C.1 Observation: The lack of an appropriate inventory control system in the CMS has resulted in weakness in the procedures used to make routine decisions on “when to order” and “how much to order”. This has resulted in frequent purchases, which places a high work load on CMS staff. An analysis of the orders placed by CMS with one major supplier revealed that the average number of separate orders during the two year contract period was 9.3 for 136 items. In addition, CMS ordered more than the contracted quantity for eighty-eight (88) of the items (64.7%), less than the contracted quantity for forty-seven (47) items (34.6%) and only one item (0.73%) had the quantity ordered equal the contracted quantity.

Recommendation: Develop suitable inventory control systems at CMS which are capable of maintaining a proper balance between stock holding costs, stock out costs and ordering costs. Such an approach would minimize the Total Variable Cost (TVC) of operating the inventory control system at CMS. ABC value analysis, VEN analysis and expected lead times should be employed to set appropriate inventory control parameters such as re-order levels, re-order quantities and re-order intervals, maximum and minimum stock levels and levels of buffer stocks depending on the inventory control system implemented.

C.2 Observation: CMS does not rely on Syspro™, the computerized inventory control system, for identification of pharmaceuticals to reorder and reorder quantities, (i.e. decide on what to order, when to order and how much to order). This may be due to...
lack of adequate training in use of the system or improper configuration of the software for either a continuous or a periodic review system of inventory control. This has led to the use of spreadsheets for calculating needs, which are also not effective in exercising proper control over inventories.

**Recommendation:** Review operating characteristics and capabilities of Syspro™ for inventory control and accordingly modify the system to the use of user friendly menus from which reports would be automatically generated without the need for programming. For e.g. the system must be so configured that the data to decide on when to order and how much to order, based on either a continuous or periodic review system of inventory control, can be readily generated and be reliable enough not to require further processing. If Syspro™ currently does not have the capability to undertake these functions, than it may have to be modified or on new modules added to adequately perform these functions. CMS staff should be provided with the necessary training to use the system appropriately.

C.3 **Observation:** Even though Syspro™ has the ability to produce inventory management reports such as an ABC Value Analysis based on the annual value of issues, purchases and value of current stocks, this is not routinely done to support management decision making. ABC Value analysis is a very powerful tool that could be easily employed for systematic cost reduction in drug logistics, but it is not used to its full potential.

**Recommendation:** Undertake an ABC value analysis of CMS issues for financial years 2002/03 and 2001/02, to reviewing the classification of CMS stocks. This will also provide information on drugs that account for a greater proportion of CMS procurement and issues. This will also assist in determining if the allocations correspond to drugs needed for treating priority health conditions prevailing in Namibia. Regular ABC value analysis would assist in making routine decisions on re-order quantities and/or re-order intervals.

C.4 **Observation:** Initial review of Syspro™ suggest that it is capable of producing regular inventory management reports in addition to keeping track of routine stock movements at CMS. However this facility is not fully utilized.

**Recommendation:** Develop a comprehensive set of inventory management reports for use at CMS and RMS to support management decision making, and configure or reprogram Syspro™ to produce these reports routinely.

5.2.4 **Storekeeping at CMS**

D.1 **Observation:** Maintenance of stock records at CMS is far from satisfactory. Out of a set of thirty-four (35) tracer items, only 12 or 34% of stock card records corresponded with the physical inventory and only 2 or 6% of the Syspro™ balances at the time of survey corresponded with physical stock inventory. Only one (1) product agreed with both the Syspro™ and stock card balances.

**Recommendations:** It is recommended that a physical stock taking be performed under the supervision of an independent competent authority to obtain accurate stock balances of all stocks carried by CMS. These should then be used to update stock cards and Syspro™ balances. The procedures for all transactions relating to receipts
and issues should be revised to an online processing system that ensures that all transactions are captured by the inventory control system and updated in real-time.

D.2 Observation: The clerks in charge of managing the four stores for drugs do not have the require training or expertise to ensure adherence to basic storekeeping practices recommended for pharmaceuticals, such as maintenance of accurate and up to date stock records and issuing drugs according to FEFO.

Recommendations: Make a concerted effort to recruit Pharmacists’ Assistants to manage each of the pharmacy stores and/or provide system specific training to clerks in stores management and inventory control.

D.3 Observation: CMS does not process back orders

Recommendations: It is recommended that CMS explores the option of processing backorders so as to minimize multiple requisitions and the potential for over ordering.

5.2.5 Transport

E.1 Observation: The fleet of trucks at the CMS and RMS in Oshakati and Rundu are very old; most of them over 12 years. As a result the need for vehicle maintenance has risen sharply leading to long downtimes. However, due the lack of a proper accounting system, it was not possible to gather reliable information on actual maintenance costs and running.

Recommendation: There may be the need to replace some of the existing trucks with new trucks and also provide pickup trucks for Oshakati and Rundu RMS for routine field visits. However, this should be done after an in-depth review of the transport management practices of the CMS and RMS in support of the proposed revised inventory management systems.

5.2.6 Regional Medical Stores

F.1 Observation: RMS and health facilities are expected to order pharmaceuticals from the CMS once every 6 weeks. In practice, however, a number of emergency orders are placed between the formal orders. This practice has places a severe strain on the on the aged fleet of trucks providing the transport and distribution system of the CMS.

Recommendation: Frequent emergency orders arise as a direct result of poor inventory management at RMS and health facilities. Hence, it is recommended that proper systems for inventory control and order initiation be developed as a matter of priority for RMS and health facilities which incorporates a streamlined ordering system for pharmaceuticals.

F.2 Observation: Prior to and following the relocation of the Oshakati RMS to its new warehouse, stock records covering issues, receipts and stock balances have not been maintained. Further, no Goods Received Notes (GRNs) are raised when supplies are received from the CMS. This situation is most unsatisfactory and should be rectified forthwith. As a result, indicators developed for other facilities could not be produced for the Oshakati RMS.

Recommendation: Maintenance of accurate and up to date stock records is a basic function that any medical store should comply with, in order to exercise proper inventory management and ensure accountability. It is recommended that Oshakati
RMS undertakes a complete physical count of all stock on hand, under the supervision of an independent authority, and enter in stock records all stock balances based on the physical count. This is a critical prerequisite for the implementation of interventions proposed for strengthening pharmaceutical management at this RMS.

F.3 Observation: Maintenance of stock records and storekeeping practices at Rundu RMS was good. Out of 23 tracer drugs, 13 products or 57% corresponded with physical stocks, with a weighted average percentage of inventory variation of 0.61% and an average percentage of individual variation of 1.55%. 100% of all 23 tracer drugs were in stock at the time of survey.

Recommendation: Pharmaceutical management performance at Rundu RMS is remarkable in comparison with the most unsatisfactory situation observed at Oshakati RMS. The Pharmacist in charge of Rundu RMS should be commended. Required equipment for strengthening pharmaceutical management and staff training should be provided to further enhance output.

F.4 Observation: Neither RMS at Oshakati nor Rundu have computers for inventory control and basic office equipment for stores management and related functions.

Recommendation: Provide the required office equipment such as fax machines, photocopiers and computer software and hardware. Implement Syspro™ at both RMSs after the recommended modification and upgrade. The possibility of linking up all three medical stores through a network should also be explored.

F.5 Observation: Oshakati and Rundu RMS report administratively and technically to their respective Regional Health Offices and have only a client relationship with the CMS. This was not the case prior to August 2003.

Recommendation: It is recommended that the regional medical stores be made outposts or depots of the CMS. The CMS will then have administrative and technical oversight of both RMS. This will enhance and streamline the process of standardization of systems and procedures for inventory management, storekeeping, distribution and related functions throughout Namibia.

5.2.7 Human Resource Management

G.1 Observation: The MoHSS cannot attract and retain Pharmacists and Pharmacists’ Assistants in the public sector resulting in many vacancies at all levels of the pharmaceutical management system despite the observation that private and public sector salaries do not appear to be significantly different. There is a high level of staff turnover and low morale among all categories of staff in the public pharmaceutical sector. A number of key positions in the public sector are filled by expatriate pharmacists.

Recommendations: Pharmaceutical management systems are as good as those who operate them. Hence, availability of qualified, experienced and motivated staff is most essential. To overcome the problem of attracting pharmaceutical staff, two strategies are proposed.

The first is a short term strategy where expatriate Pharmacists fluent in English and with acceptable pharmacy qualifications be recruited on contract, pending the training of adequate numbers of Namibian Pharmacists. These professionals will provide service and also serve as trainers for Pharmacists’ Assistants during their contract
period. The MOHSS should expedite the process of engagement through advertisement and facilitating the acquisition of visas and work permits for selected candidates.

The second strategy is a long term one, which will involve providing financial support to qualified Namibians to be trained in pharmacy in universities outside of Namibia. A similar scheme is currently operated by the Pharmaceutical Society of Namibia (PSN) for training pharmacists in South Africa with funding provided by private pharmacies. The PSN has shown interest in collaborating with donors through expanding their student loan scheme. Donors such as United States Agency for International Development (USAID) could be made to guarantee loans or provide direct funding for outstanding Namibian students to study pharmacy in recognized academic institutions in South Africa or other countries in the region. Under this scheme, selected candidates would be bonded to serve a minimum period within the public sector. It is recommended that a feasibility study of this scheme be conducted together with the human resources division of the MoHSS to provide recommendations on how to package the strategy.

G.2 Observation: Most CMS, RMS and health facilities staffs have not received any formal training in pharmaceutical management. This is a serious shortcoming which impacts adversely on the drug logistics system as a whole.

Recommendation: Once new systems and procedures have been developed for different aspects of pharmaceutical management, the following steps should be taken to provide training to all involved in pharmaceutical management.

- Develop user friendly Operations Manuals based on new systems developed for managing supplies.
- Provide general training and system specific training on the use of above mentioned systems of pharmaceutical management using the operations manuals.
- Provide technical assistance at the stage of implementation.
- Develop and train staff in the monitoring and supervision of new systems.

G.2 Observation: Most positions at CMS, RMS and Health facilities are either understaffed or occupied by persons who do not have the requisite qualifications and/or experience to perform the functions expected of the position. This situation adversely impacts the level and quality of pharmaceutical services provided throughout the country. With the envisaged rapid expansion of PMTCT, PMTCT+ and ART services throughout the country, the need for qualified and well trained pharmaceutical personnel has become critical.

Recommendations: It is recommended that the services of a short term Human Resource Consultant be employed to undertake an in depth study of the human resource issues affecting pharmaceutical management operations at all levels of the system and recommend suitable job descriptions, appropriate staffing norms, training programs, job evaluations and appropriate remuneration packages acceptable to the MOHSS as a means of attracting and retaining services of pharmaceutical staff.
G.3 **Observation:** A number of pharmacists were willing to put in a few hours of work in government facilities but that MoHSS does not allow part-time professional practice in its facilities.

**Recommendations:** It is recommended that the policy that does not allow part-time professional practice in government facilities be revisited. Allowing part-time practice may make available more qualified manpower to assist in the dispensing and counseling functions.

5.2.8 **Finance and Accounting**

H.1 **Observation:** CMS does not have a bank account or even a petty cash account for making any kind of payment. The practice is for the CMS to prepare the necessary payment documents relating to CMS operations such as salaries, vehicle maintenance, stationery etc. and present them to the finance section at MOHSS for payment. A similar approach is used for making payments to vendors for pharmaceutical purchases.

**Recommendations:** Practices described above; cause delays in making supplier payments, creates a tendency to over order supplies in order to minimize the frequency of placing payment requests and creates substantial delays when CMS is urgently in need of certain essential services or supplies. This situation is most unsatisfactory and CMS should be provided adequate funds based on an operational budget to fund its operations. Further, the CMS accountant should be made responsible for maintenance of a proper set of accounts for the CMS operational budget.

H.2 **Observation:** The Ministry of Finance (MOF) maintains the CMS Trade Account and has been doing so even before independence. Over the years, the account has accumulated a very large deficit due no regular reconciliation of the account to account for losses etc and also the CMS has been allowed to procure any amount of pharmaceuticals without question, partly due to the assumption that drug supplies are that essential to the welfare of the nation. The MOF has indicated its interest in making this account more transparent by establishing proper accounting systems for generating regular financial reports.

**Recommendation:** RPM Plus has engaged the services of Ernst and Young Windhoek to undertake a complete financial audit of the CMS Trade Account and recommend appropriate financial reforms. The report of the audit is available and will be used in the development and implementation of a comprehensive package of financial and management accounting systems to support recommendations made for strengthening pharmaceutical management at CMS and other user units.

5.2.9 **Health Facilities**

I.1 **Observation:** Cuban Pharmacists are not given proper orientation prior to being placed at facilities.

**Recommendation:** It is recommended that Cuban pharmacists be given formal orientation prior to being placed at facilities. This orientation period should include intensive English language lessons, introduction to the MoHSS structure, roles and

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36 Refer Audit report
responsibilities, Namibian Standard Treatment Guidelines and SOPs for pharmaceutical management in Namibia

I.2 Observation: Lack of clear job descriptions and responsibilities

Recommendation: Due to the limited numbers of professional pharmacy staff available at the facilities, it is strongly recommended that job descriptions and responsibilities of pharmacy staff be reviewed and recommendations made for a redefinition of roles. With the start of and scale-up of the ART and PMTCT programs, the pharmacist may be more beneficial as supervisors or educators. Pharmacists’ assistants, clerks and work hands may need to take on extra responsibilities and therefore would need additional training and improvements in their conditions of service.

I.3 Observation: Poor retention of pharmacy staff in the MoHSS

Recommendation: To ensure that current and newly recruited staff remains with the MoHSS, the issues of inadequate salary and unattractive conditions of service will need to be verified and resolved. The recruitment process for foreign pharmacists will need to be shortened and regulations restricting only 2 pharmacists’ assistants to be trained per pharmacists will need to be reviewed.

I.4 Observation: Weak Monitoring and Evaluation System

Recommendation: Current indicators used to monitor pharmacy practice at the health facilities need to be reviewed and a standard list developed for all regions. Additional pharmacists will need to be recruited to supervise and monitor and supervise pharmaceutical management activities and practices.

I.5 Observation: Poor conditions of infrastructure in Health facilities

Recommendation: An in-depth review of the infrastructural needs of the various pharmacies that will be dispensing ARVs needs to be undertaken and recommendations made for the repair and provision of requisite infrastructural requirements. This should be done in collaboration with the Namibia Global fund Secretariat and the Public Works office.

I.6 Observation: Lack of resources for drug information

Recommendation: It is recommended that all pharmacies be provided with new editions of selected resource materials, all MoHSS standard treatment guidelines and relevant policies. In addition training in the use of these resources should be provided on an ongoing basis.
ANNEX 1:
KEY INFORMANTS INTERVIEWED

USAID
Kirk Lazell Team Leader SO#5 of the Namibia USAID Mission
Amanda Gibbons USAID, Washington

MoHSS
Dr. Norbert Foster Under Secretary, Ministry of Health and Social Services
Paulina Nghipandulwa Deputy Director, Clinical Support Services (Acting Director, Tertiary Health Care)
Johannes #Gaeseb Director, Pharmaceutical Control and Inspection, (Acting Director, Division of Pharmacy Services)

CMS - MoHSS
Gilbert Habimana Distribution Pharmacist, Central Medical Stores (Acting Chief, CMS)
Harriot Lima Tender and Procurement Pharmacist
Meladie Shilango Accounting Clerk
L. Shifotoka Chief Clerk, Generic Support Services, Transport

Rundu RMS - MoHSS
Kennedy Kambyambya Chief Pharmacist in Charge

Health Facilities - MoHSS
Joseph Tuyendera Porter - Andara
Dr. Alex Oluwasauin PMO - Andara
Patricia Gütz Regional Pharmacist - Khomas
Dawn Pereko Pharmacist - Katatura
Corinne Zondag Regional pharmacist - Caprivi
Andy Anderson Regional Pharmacist - Karas
Dr. Agwase Acting PMO - Nyangana
Joseph Kativa Pharmacists’ assistant - Nyangana
J. van Dillen Gynecologist and Obstetrician - Onandjokwe
Mr. Hamakali "Tate Kefas" Senior Pharmacists’ assistant - Onandjokwe
Reverend Mtuleni Chief Clerk - Onandjokwe
Rauna Shitaleni Pharmacist - Oshakati
Dr. Amutenya Superintendent - Oshakati
Dr. Awe PMO - Oshikuku
Johanna Pharmacists’ assistant - Oshikuku
Patricia Komu Pharmacist, Rundu
Dr. M. Kangudie Medical Officer - Rehoboth
Sophia Erdmann Matron - Rehoboth
Sister Irene Mouton PMTCT Coordinator - Rehoboth
Maria Asino  Pharmacist’s assistant - Rehoboth
Zayda Ponce  Volunteer Pharmacist - Walvis Bay
Penelope Groenewald  Pharmacists’ assistant - Walvis Bay
Dr. Mayama  Superintendent - Walvis Bay
Joseph Ruzhubiza  Pharmacist - Windhoek Central

UNFPA
Kamal Mustapha  UNFPA Representative, Namibia

National Tuberculosis Program
Rosalina Indongo  Health Programme Administrator
M.L. Akuaake  Chief Medical Officer, Primary Health Services

Ministry of Finance/PSEMAS
Tovio Shiimbi  Director of Administration, Ministry of Finance
E. Coetzae  Benefits Manager, PSEMAS, Ministry of Finance
Josephat Mwatotele  General Manager, NAMHealth

NACOP
Abner Xaogub  Member, NACOP

CDC
Tom Kenyon  Country Director, CDC and NACP advisor

FHI
Rose Cnuddle De Buysscher  FHI Country Director
Fred van der Veen  Senior Regional Technical Advisor HIV/AIDS

Condom Committee
Kamal Mustafa  UNFPA Representative (Acting Chairman)
Elizabeth Kauna Pamela Aupindi  Member, NACOP
Mulunesh Tennagashaw  Country Programme Advisor, UNAIDS
Kirk Lazell  Mission Health Officer, USAID
Representative  Commodity Exchange (CE)
Representative  NASOMA
Representative  French Corporation
Representative  UNICEF

GTZ
Anne Frisch  Co-ordinator, Namibian-German RH Project, GTZ

Chamber of Mines
John Rogers  General Manager, Chamber of Mines
Theo Hangula  Assistant Coordinator, CoM and Member of NACOP
<table>
<thead>
<tr>
<th>Others</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Kafidi</td>
<td>Former Director of the Division of Pharmacy Services, MoHSS</td>
</tr>
<tr>
<td>Dr. Flavia Mugala-Mukungu</td>
<td>Physician and Chairperson of the HIV Clinicians Society</td>
</tr>
<tr>
<td>John Mannheimer</td>
<td>Pharmacist and proprietor/manager of Namib Link Pharmacy</td>
</tr>
<tr>
<td>Robert Ryder</td>
<td>Professor of Epidemiology and Medicine of UNC</td>
</tr>
<tr>
<td>Karin Brockmann</td>
<td>Secretary, Pharmaceutical Society of Namibia</td>
</tr>
<tr>
<td>Representative</td>
<td>Geka Pharma</td>
</tr>
</tbody>
</table>
ANNEX 2:
DOCUMENTS REVIEWED

1. Improving Effectiveness and Efficiency of Services Provided by Central Medical Stores, A Review of Recent Experiences, MoHSS, August, 1997
2. Central Medical Store, 1998, Interim Management, Search for Turning the Central Medical Store into an Efficient Organisation, Tempo Consult, January, 1999
3. Central Medical Stores Analysis and Strategies, Namibian Integrated Health Programme, November, 1997
4. Proposal for Improving the Effectiveness and Efficiency of the Central Medical Stores, MoHSS, August, 2002
5. Alternative management structure for the Central Medical Stores, MoHSS, Tangeni Katrina Angula, THC and CSS, December, 2002
7. Operating guidelines for the Ministry Procurement Committee, MoHSS,
8. MoHSS Order Book for Referral Hospitals
9. Pharmaceutical and Related Supplies Procurement Committee Tender Document In Respect of the Supply and Delivery of Tablets, Capsules and Suppositories, MoHSS, April 2003
10. Pharmaceutical and Related Supplies Procurement Committee Tender Document, In Respect of the Supply and Delivery of Schedule 5,6 and 7 Medicines, MoHSS, April 2003
13. Report of the National Planning Workshop for Pharmacists, MoHSS, June, 2002
14. Refresher Workshop for Pharmacists’ Assistants, Jan Ligthart Center, November, 2001
15. Refresher Workshop for Pharmacists’ Assistants, National Health Training Center, April 2001
16. Second National Survey on the Use of Drugs in Namibia’s Public Health Institutions, MoHSS, June, 1999
17. Third National Survey on the Use of Drugs in Namibia’s Public Health Institutions including Monitoring the Implementation of the National Drug Policy, MoHSS, July, 2001
18. Intervention Study to Improve Antibiotic Prescribing Habits in Clinics in Directorate: Central Region, Division of Pharmaceutical Services, April 2000.
19. Health in Namibia Progress and Challenges, Selma el Obeid et al, 2001
20. Guidelines for the Clinical Management of HIV and AIDS, NACOP,
21. Guidelines for Anti-retroviral Therapy, MoHSS, April, 2003
22. Guidelines for the Management of Hypertension, MoHSS, February 2003-09-21
23. Guidelines for the Counseling of HIV/AIDS and Sexually Transmitted Diseases, MoHSS, June 2001
24. Cholera Control Guidelines, MoHSS, 1995
25. Syndromic Management of STIs, MoHSS
33. National Social Marketing Programme of Namibia, Phase I Report, March 2003
34. Second National Development Plan Round Table Conference Cluster two: HIV/AIDS - A National Concern, GRN, 2002
35. CDC/HRSA Global AIDS Program Assessment Report, CDC/HRSA, January 2002
38. Developing Registration Procedures for Essential and Generic Drugs, Rutendo Kuwana, April 2001
39. Tender Board of Namibia Act, 1996
40. Medicines and Related Substances Control Act, SA, 1966
41. Medicines and Related Substances Control Act Regulations, SA, 1975
42. Pharmacy Profession Act, Namibia, 1993
43. Draft bill to provide for the establishment of a Namibia Medicines Regulatory Council; for the registration of medicines intended for human and for animal use; for the control of medicines and scheduled substances; and to provide for incidental matters. ??
44. National Drug Policy for Namibia, MoHSS, August 1998
45. NEMLIST Namibia Essential Medicines List, MoHSS, March 2003
46. National Policy and Strategy for Malaria Control, MoHSS, November 1995
47. Control of Acute Respiratory Infections Programme, MoHSS, 1995
48. Namibia Medicines Register as at 30 May 2002, MoHSS
## ANNEX 3: TRACER LIST

1. Gentian Violet 0.5% solution
2. Nystatin 100,000 units/ml oral suspension
3. Oral rehydrating salts powder
4. Ferrous Fumarate + Folic acid tablets
5. Sodium chloride 0.9% 1,000ml Infusion
6. Ergometrine Maleate 0.5mg/ml Injection
7. Condoms (male)
8. Condoms (female)
9. Diflucan 200mg tablet
10. Benzathine Benzylpenicillin 2.4 mil IU pwd for inj.
11. Metronidazole 400mg tablet
12. Isoniazid/INH 100mg tablets
13. Doxycycline 100mg capsules
14. Co-trimoxazole 80mg/400mg tablets
15. Co-trimoxazole 40mg/200mg/5ml suspension
16. Diphtheria + Pertussis + Tetanus (D.P.T.) Injection
17. Tetanus toxoid (adsorbed)
18. Paracetamol 500mg tablets
19. Paracetamol 120mg/5ml
20. Chloroquine 150mg base tablets
21. Chloroquine 50mg/5ml syrup
22. Chloramphenicol 1% Eye Ointment
23. Amoxycillin 125mg/5ml Syrup

### Antiretrovirals:
ARVs in NEMList are listed below, if any other ARVs were found in the CMS, RMSs or the health facilities, these were listed as well.

1. Lamivudine + Zidovudine 150mg + 300mg tablets
2. Lamivudine 50mg/5ml oral solution
3. Lamivudine + Stavudine 150mg + 30mg tablets
4. Lamivudine + Stavudine 150mg + 40mg tablets
5. Lopinavir + Ritonavir 133.3 + 33.3mg capsules
6. Lopinavir + Ritonavir (400+100)mg/5ml oral solution
7. Nevirapine 200mg tablets
8. Nevirapine 50mg/5ml suspension
9. Zidovudine 50mg/5ml syrup
### ANNEX 4:
**AVERAGE PRICES PAID BY CMS FOR A SET OF TRACER PRODUCTS COMPARED WITH 2002 INTERNATIONAL INDICATOR PRICES**

Table 13: Average Prices Paid by CMS as a Proportion of 2002 International Indicator Prices

<table>
<thead>
<tr>
<th>Tracer Drug</th>
<th>Pack Size</th>
<th>Last Order Price (USD)</th>
<th>2002 IDIP</th>
<th>% of 2002 IDIP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Agency</td>
<td>Supplier</td>
<td>Agency</td>
</tr>
<tr>
<td>Amoxycillin 125mg/5ml Syrup</td>
<td>100ml</td>
<td>0.56</td>
<td>0.4680</td>
<td>0.5760</td>
</tr>
<tr>
<td>Benzathine Benzylpenicillin 2.4 IU PFI</td>
<td>50</td>
<td>1.33</td>
<td>0.4080</td>
<td>0.2803</td>
</tr>
<tr>
<td>Chloramphenicol 1% Eye Ointment</td>
<td>5gm</td>
<td>0.25</td>
<td>0.4434</td>
<td>0.2910</td>
</tr>
<tr>
<td>Chloroquine 150mg base Tablets</td>
<td>1000</td>
<td>8.18</td>
<td>8.6400</td>
<td>7.2000</td>
</tr>
<tr>
<td>Chloroquine 50mg/5ml Syrup</td>
<td>100ml</td>
<td>0.66</td>
<td>0.5040</td>
<td>0.6360</td>
</tr>
<tr>
<td>Doxycycline 100mg Capsules</td>
<td>100</td>
<td>0.14</td>
<td>2.3400</td>
<td>1.2000</td>
</tr>
<tr>
<td>Ergometrine Maleate 0.5mg/ml Inj.</td>
<td>1</td>
<td>0.34</td>
<td>0.2702</td>
<td>0.1348</td>
</tr>
<tr>
<td>Ferrous Fumarate + Folic acid Tablets</td>
<td>1000</td>
<td>18.58</td>
<td>2.8800</td>
<td>2.7600</td>
</tr>
<tr>
<td>Isoniazid/INH 100mg Tablets</td>
<td>1000</td>
<td>3.69</td>
<td>4.8000</td>
<td>4.3200</td>
</tr>
<tr>
<td>Metronidazole 400mg Tablet</td>
<td>100</td>
<td>1.57</td>
<td>0.6720</td>
<td>0.5400</td>
</tr>
<tr>
<td>Nystatin 100,000 units/ml oral Susp.</td>
<td>30ml</td>
<td>0.86</td>
<td>1.2600</td>
<td>0.9072</td>
</tr>
<tr>
<td>Paracetamol 120mg/5ml</td>
<td>50ml</td>
<td>0.22</td>
<td>0.1500</td>
<td>0.3180</td>
</tr>
<tr>
<td>Paracetamol 500mg Tablets</td>
<td>1000</td>
<td>0.28</td>
<td>4.5600</td>
<td>3.7200</td>
</tr>
<tr>
<td>Sodium chloride 0.9% 1000ml Infusion</td>
<td>1000ml</td>
<td>1.45</td>
<td>1.9200</td>
<td>1.0800</td>
</tr>
<tr>
<td><strong>Average (N = 14)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Median (N = 14)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### ANNEX 5:

**COMPARISON OF STOCK RECORDS AND PHYSICAL COUNTS AT THE CMS AND RMSs**

Table 14: Comparison of Stock Records and Physical Counts at the CMS and RMSs

<table>
<thead>
<tr>
<th>No</th>
<th>Product</th>
<th>RMS (N=23)</th>
<th>OMS (N=23)</th>
<th>CMS (N=35)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Record</td>
<td>Physical</td>
<td>% Variation</td>
<td>Record</td>
</tr>
<tr>
<td>1</td>
<td>Gentian Violet 0.5% solution</td>
<td>594</td>
<td>594</td>
<td>0%</td>
</tr>
<tr>
<td>2</td>
<td>Nystatin 100,000 units/ml oral suspension</td>
<td>1,126</td>
<td>1,126</td>
<td>0%</td>
</tr>
<tr>
<td>3</td>
<td>Oral rehydrating salts powder</td>
<td>583</td>
<td>580</td>
<td>1%</td>
</tr>
<tr>
<td>4</td>
<td>Ferrous Fumarate + Folic acid tablets</td>
<td>631</td>
<td>631</td>
<td>0%</td>
</tr>
<tr>
<td>5</td>
<td>Sodium chloride 0.9% 1,000ml Infusion</td>
<td>3,351</td>
<td>2,439</td>
<td>1%</td>
</tr>
<tr>
<td>6</td>
<td>Ergometrine Maleate 0.5mg/ml Injection</td>
<td>724</td>
<td>523</td>
<td>0%</td>
</tr>
<tr>
<td>7</td>
<td>Condoms (male)</td>
<td>1,274</td>
<td>1,014</td>
<td>20%</td>
</tr>
<tr>
<td>8</td>
<td>Condoms (female)</td>
<td>215</td>
<td>217</td>
<td>1%</td>
</tr>
<tr>
<td>9</td>
<td>Difucan 200mg tablet</td>
<td>135</td>
<td>133</td>
<td>1%</td>
</tr>
<tr>
<td>10</td>
<td>Benzaethine Benzylpenicillin 2.4 mil IU pwd for inj.</td>
<td>3,088</td>
<td>3,088</td>
<td>0%</td>
</tr>
<tr>
<td>11</td>
<td>Metronidazole 400mg tablet</td>
<td>628</td>
<td>628</td>
<td>0%</td>
</tr>
<tr>
<td>12</td>
<td>Isoniazid/INH 100mg tablets</td>
<td>570</td>
<td>570</td>
<td>0%</td>
</tr>
<tr>
<td>13</td>
<td>Doxycycline 100mg capsules</td>
<td>1,649</td>
<td>1,613</td>
<td>2%</td>
</tr>
<tr>
<td>14</td>
<td>Co-trimoxazole 80mg/400mg tablets</td>
<td>789</td>
<td>789</td>
<td>0%</td>
</tr>
<tr>
<td>15</td>
<td>Co-trimoxazole 40mg/200mg/5ml suspension</td>
<td>5,602</td>
<td>5,601</td>
<td>2%</td>
</tr>
<tr>
<td>16</td>
<td>Diptheria + Pertussis + Tetanus (D.P.T.) Injection</td>
<td>2,199</td>
<td>2,193</td>
<td>0%</td>
</tr>
<tr>
<td>17</td>
<td>Tetanus toxoid (adsorbed)</td>
<td>6,920</td>
<td>6,920</td>
<td>0%</td>
</tr>
<tr>
<td>18</td>
<td>Paracetamol 500mg tablets</td>
<td>192</td>
<td>198</td>
<td>3%</td>
</tr>
<tr>
<td>19</td>
<td>Paracetamol 120mg/ml</td>
<td>9,056</td>
<td>9,056</td>
<td>0%</td>
</tr>
<tr>
<td>20</td>
<td>Chloroquine 150mg base tablets</td>
<td>476</td>
<td>476</td>
<td>0%</td>
</tr>
<tr>
<td>21</td>
<td>Chloroquine 50mg/5ml syrup</td>
<td>7,780</td>
<td>7,763</td>
<td>0%</td>
</tr>
<tr>
<td>22</td>
<td>Chloramphenicol 1% Eye Ointment</td>
<td>2,402</td>
<td>2,402</td>
<td>0%</td>
</tr>
<tr>
<td>23</td>
<td>Amoxycillin 125mg/5ml Syrup</td>
<td>2,491</td>
<td>2,491</td>
<td>0%</td>
</tr>
<tr>
<td>24</td>
<td>Lamivudine + Zidovudine 150mg + 300mg tablets</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Lamivudine 50mg/5ml oral solution</td>
<td>1,282</td>
<td>1,282</td>
<td>0%</td>
</tr>
<tr>
<td>26</td>
<td>Lamivudine + Stavudine 150mg + 30mg tablets</td>
<td>1,863</td>
<td>1,863</td>
<td>0%</td>
</tr>
<tr>
<td>27</td>
<td>Lamivudine + Stavudine 150mg + 40mg tablets</td>
<td>2,272</td>
<td>2,272</td>
<td>0%</td>
</tr>
<tr>
<td>28</td>
<td>Lopinavir + Ritonavir 133.3 + 33.3mg capsules</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Lopinavir + Ritonavir (400+100)mg/5ml oral solution</td>
<td>212</td>
<td>212</td>
<td>0%</td>
</tr>
<tr>
<td>30</td>
<td>Nevaripine 200mg tablets</td>
<td>554</td>
<td>553</td>
<td>0%</td>
</tr>
<tr>
<td>31</td>
<td>Nevaripine 50mg/5ml suspension</td>
<td>9</td>
<td>9</td>
<td>0%</td>
</tr>
<tr>
<td>32</td>
<td>Zidovudine 50mg/5ml syrup</td>
<td>4,852</td>
<td>4,852</td>
<td>0%</td>
</tr>
<tr>
<td>33</td>
<td>Indinavir 400mg Tab</td>
<td>1,447</td>
<td>1,447</td>
<td>0%</td>
</tr>
<tr>
<td>34</td>
<td>Efavirenz 200mg Caps</td>
<td>212</td>
<td>212</td>
<td>0%</td>
</tr>
<tr>
<td>35</td>
<td>Nevaripine 10mg/ml Syrup</td>
<td>270</td>
<td>270</td>
<td>0%</td>
</tr>
</tbody>
</table>

| No. of records corresponding with physical counts | 13 | 0 | 12 |
| % of tracer products that correspond with inventory records | 57% | 0% | 34% |
| Weighted average percentage of inventory variation for a set of indicator drugs in MoHSS facilities | 0.61% | 18.86% | 14.28% |
| Average percentage of individual variation of a set of indicator drugs in MoHSS facilities | 1.55% | 88.76% | 12.39% |
| No of tracer drugs in stock at time of survey | 23 | 21 | 32 |
| % of tracer drugs in stock at time of survey | 100% | 91% | 91% |
| % time out of stock for tracer drugs | 3.4% | 0% | 0% |
### ANNEX 6: SELECTED NATIONAL HEALTH INDICATORS

#### Table 15: Population Estimates

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total population (000), 2002</td>
<td>1,961</td>
</tr>
<tr>
<td>Annual population growth rate (%), 1992 to 2002</td>
<td>2.7</td>
</tr>
<tr>
<td>Dependency ratio (per 100), 2002</td>
<td>88</td>
</tr>
<tr>
<td>Dependency ratio (per 100), 1992</td>
<td>87</td>
</tr>
<tr>
<td>Percentage of population aged 60+ years, 2002</td>
<td>5.6</td>
</tr>
<tr>
<td>Percentage of population aged 60+ years, 1992</td>
<td>5.4</td>
</tr>
<tr>
<td>Total fertility rate, 2002</td>
<td>4.6</td>
</tr>
<tr>
<td>Total fertility rate, 1992</td>
<td>5.6</td>
</tr>
</tbody>
</table>

#### Table 16: Selected Health Indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life expectancy at birth (years)</td>
<td></td>
</tr>
<tr>
<td>Total population</td>
<td>49.3</td>
</tr>
<tr>
<td>Males</td>
<td>48.1</td>
</tr>
<tr>
<td>Females</td>
<td>50.5</td>
</tr>
<tr>
<td>Child mortality (probability of dying under age 5 years) (per 1000)</td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>97</td>
</tr>
<tr>
<td>Females</td>
<td>93</td>
</tr>
<tr>
<td>Adult mortality (probability of dying between 15 and 59) (per 1000)</td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>605</td>
</tr>
<tr>
<td>Females</td>
<td>529</td>
</tr>
<tr>
<td>Healthy life expectancy at birth (years)</td>
<td></td>
</tr>
<tr>
<td>Total population</td>
<td>43.3</td>
</tr>
<tr>
<td>Males</td>
<td>42.9</td>
</tr>
<tr>
<td>Females</td>
<td>43.8</td>
</tr>
<tr>
<td>Healthy life expectancy at age 60 (years)</td>
<td></td>
</tr>
<tr>
<td>Males at age 60</td>
<td>11.2</td>
</tr>
<tr>
<td>Females at age 60</td>
<td>12.1</td>
</tr>
<tr>
<td>Expectation of lost healthy years at birth due to poor health (years)</td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>5.2</td>
</tr>
<tr>
<td>Females</td>
<td>6.7</td>
</tr>
<tr>
<td>Percentage of total life expectancy lost due to poor health (%)</td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>10.8</td>
</tr>
<tr>
<td>Females</td>
<td>13.3</td>
</tr>
</tbody>
</table>

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37 WHO, Online April 2004, [http://www3.who.int/whosis/country(indicators.cfm?country=nam](http://www3.who.int/whosis/country/indicators.cfm?country=nam)
Table 17: Selected National Health Accounts Indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per capita GDP in international dollars, 2001</td>
<td>4,918</td>
</tr>
<tr>
<td><strong>Total Health Expenditure</strong></td>
<td></td>
</tr>
<tr>
<td>Total expenditure on health as % of GDP, 2001</td>
<td>7</td>
</tr>
<tr>
<td>Per capita total expenditure on health at average exchange rate (US$), 2001</td>
<td>114</td>
</tr>
<tr>
<td>Per capita total expenditure on health in international dollars, 2001</td>
<td>342</td>
</tr>
<tr>
<td><strong>Public health expenditure</strong></td>
<td></td>
</tr>
<tr>
<td>General Government expenditure on health as % of total expenditure on health, 2001</td>
<td>67.8</td>
</tr>
<tr>
<td>General Government expenditure on health as % of total general government expenditure, 2001</td>
<td>12.4</td>
</tr>
<tr>
<td>Per capita government expenditure on health at average exchange rate (US$), 2001</td>
<td>77</td>
</tr>
<tr>
<td>Per capita government expenditure on health in international dollars, 2001</td>
<td>232</td>
</tr>
<tr>
<td><strong>Sources of public health expenditure</strong></td>
<td></td>
</tr>
<tr>
<td>Social security expenditure on health as % of general government expenditure on health, 2001</td>
<td>1.9</td>
</tr>
<tr>
<td>External resources for health as % of total expenditure on health, 2001</td>
<td>3.8</td>
</tr>
<tr>
<td><strong>Private health expenditure</strong></td>
<td></td>
</tr>
<tr>
<td>Private expenditure on health as % of total expenditure on health, 2001</td>
<td>32.2</td>
</tr>
<tr>
<td>Prepaid plans as % of private expenditure on health, 2001</td>
<td>77.9</td>
</tr>
</tbody>
</table>
ANNEX 7:
ASSESSMENT QUESTIONNAIRES

Double click on icon to open

- Medical Store Questionnaire
- Finance Questionnaire
- Facility Assessment Questionnaire
- Inventory Data Form
- Stock Out Data Form