



Namibia National Supply Chain Assessment Results

Capability and Performance

September 2013



Providing quality medicines for people living with and affected by HIV and AIDS



Namibia National Supply Chain Assessment

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About SCMS

The Supply Chain Management System (SCMS) was established to enable the unprecedented scale-up of HIV/AIDS prevention, care and treatment programs in the developing world. SCMS procures and distributes essential medicines and health supplies, works to strengthen existing supply chains in the field, and facilitates collaboration and the exchange of information among key donors and other service providers. SCMS is an international team of 13 organizations funded by the US President's Emergency Plan for AIDS Relief (PEPFAR). The project is managed by the US Agency for International Development.

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Acronyms

3PL	Third Party Logistics Provider
AIDS	Acquired Immunodeficiency Syndrome
ARV	Anti-Retroviral
CMM	Capability Maturity Model
CMS	Central Medical Store
EMLC	Essential Medicines List Committee
FEFO	First Expiry First Out
FGD	Focus Group Discussion
HIV	Human Immunodeficiency Virus
KI	Key Informant
KPI	Key Performance Indicator
MIS	Management Information System
MoHSS	Ministry of Health and Social Services
MSH	Management Sciences for Health
Nemlist	Namibia Essential Medicines List
NMPC	National Medicines Policy Coordination
OCAT	Organizational Capacity Assessment Tool
OI	Opportunistic Infection
OTD	On-time delivery
PMIS	Pharmaceutical Management Information System
QSL	Quality Surveillance Laboratory
RFP	Request for Proposal
RFQ	Request for Quotation
STG	Standard Treatment Guideline
TB	Tuberculosis
TMS	Transport Management System
USAID	United States Agency for International Development
WHO	World Health Organization

Executive Summary

Background: Namibia operates an integrated pharmaceutical supply chain whereby the central medical store (CMS), a government entity, oversees the procurement, storage and distribution of all pharmaceuticals and clinical supplies for use in public health facilities in Namibia. CMS distributes directly to about 45 health facilities on a six-weekly cycle, including 26 of the 34 district hospitals around the country and the two Regional Medical Stores. These facilities in turn supply pharmaceuticals and clinical supplies to about 450 peripheral hospitals, health centers and clinics throughout the country.

Namibia has strong country ownership, with the government owning and driving major operational functions and contributing the bulk of funds required for procurement of essential medicines and clinical supplies (less than 2% of commodity funds for essential medicines and less than 40% for anti-retroviral medicines coming from donors in 2010).

Objectives: Namibia, an upper-middle income country, is transitioning off the remaining donor support to full country ownership and financial responsibility for supply chain operations and commodity procurement. As this transition continues to progress, donor support, both technical and financial, will decline requiring smart investment of resources to improve supply chain capability and performance. In order to inform smart investments, a supply chain assessment was conducted at the central level including the Central Medical Store (CMS) to identify strengths and opportunities for improvement.

The results of the assessment, detailed throughout this technical report, aim to guide evidence-based decision making by the Ministry of Health and Social Services (MOHSS) and donors to prioritize their continued investments in supply chain systems strengthening. These stakeholders can use the data to prioritize investment of funds into capacity building, ensuring maximum return on investment in terms of impact on health outcomes and value for money in the current climate of declining budgets.

Methods: The Namibian pharmaceutical supply chain was assessed at the national level, covering mainly the Central Medical Stores (procurement and distribution units), national level institutions including the National Medicines Policy Coordination (NMPC) sub-division and the Quality Surveillance Laboratory. Using the National Supply Chain Assessment tool, the assessment teams collected information on the capability and performance of the supply chain through a series of key informant interviews and collection of supply chain data from the Syspro electronic system and manual sources. Details on the tools can be found in section 2.0 of the report (pg. 11)

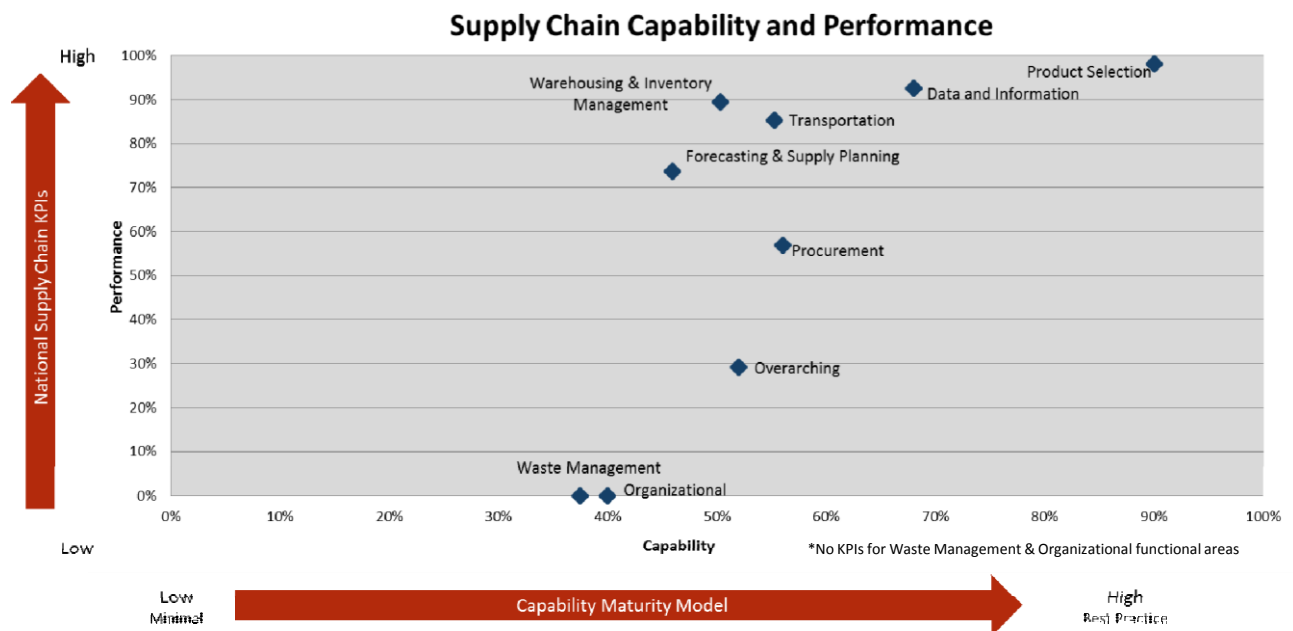
Results: Assessment results indicated a sense of declining capability at the CMS, evidenced in the average levels of capability of key supply chain functions such as forecasting, procurement, warehousing and transportation. Although capability is average, performance remains high indicated by several strategic key performance indicators including, order fill rate, on-time delivery, expiry and facility reporting rates completeness.

Figure 1: Namibia Supply Chain Assessment Results

National Supply Chain Overall Results			
Functional Area	CMM Score	KPI Score	
Overarching		Stock Out Rate	25%
		Stocked to Plan	33%
Product Selection	90%	Quality Testing	100%
		National Essential Medicines List Adherence	96%
Forecasting and Supply Planning	46%	Forecast Accuracy	74%
Procurement	56%	Tender Procurements	53%
		Vendor On Time Delivery	61%
Warehousing & Inventory Management	50%	Expiry (Qty)	1%
		Order Fill Rate	80%
Transportation	55%	On-time delivery (OTD)	85%
Data and Information		Reporting Rate	93%
Waste Management	40%		
Organizational	38%		

Results of the assessment reveal potential risk for declining performance as lower capability begins to impact key functional areas, most notably warehousing and procurement. Non-compliance with day-to-day warehousing Standard Operating Procedures (SOPs), high staff turnover rates, limited training for new staff, and fundamental changes to procurement processes put the performance of the CMS in these areas at risk in the near and long term.

Figure 2: Capability and Performance Comparison



Recommendations: In order to mitigate risk of declining performance, the Ministry of Health and Social Services (MOHSS) pharmaceutical services division should consider the following opportunities for improvement:

1. Due to human resources and space constraints, several important warehousing processes are not being routinely implemented including order checking at dispatch and expiry management. CMS should consider re-invigorating compliance to SOPs and processes, including training all staff and monitoring their implementation. The CMS should also consider introducing a plan for regular review of the SOPs and training of new staff and monitoring the implementation of these procedures to mitigate the risk of non-compliance.
2. CMS should evaluate their procurement policies and procedures as this functional area presents the greatest potential risk of continued decline of capability and performance. In implementing pharmaceutical procurement reform to increase supplier diversity, a step-wise and gradual process should be considered to minimize shocks on the existing system. This will ensure that the balance between procurement executed via tenders and that done via buy-outs is at a level that does not burden the system or result in increased risk of stock outs.
3. There are a high number of interim (emergency) orders by health facilities whose delivery is contracted out to Nampost Courier. CMS should consider evaluating the cost effectiveness with their current outsourcing arrangement with Nampost to ensure they are receiving competitive pricing and high quality service.
4. CMS should consider analyzing the sufficiency of current staff levels and implementing performance-based incentives to reduce staff turnover.
5. CMS should consider implementing a robust performance management system assessing its key functions of procurement, warehousing and transportation providing a system to monitor that performance does not decline and inform decision-making.

The following sections of the technical report outlines performance for each supply chain functional area and detailed recommendations.

1.0 Background

About Namibia & the Health System

Namibia is situated in the south western part of Africa and has a surface area of 824,116 square km. The population of Namibia was estimated at 2,113,077 in 2011 and a population growth rate estimated at 1.4% per annum. Having the second lowest population density in the world (2.6 inhabitants/square km), the distance continues to pose serious challenges to the country's planning, organization and logistics of the AIDS response and results in inadequate and unequal coverage of services.

Namibia GDP per capita of US\$ 5,454 is largely dependent on mining, fishery, large scale farming and high-end tourism. The World Bank categorized Namibia as an Upper Middle Income Country (UMIC) in 2009. As a result, the country is no longer eligible for many concessional grants and loans. Many donors, including the EU, PEPFAR and others have started scaling down their support.

Namibia has a decentralized public health system with 13¹ administrative regions. The national MoHSS head office is responsible for policy formulation, strategic planning, legislation and regulation, monitoring and overall coordination while the regional level is responsible for policy implementation and health service delivery. The office of the Deputy Permanent Secretary is responsible for a Regional Co-ordination Unit, which provides direction for the regional level of management which is constituted as Regional Management Team (RMT) headed by a Regional Health Director.

Health Supply Chain in Namibia

Namibia operates an integrated pharmaceutical supply chain whereby the central medical store (CMS), a government entity, oversees the procurement, storage and distribution of all pharmaceuticals and clinical supplies for use in public health facilities in Namibia. The range of products categories handled by the CMS includes: essential medicines including anti-retroviral medicines, malaria medicines, tuberculosis medicines; contraceptives and other reproductive health supplies; vaccines; HIV test kits; clinical supplies such as gloves, needles, syringes, bandages; surgical instruments such as scissors, blades; radiology supplies such as x-ray films, contrast media.

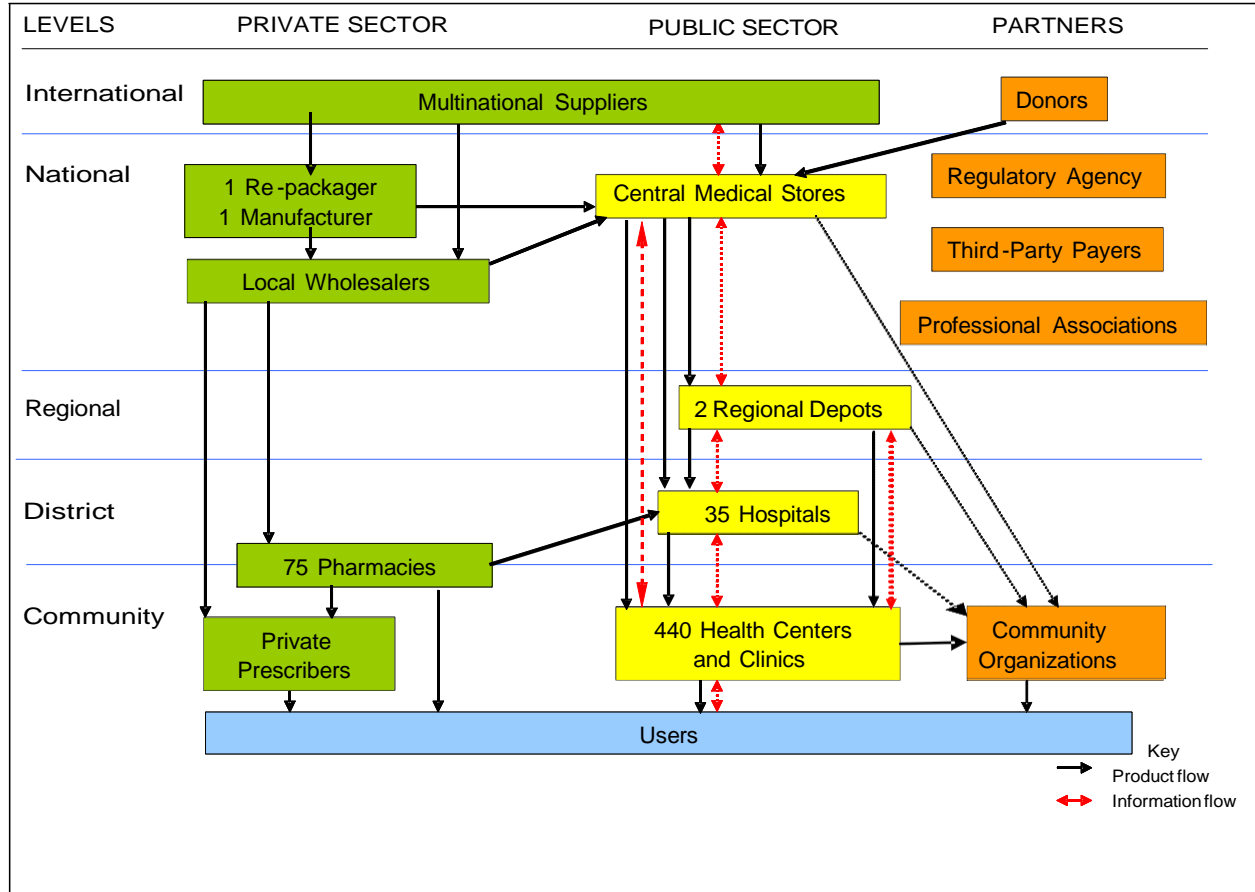
Country ownership of the public health supply chain in Namibia is already strong, with the government owning and driving major operational functions and contributing the bulk of funds required for procurement of essential medicines and clinical supplies. The approximate total value of health commodities procured annually through the CMS was US\$ 50 million in 2010 with less than 2% of these being procured through donations from development partners. During FY 2011/12, the Government of Namibia contributed 61% of funds used for procurement of ARVs, all of which was undertaken by CMS.

The Ministry of Health and Social Services currently manages approx. 475 public health facilities in Namibia including 35 hospitals, 43 health centers and about 400 clinics. CMS distributes directly to about 45 health facilities on a six-weekly cycle, including 26 of the 34 district hospitals around the country and the two Regional Medical Stores (RMS), at Oshakati, 700km northwest of Windhoek

¹ changed to 14 regions from August 2013 after split of Kavango into Kavango West and Kavango East

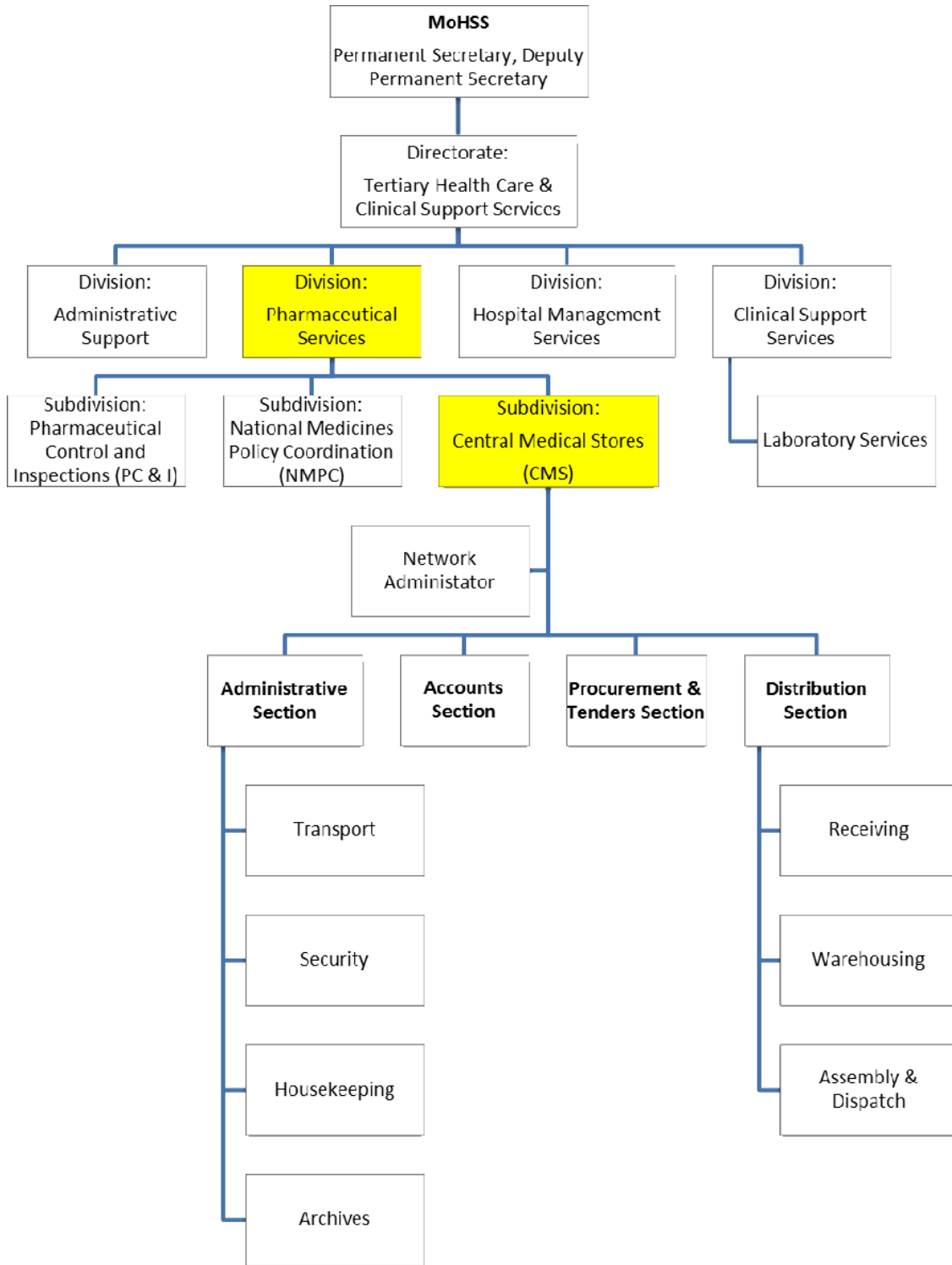
and at Rundu, 900km northeast of Windhoek. The Oshakati RMS serves up to 87 facilities in four northeast regions (Oshana, Ohangwena, Oshikoto, Omusati) while the Rundu RMS serves 32 facilities the northeast regions of Kavango and Zambezi (previously Caprivi).

Figure 3: Diagram of Information and Product Flow in Namibia Supply Chain



CMS is a sub-division within the Division: Pharmaceutical Services (PhS) under the Directorate of Tertiary Health Care and Clinical Support Services (THC&CSS) within the Ministry of Health and Social Services. Other sub-divisions under Pharmaceutical Service are (1) National Medicines Policy Coordination (NMPC) which is responsible for implementation of the national medicines policy and monitoring of pharmaceutical service delivery; (2) Pharmaceutical Control and Inspection (PC&I) which is responsible for regulatory matters including medicines registration. See organization chart below (figure 4):

Figure 4: Position of CMS within the MOHSS Organogram



National Supply Chain Assessment

Namibia, an upper-middle income country, is transitioning from donor support to country ownership and financial responsibility for supply chain operations and commodity procurement. As this transition progresses, donor support, both technical and financial, will decline requiring smart investment of resources to improve supply chain capability and performance. In order to inform smart investments, a supply chain assessment was conducted at the central level including the Central Medical Store (CMS) to identify strengths and opportunities for improvement.

Using the results of this assessment, both the Ministry of Health and Social Services (MOHSS) and donors can prioritize their continued investments in supply chain systems strengthening. The MOHSS can use the data to prioritize how to invest their funds into capacity building to ensure the supply chain meets its objectives. In addition, evidence-based decision-making will help donors ensure the maximum return for their investments, in a scenario of declining budgets for systems strengthening.

2.0 Methodology

2.1 The National Supply Chain Assessment Toolkit

The National Supply Chain Assessment is a comprehensive tool kit that was collaboratively developed by SCMS, USAID | DELIVER and SIAPS (Systems for Improved Access to Pharmaceuticals and Services). The kit provides tools for assessing the capability and performance of supply chain functions at all levels of a health supply chain. The results of the assessment help supply chain managers and implementing partners develop their strategic and operational plans and monitor whether activities are achieving their expected outcomes.

The assessment consists of two tools:

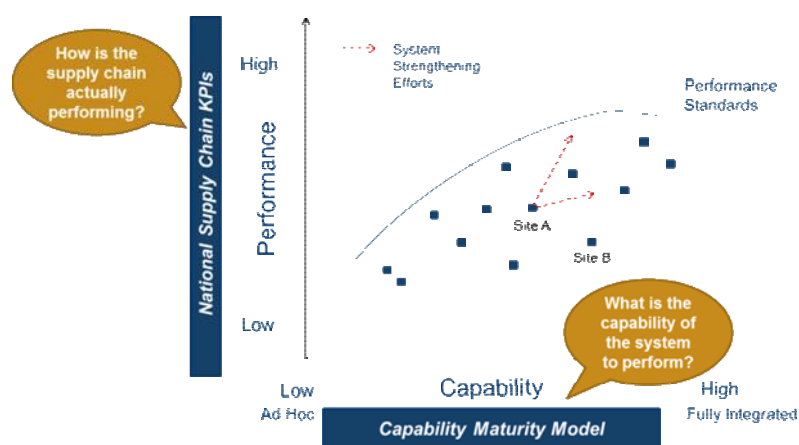
Y **Capability Maturity Model (CMM) Diagnostic Tool**

The CMM is a quantitative diagnostic tool that assesses the capability maturity of a supply chain

Y **Supply Chain KPI Assessment**

The Supply Chain KPI Assessment is a set of indicators that comprehensively measure

Figure 5: Assessing Supply Chain Capability and Performance



2.2 Scope of the assessment

This particular assessment was done only at national level, covering mainly the Central Medical Stores (procurement and distribution units), national level institutions including the National Medicines Policy Coordination (NMPC) sub-division and the Quality Surveillance Laboratory. The facility level assessment will be done as part of the routine annual national pharmaceutical support supervision visits (SSVs) in January – February 2014.

A 16-item tracer list was developed for use during the assessment and included key public health program commodities and some essential medicines and clinical supplies. Figure 6 below shows the tracer list items.

Figure 6: Tracer Commodities

Tracer Commodities		
	Product Name	Product category
1.	ARV	Lamivudine/Tenofovir[300/300mg]tabs
2.	Essential Medicines	Cefixime 200mg tabs
3.	ARV	Lopinavir/Ritonavir [200/50mg] tabs
4.	Consumable	Catheter IV 16G x 700mm [14G Needle]

Tracer Commodities		
	Product Name	Product category
5.	ARV	Lopinavir/Ritonavir [80/20mg]/ml Syr
6.	ARV	Nevirapine 10mg/ml Susp
7.	RTK	Uni-Gold HIV 1/2 Test Kit
8.	OI	Co-trimoxazole 200mg+40mg/5ml susp
9.	OI	Co-trimoxazole 400mg+80mg tabs
10.	Malaria	Malaria Test Kit
11.	Malaria	Artemether/Lumefantrine [20/120mg] tabs
12.	TB	Rifampicin/Isoniazid/Pyrazinamide/Ethambutol [R150/H75/Z400/E275mg] tabs
13.	TB	Rifampicin/Isoniazid/Pyrazinamide [R60/H30/Z150mg] tabs
14.	Family Planning	Male Condoms 52mm
15.	Family Planning	Medoxy Progesterone Inj 150mg/ml
16.	Essential Medicine	Oral Rehydration Salts Sachet For 1L

2.3 Data Collection

A team of 4 SCMS staff (1 HQ and 3 field based) collected data during the period August – September 2013. The team reviewed records covering the period April 2012 – March 2013 in line with government of Namibia financial year. Secondary as well as primary data were collected.

2.3.1 Secondary data collection

A literature review covering key national policy documents and related reports was done to generate a supply chain environmental profile of Namibia. Gaps that could not be filled led to focus group discussions (FGD)/ Key Informant (KI) interviews. A list of key references documents that were reviewed are included in Section 5.0 on page 42 of the report.

2.3.2 Primary data collection

Data collection and interviews were conducted by SCMS staff at two sites (CMS & NMPC) across the central level of the Namibian public health supply chain.

At each site the data collection team undertook two exercises

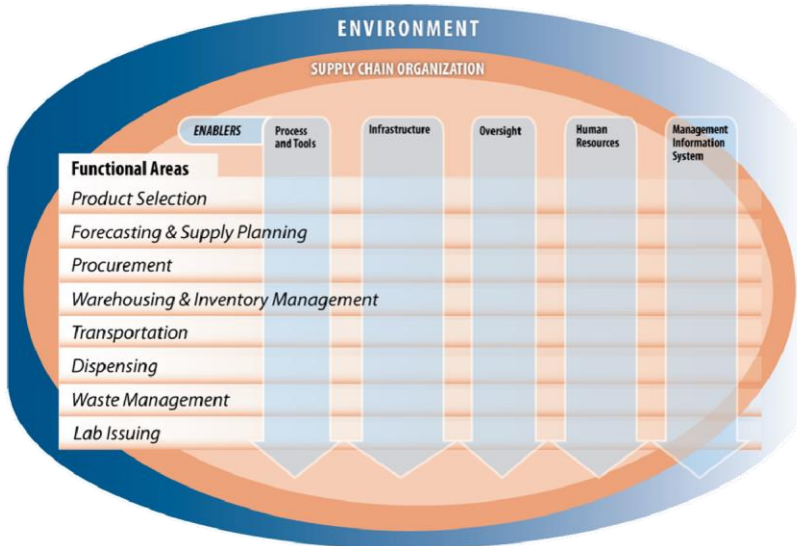
1. Interviewed relevant managers using the CMM questionnaire(s). Interview results were verified by direct observation of the relevant supply chain space such as a store room or warehouse.
2. Collected relevant KPI data using Syspro, ARV monthly reports, forecasts and other data sources. Details of specific sources used for each KPI can be found in Figure 11: KPI List and Data Sources on page 15-16.

2.4 CMM Tool

The CMM tool covers the key functional areas of the supply chain as well as measuring key “enablers” (figure 7) that impact all functions across the supply chain. For each functional area, scores are assigned for each capability, aggregated to understand the functional area as a whole as

well as the enabling elements impacting the functional area which include; processes and tools, infrastructure, oversight, human resources and management information systems (MIS)

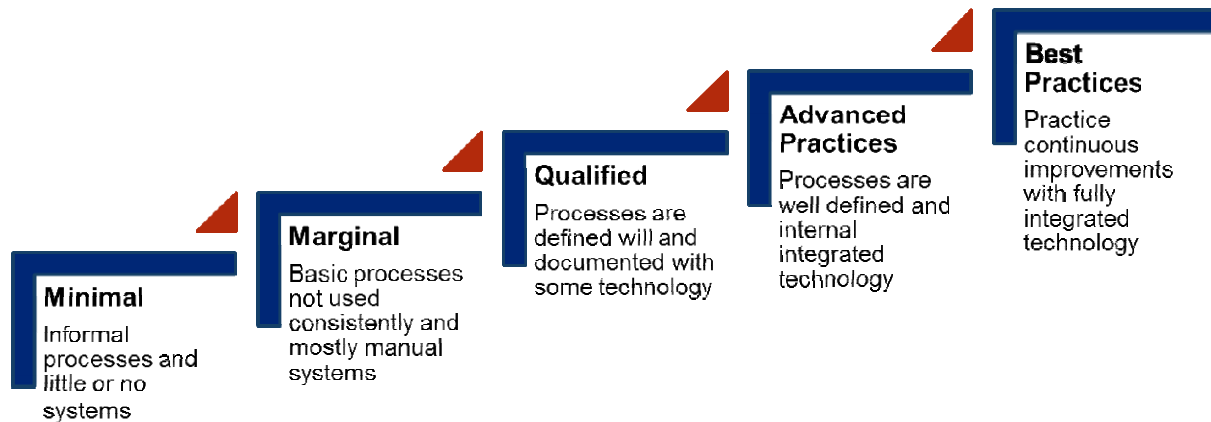
Figure 7: Functional Areas and Enablers Covered by CMM Tool



An overall maturity scale guides the definitions within the CMM tool, broadly defining each capability level (1-5). For each specific capability there are defined components at each level of the capability maturity scale that represent these broadly defined levels. For example, minimal capability (1) for the warehouse process of checking is that “orders are not checked to ensure correct items are picked” and best practice capability (5) is “dispatch weighs product to validate weight of carton is in range of items confirmed as picked.”

These levels were adapted from private sector best practice capability maturity models used to assess commercial supply chains.

Figure 8: Maturity Level Descriptions



Below, figure 9 illustrates an example of a capability with a specific maturity scale where components of capability are defined at each level (1-5).

Figure 9: Specific Capability from CMM Tool

Level: Central Warehouse Functional Area: Warehouse and Inventory Management Enabler: Infrastructure Capability: Building and power				
<input type="checkbox"/> Warehouse has a roof and floor for storing product <input type="checkbox"/> There is no power	<input type="checkbox"/> Warehouse has a level floor with some semblance of storage and staging areas <input type="checkbox"/> There is intermittent power	<input type="checkbox"/> Warehouse has a separate receiving and dispatch area <input type="checkbox"/> Regular power	<input type="checkbox"/> Warehouse has designated operational areas <input type="checkbox"/> There is a generator	<input type="checkbox"/> The warehouse has a battery back-up for cross over time to the generator kicking in

In Namibia, the CMM tool was implemented at the central level and interviews were conducted for each of the functional areas (figure 10).

Figure 10: Functional Area Implementation by Level

Functional Area	Site	Interview Respondent
Product Selection	NMPC	Emmanuel Ugburo
Forecasting & Supply Planning	NMPC/CMS	Emmanuel Ugburo Seija Nakamhela
Procurement	CMS	Seija Nakamhela
Warehousing & Inventory Management	CMS	Barnabas Kirwisa
Transportation	CMS	Hilde Gertze
Waste Management	CMS	Barnabas Kirwisa
Organizational	CMS	Tonata Ngulu

2.5 KPI Tool

At each site visit the data collection teams also collected data for several KPIs. The data sources were reviewed, data extracted and entered into an excel score sheet. Syspro reports were created specifically for each indicator that data existed within the system.

Figure 11: KPI List & Data Sources

#	KPI	Data Source(s)	Syspro Report	Timeframe
1	Stock Out Rates	Syspro	CMS Stock Cards (Kardex)	August 2012-August 2013
2	Stocked According to Plan	Syspro	Opening Balance, Sales	August 2012-March 2013
3	Quality Testing Pass Rate	Quality Lab Records	N/A Non-Syspro Data Source	October 2012-March 2013
4	Procurement Adherence to NEMList	Syspro, Nemlist	Items Received	April 2012-March 2013
5	% of Int'l Reference Price Paid	Syspro, MSH International Drug Price Guide	Items Received	April 2012-March 2013

#	KPI	Data Source(s)	Syspro Report	Timeframe
5	Forecast Accuracy	ARV PMIS Reports, Forecasts	N/A Non-Syspro Data Source	October 2012-March 2013
6	% of Orders Scheduled	Scheduled Order Book, Interim Order Tracking Sheet	N/A Non-Syspro Data Source	April 2012-March 2013
7	Vendor On-Time Delivery	Syspro	Custom report generated	January-December 2012
8	Expiry	Syspro	Expired Stock	April 2012-March 2013
9	Order Fill Rate	Syspro	Service Level	April 2012-March 2013
10	On-time delivery (OTD)	Scheduled Order Book, CMS Delivery Schedule, Delivery Books	N/A Non-Syspro Source	October 2012-March 2013
11	Facility Reporting Rates: On-Time	ARV PMIS Reports	N/A Non-Syspro Source	April 2012-March 2013
12	Facility Reporting Rates: Complete	ARV PMIS Reports	N/A Non-Syspro Source	April 2012-March 2013
13	Requisition On-Time	Scheduled Order Book, CMS Delivery Schedule	N/A Non-Syspro Source	April 2012-March 2013
14	Staff Turnover Rate	Interviews, HR Report (CMS)	N/A Non-Syspro Source	October 2012-March 2013
15	% of Procurements as Tenders	Syspro	Custom report generated	January-December 2012

2.6 Challenges and lessons learnt

Overall key informants and data sources were readily available for the data collection phase of the assessment. Despite this availability, there were some challenges in data collection, particularly for the KPI component of the assessment.

1. Data for two KPIs, requisition on-time and on-time delivery, were collected from the scheduled order book and delivery books respectively. Data was copied from these manual sources into an excel spreadsheet used to analyze the results which was time consuming and has a greater risk data quality issues due to transcription errors.
2. Analyzing the data for on-time delivery (OTD) created the largest challenge in the assessment as there is no single identifier on scheduled order and delivery books, allowing for easy tracking of an order from its receipt to delivery. In order to accommodate these challenges, analysis of OTD in this report only includes orders identified through the scheduled order book and some assumptions were made to link these orders by comparing the number of scheduled orders to deliveries and their dates. Local deliveries were also excluded from this analysis as the volume of interim orders delivered could not be separated from the scheduled orders.

Although these challenges existed, the large volume of data available through the Syspro system allowed for the robust analysis and inclusion of 15 KPIs in the assessment.

3.0 Data Analysis and Results

Analysis was completed in Microsoft Excel and Microsoft Access. For the purpose of presentation of results, all CMM scores are converted to a 0-100% scale rather than 1-5 scale.

- 1=20%
- 2=40%
- 3=60%
- 4=80%
- 5=100%

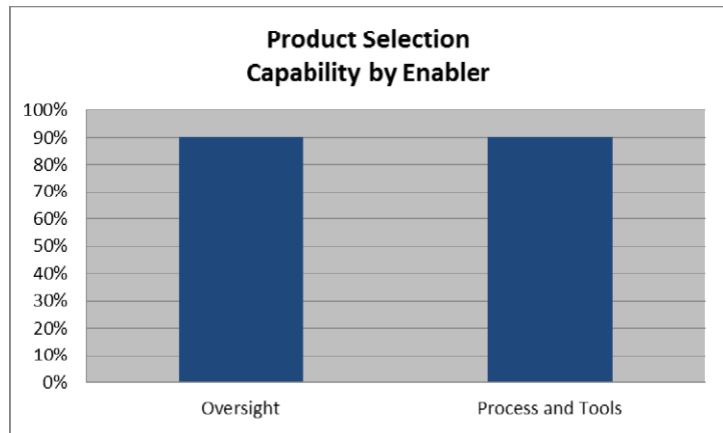
3.1 Product Selection

Overall product selection capability and performance are high, although there is room for improvement for the implementation of these capabilities.

Figure 12: Product Selection Capability by Enabler

Capability: 90%

Overall capability is high for product selection in Namibia with Standard Treatment Guidelines (STG) and Namibia Essential Medicines List (Nemlist) in place, as well as official multi-stakeholder committees formed to review and update these guiding documents. The processes regarding product selection are well-defined and there is adequate oversight in place to manage this function.



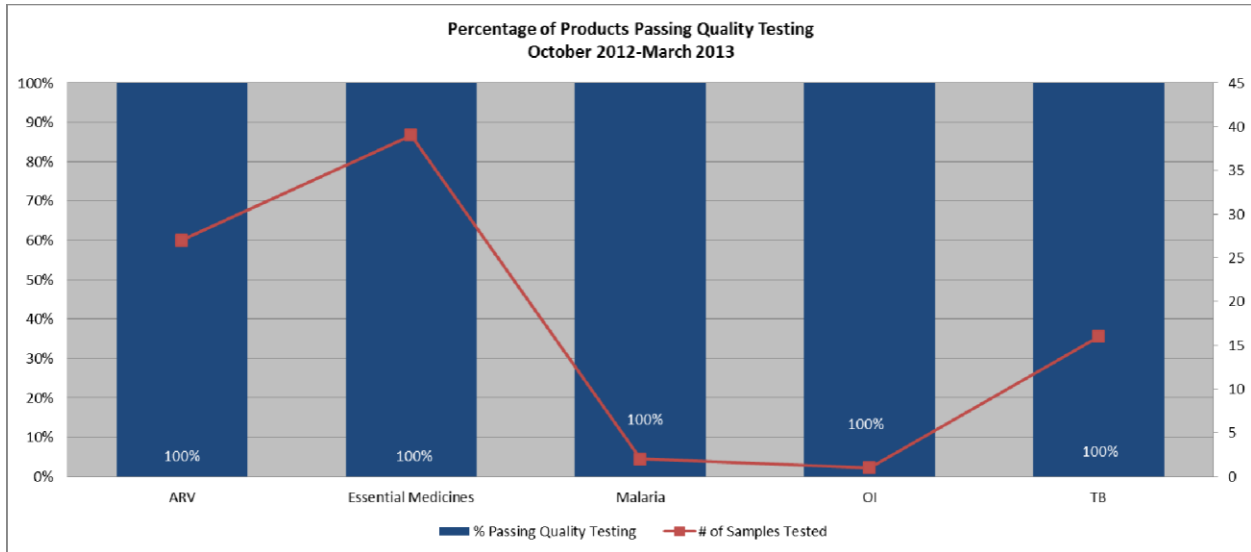
Percentage of Products Procured on Nemlist: 96%

Products procured between April 2012-March 2013 adhered to the Nemlist 96% of the time. Despite high performance and capability, the STG and Nemlist are not harmonized with several products on the STG that are not included in the Nemlist. Although committees for review of both the STG and Nemlist exist, several requests for revision of the Nemlist have been waiting in the queue since 2011. In addition, until around March 2013, most hospitals had been doing buy-out procurement of wide range of pharmaceuticals that are not included in the Nemlist but a recent policy directive now requires that all such procurement be centralized at CMS. Therefore, this indicator is expected to decline as CMS takes responsibility for the buy-outs due to the volume of work that this will add to CMS.

Quality Testing Pass Rate (of samples tested): 100%

All products tested between October 2012 and March 2013 passed quality testing, including essential medicines, ARVs, anti-malarials, OIs and anti-TB pharmaceuticals.

Figure 13: Percentage of Products Passing Quality Testing



Although these quality testing pass rates indicate that chosen suppliers have high quality products, quality testing capacity and capability are still a challenge in Namibia. Currently, there is a Quality Surveillance Laboratory (QSL) on-site at the CMS which tests product quality, and is currently in the process of undergoing WHO accreditation. Capacity for quality testing is limited, illustrated by only 26 of 48 samples received between October 2012 and March 2013 having undergone quality testing. QSL lacks a formalized sampling methodology, performing tests in an ad hoc manner based on when a quorum of batches of the same product have arrived at the lab. Testing volume compared to the number of batches sampled is low, indicating insufficient resources to test quality of products with the current sampling scheme.

Recommendations:

1. **Improve Efficiency of Nemlist Review and Updates:** Currently there is a process in place to update and review the Nemlist, with review from both therapeutic committees and the Essential Medicines List Committee (EMLC). NMPC and other stakeholders should ensure that the therapeutic committees and EMLC are adequately resourced to regularly update the Nemlist every two years and process Nemlist alteration requests in a timely manner. Increased collaboration between the Nemlist and STG therapeutic committees could also improve efficiency of the review and update processes and encourage harmonization of these two documents.
2. **Implement a Quality Assurance Sampling Scheme:** Current sampling scheme for quality testing at QSL could be improved to meet best practice standards. The QSL should consider implementing a sampling scheme, testing 1 shipment out of a certain number based on supplier risk. For example, a grade A wholesaler could have samples tested for 1 of every 25 shipments while a grade C wholesaler would have samples tested 1 of every 10 shipments. An initial assessment of current sample intake and human resources will identify feasibility of

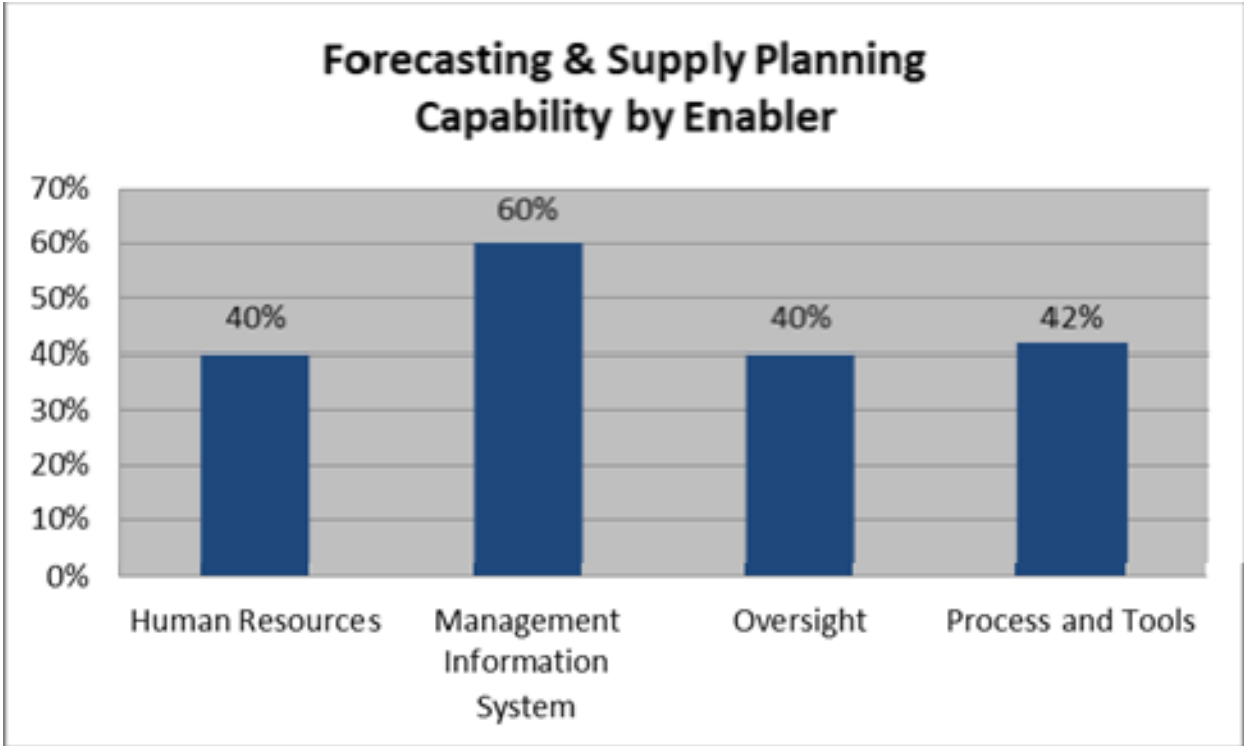
implementing this type of sampling scheme and point to any improvements required to accomplish best practice sampling for quality testing.

3.2 Forecasting & Supply Planning

Forecasting and supply planning capability is relatively low at 46% but performance is relatively high with 74% forecast accuracy for ARVs.

Capability: 46%

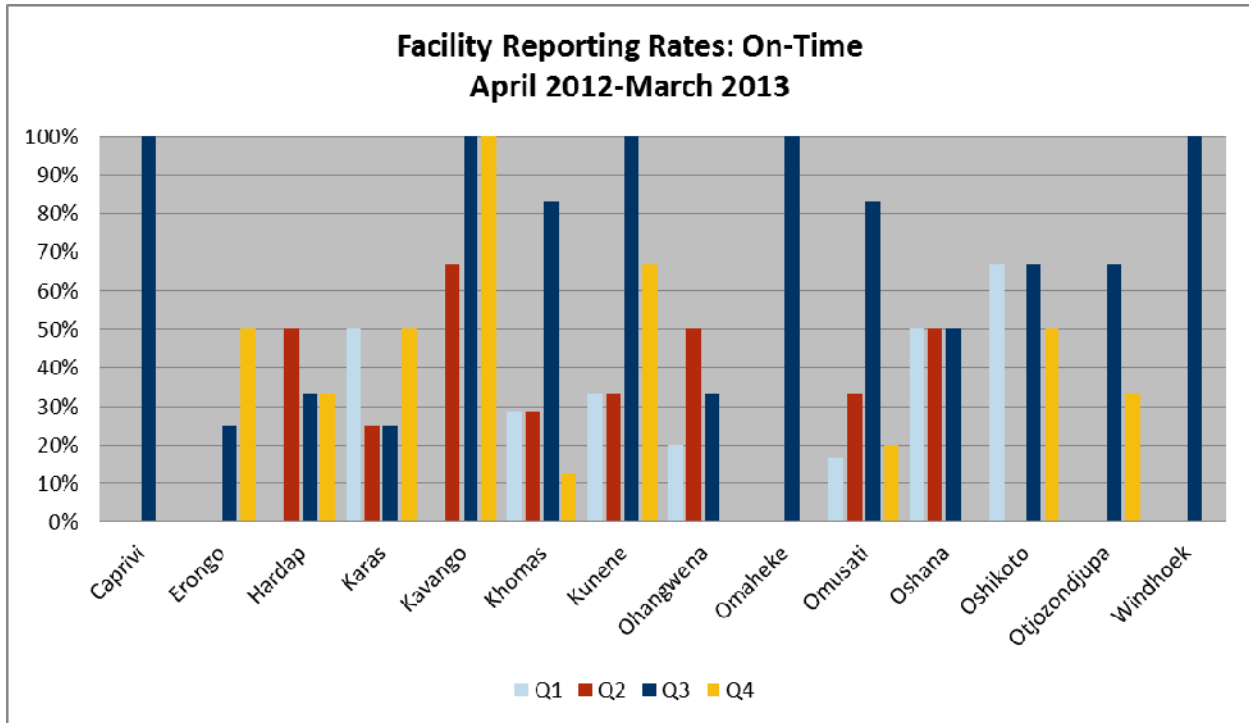
Figure 14: Forecasting & Supply Planning Capability by Enabler



Currently, there is a forecasting process in place at National Medicines Policy Coordination (NMPC) that uses reliable consumption data from the pharmaceutical management information system (PMIS) for ARVs. Capability is high for key forecasting capabilities of methodologies/assumptions (80%) and data collection processes (80%), indicating that the current processes in place meet advanced practice standards for forecasting. There is however room to improve the forecasting process which is currently mainly driven by targets to generate budget information with less consideration and adjustment for operational capacity constraints.

Data quality is relatively good, yet timeliness of reporting remains a problem, with overall timeliness of ART PMIS reporting at 35.2% from April 2012-March 2013.

Figure 15: Facility Reporting Rates Timeliness



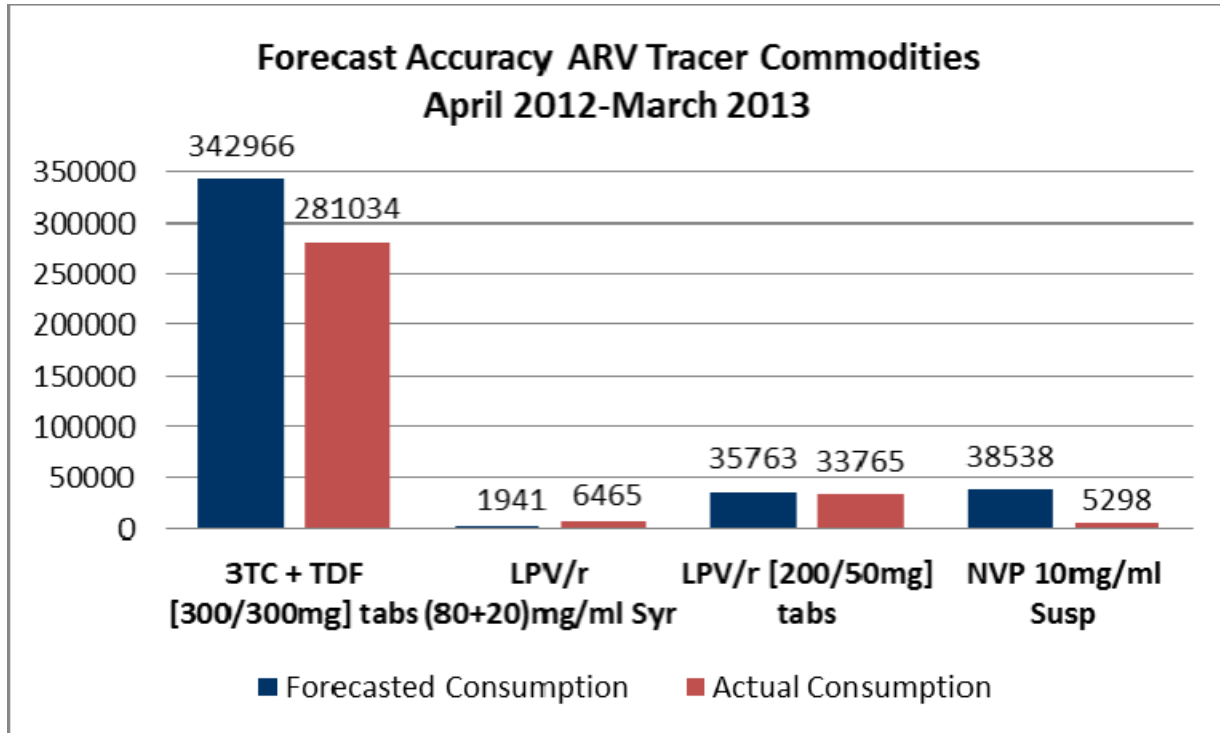
A major weakness for processes and tools is a lack of supply planning for any commodity groups. Forecasts are not currently translated into supply plans to inform procurement at the CMS, reflected in a supply planning capability of 20%.

Forecast Accuracy: 74%

Forecast accuracy, calculated for all ARVs is relatively good in Namibia when looking at either actual consumption or issues data from the CMS.

Currently re-supply decisions are based max-min levels at the CMS, which only takes into account issues data. Forecast accuracy against issues data is high at 96% accuracy but declines to 74% when comparing forecasted consumption to actual consumption.

Figure 16: Forecasted Consumption & Actual Consumption



For the ARV tracer commodities, forecast accuracy varies with the largest variation for Nevirapine 10mg/ml suspension at 548% indicating significant over-forecasting and smallest variation in Lopinavir/Ritonavir 200/50mg tabs at 94%.

Recommendation:

1. NMPC should coordinate better with public health Programs Managers to improve assumptions used in forecasting by making adjustments to program targets to cater for operational constraints at service delivery level.
2. The CMS should collaborate with NMPC to translate forecasts into supply plans for ARVs and other commodities where feasible. Using consumption data, the CMS can improve their visibility into the actual volume of product being dispensed to patients and mirror this in their procurement plans.

Supply plans will enable the procurement unit at the CMS to better plan their procurements from suppliers. Currently re-supply decisions are taken based on the min-max levels of commodities without advance planning of the required quantities/timeframe for procurement. Improved planning will allow the CMS to contract with suppliers, hopefully improving prices and quality of products procured. Furthermore, supply plans provide suppliers visibility into the estimated order volume to expect, allowing for better planning by suppliers as well.

3.3 Procurement

Capability: 56%

Overall procurement capability is average at 56%, although when looking at the enablers there are varying levels of capability within the functional area.

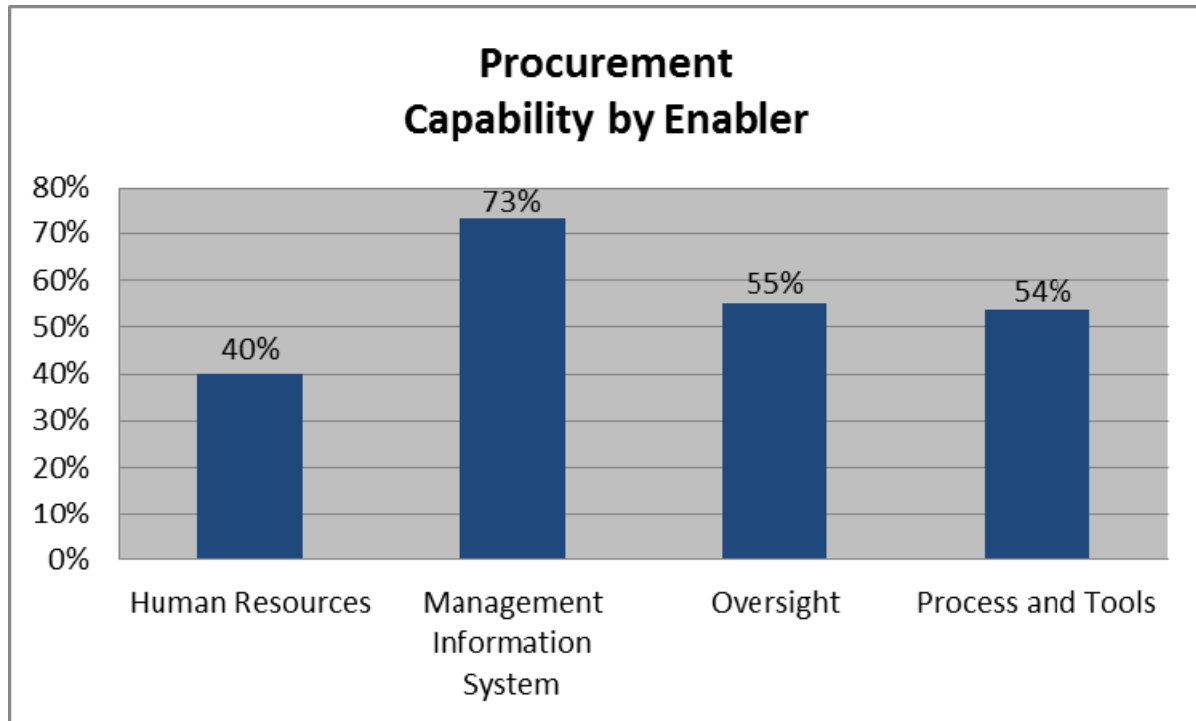
Management information systems for procurement are in place (73%), with procurement information available in near real-time through the Syspro system at the CMS.

On the other hand, several key procurement processes have low capability including:

Processes & Tools:

1. Supplier pre-qualification capability is at 20% indicating that there is no pre-qualification process in place indicating that the process for selecting suppliers lacks transparency and does not enforce criteria and specifications such as product quality, vendor performance or finances.
2. Expediting/order management is an opportunity for improvement at the CMS. Although a Syspro report detailing outstanding orders is used on an ad hoc basis to contact non-compliant suppliers, there is no formal, documented contract management system.

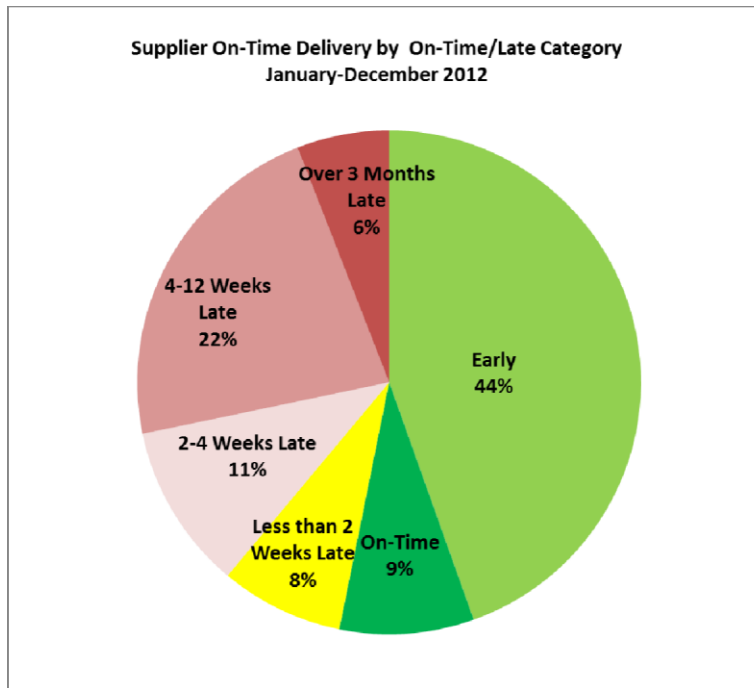
Figure 17: Procurement Capability by Enabler



Supplier On-Time Delivery: 61%

From January-December 2012, 61% of vendors delivered orders within 14 days of the agreed upon delivery date (figure 18).

Figure 18: Supplier On-Time Delivery



Disaggregating supplier on-time delivery (OTD) data to the level of individual supplier highlights that some vendors perform well, while others have significant issues with OTD which is of particular concern when the suppliers are responsible for a large volume of the CMS shipments. As highlighted in the 2012 report, *Technical Report of Supplier Performance Monitoring for 2012 at Central Medical Store, Namibia*, the supplier base for most procurements at the CMS is limited within a handful of suppliers. In 2012, the top 4 suppliers accounted for 64% of shipments (2465 of 3865). For example, one of key suppliers that accounted for 32% of all shipments, only delivered on-time 67% of the time (figure 19).

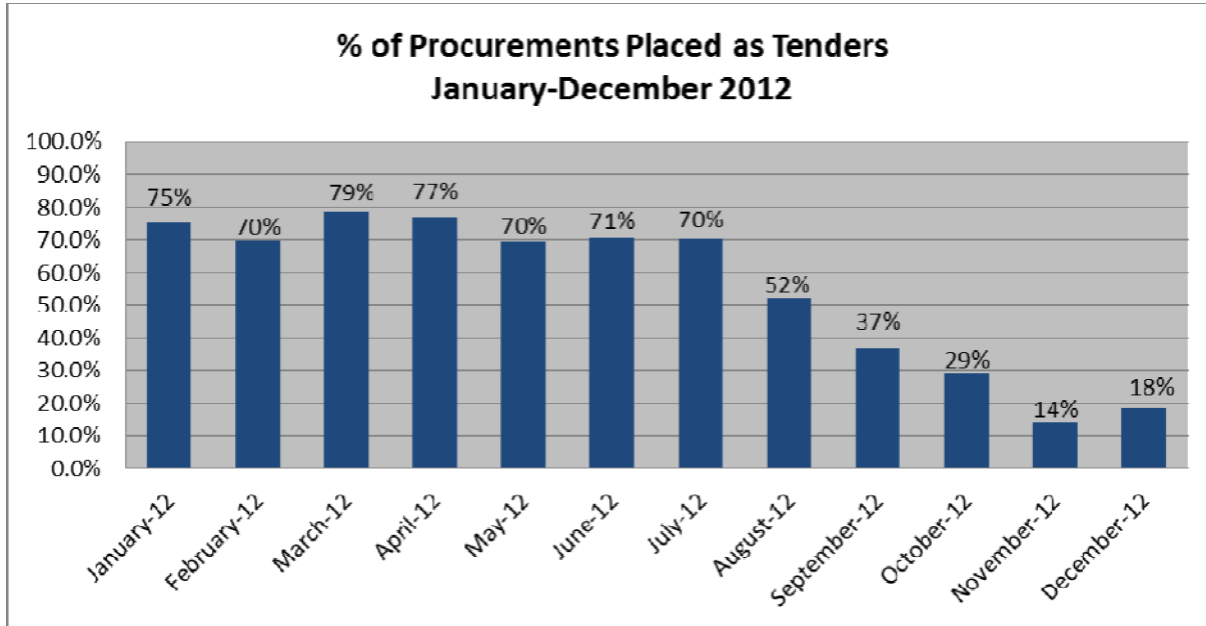
Figure 19: Top 4 Suppliers (by Number of Shipments)

Supplier	Number of Shipments	% of All Total Shipments	On-Time Delivery %
Supplier A	1233	32%	67%
Supplier B	497	13%	72%
Supplier C	276	7%	50.7%
Supplier D	459	12%	70.4%

% of Procurements Placed as Tenders: 53%

Between January-December 2012, procurements placed as tenders declined from 75% in January to 18% in December, with an overall percentage of tendered procurement at 53% for the whole year (figure 20).

Figure 20: % of Procurements Placed as Tenders



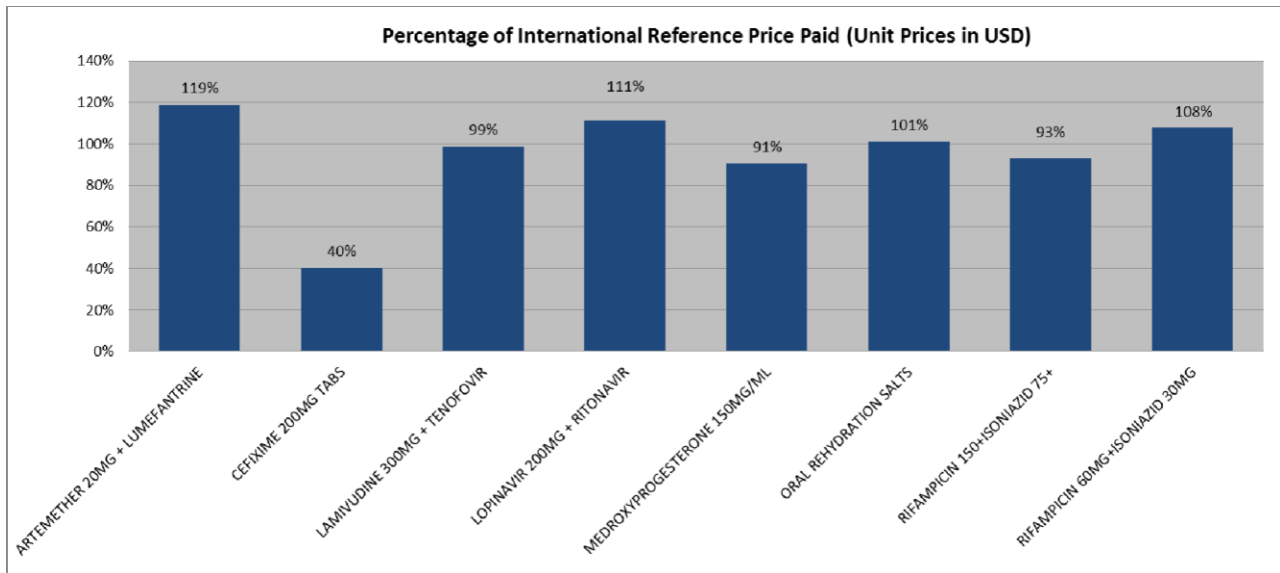
The decline in tendered procurement reflects two major changes to procurement at the CMS including:

1. Due to a decision by senior MoHSS management to re-structure procurement by CMS, most supplier contracts that lapsed by September 2012 have not renewed or awarded to other suppliers thus shifting procurements previously placed through tenders to the request for quotation (RFQ) model. As a consequence, almost all CMS procurement is currently being executed using RFQs.
2. Over the course of 2013, MOHSS began to centralize the management of buy-outs, removing the authority to place buy-outs for non-Nemlist items procurements at the hospital level increasing the number of procurements placed as buy outs at the CMS. This has resulted in increased workload and also potentially divided the attention given to the core function of procurement of Nemlist items by CMS.

% of Average Int'l Price Paid:

Overall, the prices paid by CMS for tracer commodities are close to the international reference price in the MSH International Drug Price Indicator Guide. Prices paid range from 40% of the international reference price to 119% of the international reference price.

Figure 21: % of International Reference Price Paid



Although the prices paid for the tracer commodities are relatively close the international reference price, analysis of a sample of products procured (818 of 3995) only 15% (124 of 818) of line items procured were purchased at the international reference price or below. Expand this selection to 150% of the international reference price and only 21% (178 of 818) of the line items meet this criterion. This indicates that within this sample 79% of products were procured at a price more than 150% above the international reference price, which indicates that the CMS is not always receiving competitive pricing

Recommendations

1. Currently supplier performance management at the CMS is done in an ad hoc manner, focusing on communicating with vendors when they have late shipments. Data to implement certain aspects of supplier performance management is available in Syspro, as reports are regularly run to check supplier on-time delivery for outstanding orders. There is a penalty system in place in supplier contracts that allows the CMS to charge penalties to suppliers whose non-compliance costs the CMS more money.

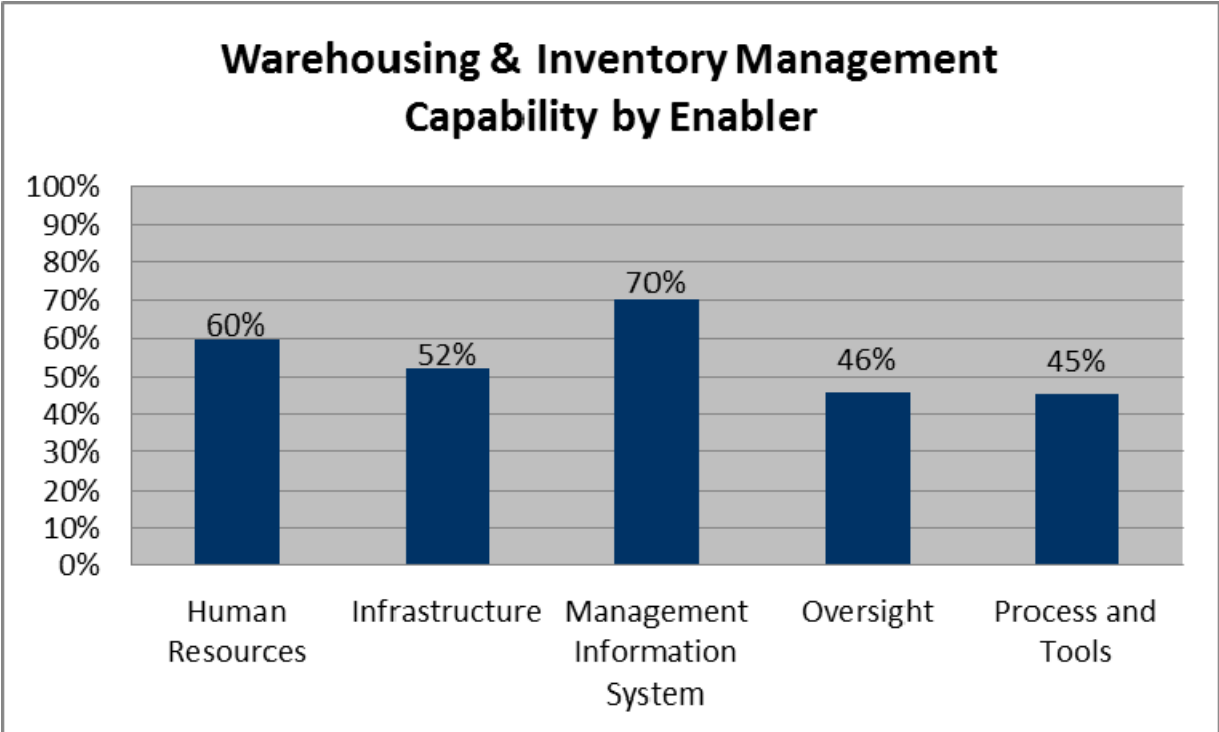
The procurement unit should consider expanding the monitoring system for supplier performance, implementing key performance indicators (KPIs) beyond vendor on-time delivery. These measures should assess competitive pricing, adherence to specifications, product quality and customer service to get a complete picture of supplier performance. Supplier performance management should also involve active communication with suppliers, including regular updates on performance, incentives for high performing suppliers and meetings to discuss improvement actions where necessary. These performance indicators and subsequent analysis should be used to inform decision-making regarding future supplier choices, taking into account the complete picture of performance including on-time delivery and competitive pricing.

2. Shifting procurement processes are impacting both the capability and performance of the procurement unit at the CMS. Shifts to using the RFQ procurement method and centralization of buy outs previously done by hospitals has increased workload on CMS the procurement unit and increased risk of poor performance, non-competitive prices and product quality issues.

3.4 Distribution

Warehousing & Inventory Management

Figure 22: Warehousing & Inventory Management Capability by Enabler



Capability: 50%

Warehousing & inventory management capability falls in the middle of the capability maturity scale at 50%, with enablers ranging from 45% capability for processes and tools to 70% for management information systems (MIS), because of the Syspro inventory management system.

Although there are defined processes in place through the SOP manual developed in 2006, adherence to these processes has slipped in the last year due to staff turnover and lack of oversight. Several core warehousing functions have low capability as shown in the table below.

Figure 23: Warehousing & Inventory Management Processes & Tools Capabilities

Capability	Description of CMS Challenges	Score
Put-Away	Storage space constraints can impede the use of First Expiry First Out (FEFO) although FEFO is understood and a documented policy	40%
Checking	No checking done in the pick and pack process. Sometimes boxes are sent to wrong facility or quantities are inaccurate when they arrive at facilities.	20%
Order Shipment & Receipt Confirmation	No shipment or order confirmation in place. Receipt confirmation in place but minimal information included. Often just carton number other than key products.	20%

Capability	Description of CMS Challenges	Score
Expiration Management	Only expiry dates for 'critical items' tracked in Syspro. FEFO sometimes respected. No designated space in the CMS for expiries due to storage space constraints	40%
Quarantine Tracking	No quarantine area in the warehouse. Not always physically labeled when quarantined.	20%

In addition to adherence to processes, the assessment revealed low capability in infrastructure mainly due to the limited storage capacity at the CMS. Although there are separate storage areas for program products and therapeutic formulas for essential medicines, the space is inadequate. Bulk products are stored in the hallway of the CMS higher than the recommended 1.2 meters and some expired donated products are stored in a corner of the receiving bay due to inadequate capacity to create a designated space for unusable products.

The main CMS warehouse has about 2,800 square metres of usable storage space but this space is split into 22 separate storage locations or rooms by a mix of solid brickwork and heavy duty steel mesh partitioning. In addition, due in part to the increased volume of commodities with scale up of ART services, CMS has over the years been allocated additional offsite storage locations (about 5km from the main site) consisting of four separate buildings with a combined usable storage space of about 2,500 square metres. However, regular cycle stock often fills up all available space with CMS resorting to use of gangways for storage. The government of Namibia plans to construct a new CMS building that will house all pharmaceuticals under one-roof and a feasibility study was completed in 2012 but there had been slow progress in identifying a suitable site and the commencement of construction.

Despite capability challenges, performance remains relatively high for some warehousing KPIs.

Order Fill Rate (Service Level): 80%

Order fill rate or service level, measured as the comparison of quantity issued by CMS compared to the quantity ordered for each sales order, is fairly high at 80%. Of the 2356 sales orders received between April 2012 - March 2013, 68% achieved an order fill rate above 90% and 79% of sales orders achieved an order fill rate percentage above 75% (figure 24).

Figure 24: Order Fill Rate

Order Fill Rate %	Count of Sales Orders	% of Sales Orders
Below 30%	179	8%
30-50%	120	5%
51-75%	185	8%
76%-90%	260	11%
90% or above	1612	68%

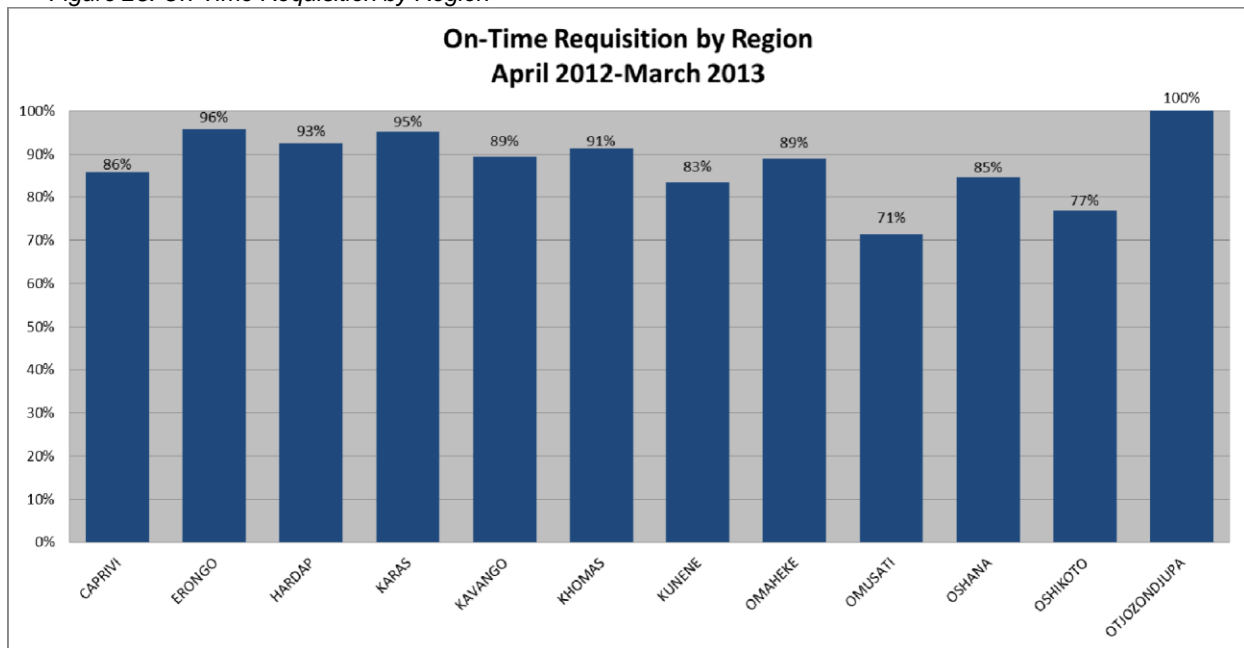
Expiry: 1.5%

Expiry is low, with only 1.5% of stock expiring between April 2012-March 2013, another indicator of good warehousing and inventory management performance.

Requisition On-Time: 90.4%

The delivery schedule set up by the CMS for 6 month periods stipulates the required date for requisitions to arrive at the CMS for each delivery cycle. Between April 2012-March 2013, 90.4% of scheduled orders were placed by health facilities and other CMS customers within three days of the expected date. By region, on-time requisition submission is high, with all regions at 70% or above (figure 25).

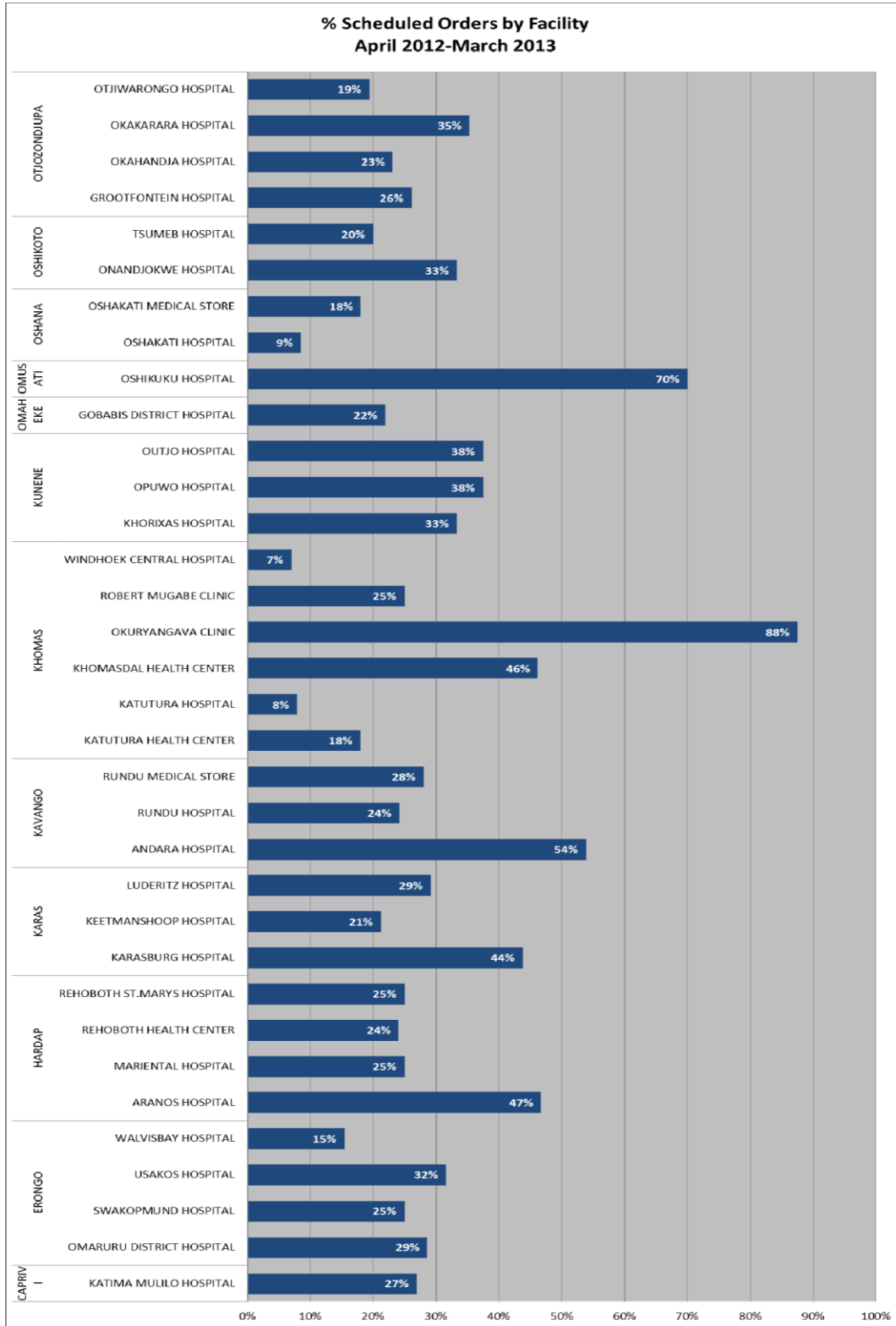
Figure 25: On-Time Requisition by Region



% of Scheduled Orders: 22.7%

Although the order fill rate for scheduled orders is 80%, a significant challenge within the supply chain is the large volume of interim (emergency) orders being placed by facilities. Of the 1073 orders logged in the scheduled and interim order delivery books, between April 2012-March 2013, only 230 orders were scheduled. The remaining 843 orders were placed as interim orders which place a large burden on the CMS. Local facilities within the Khomas region are the primary source of interim orders with Katutura Hospital and Windhoek Central Hospital placing 128 and 133 orders respectively.

Figure 26: % of Orders Placed as Scheduled Orders



Stock Accuracy:

A physical stock count of tracer commodities was taken at the CMS and compared to the quantity in the Syspro system. Stock accuracy for some tracer commodities fell within the acceptable tolerance bands although some commodities, such as Rifampicin + Isoniazid 60/30mg (80%), Lopinavir+Ritonavir Syrup (15%) and Rifampicin+Pyrazinamid 150/400mg (16%) had large variations in the stock on hand from a physical count and in the Syspro system.

Figure 27: Stock Accuracy of Tracer Commodities

Tracer Commodity	Stock on Hand Variance	Within Tolerance Band (Y/N)
ARTEMETHER 20MG + LUMEFANTRINE	-0.22%	Yes
CO-TRIMOXAZOLE 80+400MG TABS	4.39%	No
LAMIVUDINE 300MG + TENOFOVIR	-2.07%	Yes
LOPINAVIR + RITONAVIR SYR	15.74%	No
LOPINAVIR 200MG + RITONAVIR	-4.43%	No
MALARIA TEST KIT	-3.34%	No
MEDROXYPROGESTERONE 150MG/ML	5.11%	No
NEVIRAPINE SUSPN 10MG/ML 240ML	-0.84%	Yes
ORAL REHYDRATION SALTS	-5.99%	No
RIFAMPICIN 150+PYRAZINAMID 400	-16.09%	No
RIFAMPICIN 60MG+ISONIAZID 30MG	-80.58%	No
UNIGOLD TEST KIT	33.33%	No

Stock Out Rates: 25%

Four of 16 tracer commodities experienced a stock out at the CMS between September 2012 and August 2013.

Figure 28: Stock Out Rates for Tracer Commodities

Tracer Commodity	Stock Out (Y/N)	Number of Days Stocked Out
Catheter IV 16G x 700mm [14G Needle]	Yes	At least 100 Days (Item not restocked after 24-May-2013)
Cefixime 200mg tabs	Yes	At least 158 Days (Item not restocked after 27-March-2013)
Medoxy Progesterone Inj 150mg/ml	Yes	2 Days
RHZ [R60/H30/Z150mg] tabs	Yes	At least 71 Days (Receipt not within reporting period)

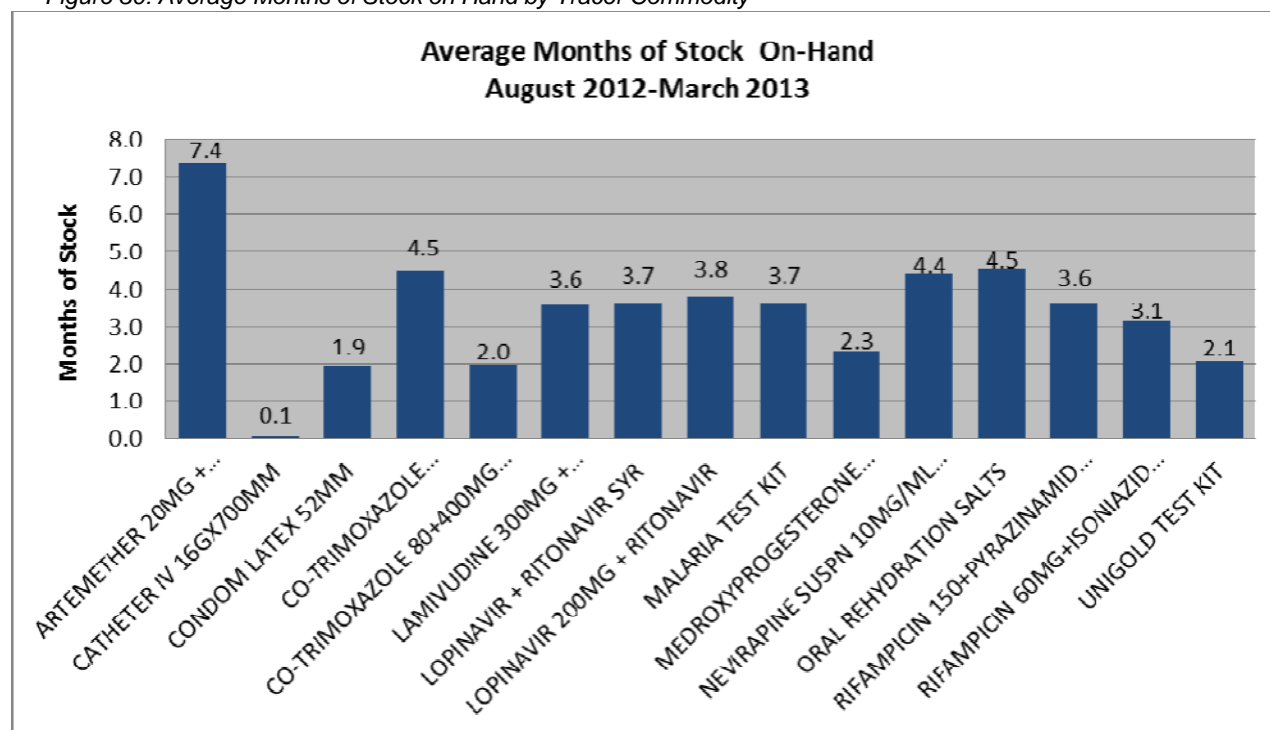
Stocked According to Plan: 33%

In addition to stock out rates, tracer commodities were assessed to see whether they were within the established minimum and maximum stock levels between August 2012 and March 2013. For ARVs, the established min/max levels are 8 to 12 months. For all other products the min/max levels are 3 to 6 months. Overall stocked according to plan for all tracer commodities is 33%, with 5 of 15 commodities with their average min/max levels within the established standards.

Figure 29: Stocked According to Plan by Tracer Commodity

Tracer Commodity	Stocked According to Plan	Average Months of Stock on Hand
ORAL REHYDRATION SALTS	Yes	4.5
MALARIA TEST KIT	Yes	3.6
NEVIRAPINE SUSPN 10MG/ML 240ML	No	4.4
LOPINAVIR 200MG + RITONAVIR	No	3.8
LOPINAVIR + RITONAVIR SYR	No	3.6
LAMIVUDINE 300MG + TENOFOVIR	No	3.5
UNIGOLD TEST KIT	No	2.1
MEDROXYPROGESTERONE 150MG/ML	No	2.3
ARTEMETHER 20MG + LUMEFANTRINE	No	7.3
CO-TRIMOXAZOLE 80+400MG TABS	No	1.9
RIFAMPICIN 150+PYRAZINAMID 400	Yes	3.6
RIFAMPICIN 60MG+ISONIAZID 30MG	Yes	3.1
CO-TRIMOXAZOLE 40/200MG/5ML	Yes	4.4
CONDOM LATEX 52MM	No	1.9
CATHETER IV 16GX700MM	No	0.05

Figure 30: Average Months of Stock on Hand by Tracer Commodity



Recommendations:

1. Human resources turn over and space constraints are impacting warehousing and inventory management capability, particularly adherence to processes and SOPs.

Staff Turnover: In the last fiscal year, 4 of 5 pharmacist assistants left their posts and were replaced. As a first step, the CMS should ensure that all employees receive formal and on-the-job training on their core functions and related processes/SOPs. After training, regular monitoring of operations should be undertaken to ensure that key warehousing/distribution functions are implemented including checking product during the picking and dispatching stages and expiration management.

HR Constraints: In addition to high staff turnover rate in the warehouse, several interview respondents highlighted that the current staff levels were insufficient to effectively implement warehousing activities. The CMS could analyze the current workload and staffing levels to determine what the adequate number of staff required and lobby MOHSS pharmaceutical services for any additional resources. Current staffing levels are likely too small to handle the existing workload and the CMS should consider seeking budget resources for additional pharmacist assistants and pharmacists to work in the warehouses.

2. Scheduled requisition date of receipt and ordering facility is currently captured manually in the scheduled order book and interim orders, ordering facility and number of products, are captured in an access database before line item data is entered into the Syspro system. Orders are identified by their sales order number in Syspro, making tracking the order from receipt to delivery very difficult. In order to better track orders from reception to fulfillment and delivery, the CMS should consider re-structuring their data collection processes for requisitions and distribution. This could be achieved by having an Order Number for each order that must then appear in the facility Order Book and Register used at CMS and also be captured in Syspro. CMS should also utilize the available Syspro data field that distinguishes scheduled orders from interim orders. Improved data availability will make regular performance monitoring easier.
3. Discrepancy between order fill rate and the large volume of interim orders indicates that there are potential inventory management challenges at the facility levels of the supply chain. Although their scheduled orders are being filled relatively well, facilities are still placing large numbers of interim orders. The MOHSS should investigate inventory management issues at SDPs to determine root cause of large volumes of interim orders. The extension of this assessment to the health facility level which is planned for January-February 2014 as part of the national pharmaceutical supervisory support visits will be important in filling this information gap.
4. The Government of Namibia should fast-track the construction of a new medical store to cater for the ever-increasing volume of medicines and the need to maintain sufficient buffer stocks. The CMS should also consider options such as direct delivery by suppliers to the two regional medical depots in Oshakati and Rundu.

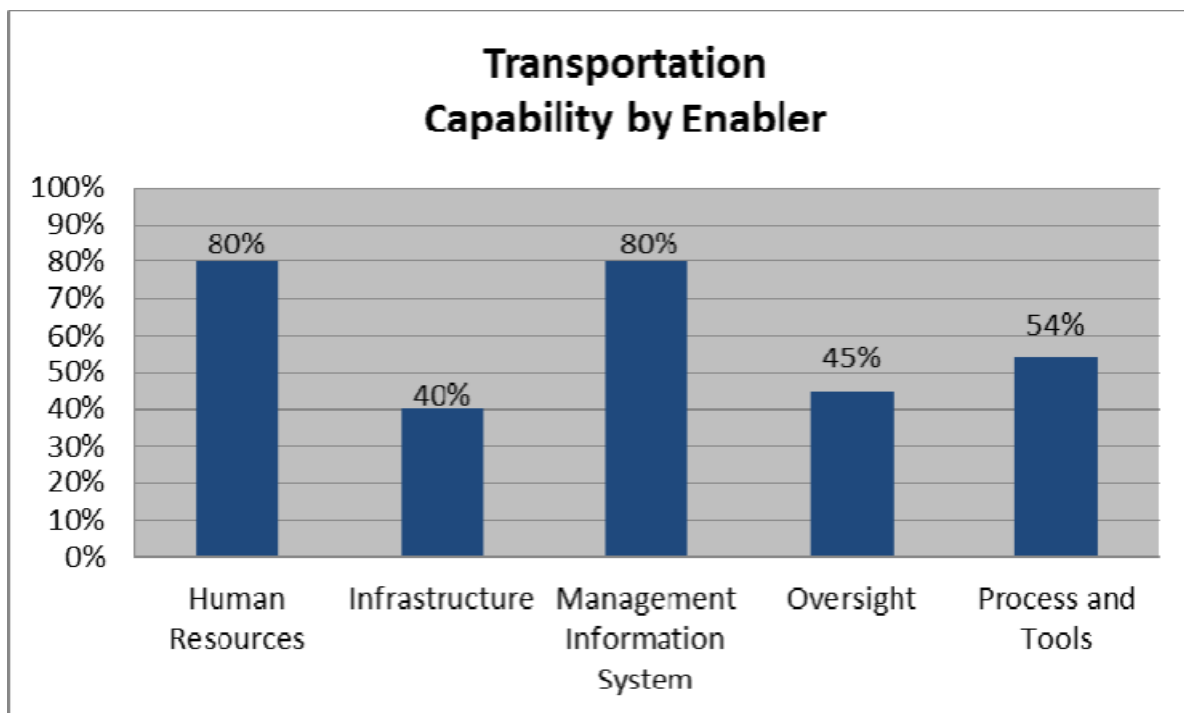
3.5 Transportation

Capability: 55%

Overall capability for transportation is average at 55%, reflecting that although there are several systems in place, they are underutilized in daily operations. The CMS has an automated Transport Management System (TMS) that tracks fleet movements in real time, although it is not currently being utilized, and adequate human resources to carry out transportation functions.

Although the CMS has a fleet with cold chain capability, its capacity to meet demand is somewhat limited evidenced by the use of a third party logistics provider (3PL), Nampost. Capacity to fulfill scheduled order with the existing fleet is relatively good, although as highlighted elsewhere, 79% of all orders placed with the CMS are interim orders.

Figure 31: Transportation Capability by Enabler



Processes & Tools: Overall processes and tools capability is average at 54% reflecting an average or several high performing capabilities and several low performing capabilities.

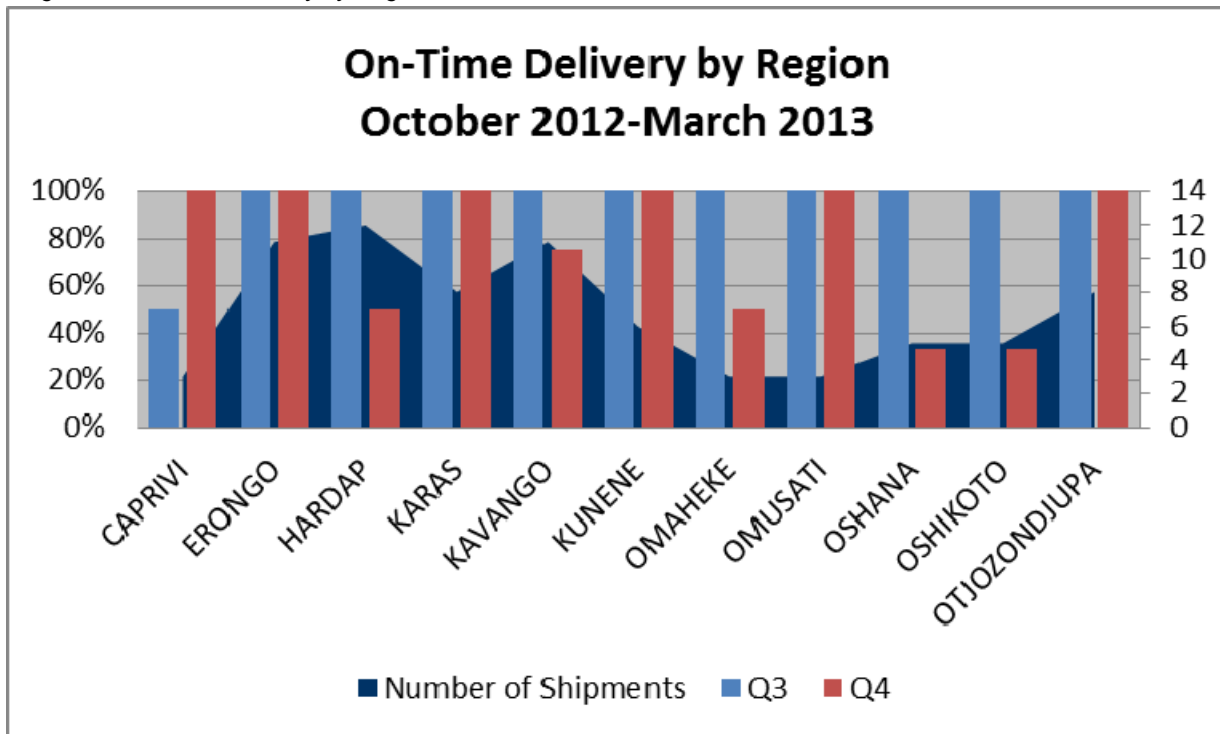
1. *Outbound Transportation & Shipment Visibility (80%):* Managed by TMS, outbound transportation and shipment visibility are strong capabilities for transportation at the CMS. Shipments can be tracked 24/7 through the TMS and some vehicle utilization analysis is performed using data from the system.
2. *Reverse Logistics (80%):* Reverse logistics are another strong capability of the CMS. Returns are accepted by delivery truck drivers after being cleared through a manual pre-authorization process, creating a formal returns process for products delivered from the CMS.

3. *Security Management (60%)*: Delivery trucks use seals as a preventative security measure, sealing the truck at each delivery site in the presence of witnesses. Although these measures are in place, evidence of adherence to these security measures are not clear due to incomplete delivery books. Delivery books should include the seal number used at each delivery site, although from October 2012-March 2013 only 77% of delivery book entries contained a seal number.
4. *Management of 3rd Party Outsourced Transport Provider (20%)*: Due to capacity constraints, the CMS uses Nampost to delivery orders on an ad hoc basis as needed. Although the CMS uses Nampost as a 3PL, management of this outsourcing is limited. The CMS no longer asks for quotes on pricing from Nampost who is used as the sole source 3PL provider. Records from Nampost deliveries are not kept beyond invoices and waybills.

OTD: 85%

On-time delivery performance for scheduled deliveries is high, with 85% of deliveries arriving within 7 days of the scheduled delivery date.

Figure 32: On-Time Delivery by Region



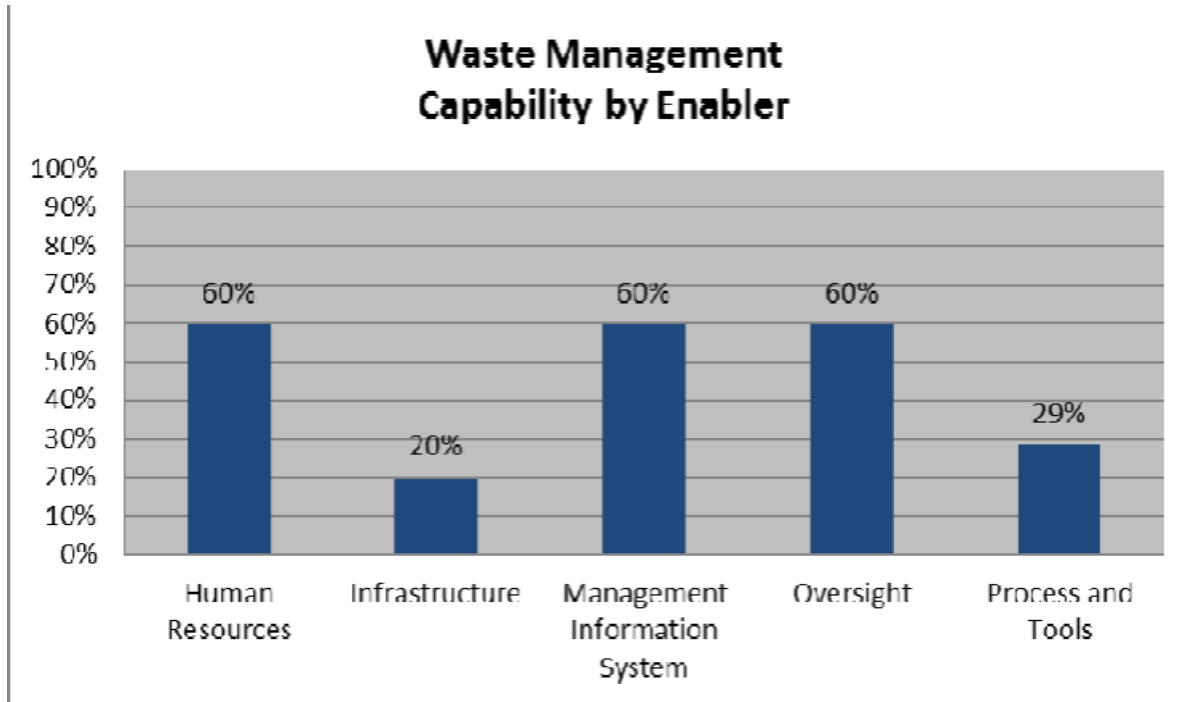
Recommendations:

1. The CMS should build on their existing quarterly report to include more robust performance management, including operational and strategic indicators in addition to the existing cost indicators. In addition to expanded monitoring and reporting, CMS management and the distribution unit should use the analysis to inform their decision-making. Currently, the costing and utilization data is used for fleet management, to determine when to purchase new vehicles and maintenance intervals. Expansion of the performance management could be used to inform strategic decision-making, such as route optimization, as well.
2. CMS can improve further on its customer service by offering customers greater outbound transportation information by use of advance shipping notices (ASNs) and using the TMS to inform customers to prepare in advance to unload the CMS delivery truck. There is also room for improvement in relaying to customers information about stock availability.
3. Nampost is currently used as the sole source 3PL for transport needs beyond fleet capacity. Although the CMS does cost analysis on its own fleet, it does not monitor costs of Nampost managed deliveries. The CMS should consider analyzing the costs of outsourcing to Nampost to ensure that they are providing a best value service. Based on the results of this analysis, the CMS may want to undergo a Request for Proposal (RFP) to choose a transport provider in a competitive, transparent bidding process. In addition to cost analysis, the CMS should consider actively managing Nampost through a performance based contract, based on key indicators such as on-time delivery and operational efficiency.

3.6 Waste Management

Waste management capability is low at 38%, with opportunities for improvement in processes and tools and infrastructure.

Figure 33: Waste Management Capability by Enabler



Pharmaceutical and health commodity waste is transported from the CMS to the Kupferberg landfill where it is to be disposed of in the hazardous cell, with lime filled trenches.

Several challenges exist within waste management including:

1. Unusable products that require treatment or disposal are segregated at the CMS in an ad hoc space in the receiving bay and elsewhere within the CMS warehouses. These products may or may not be labeled and tracking and records management for unusable products are limited.
2. Reverse logistics are not in place for expired pharmaceuticals, with facilities expected to transport and/or dispose of expired product on their own.
3. Although the Kupferberg landfill has a hazardous cell for disposal of pharmaceuticals, it is unclear whether waste from the CMS is being properly treated with some evidence indicating that pharmaceutical waste is sometimes dumped in a section of the landfill site reserved for general waste.

Recommendations

1. CMS should consider improvement of management of unusable of pharmaceutical products before disposal. Including adequate space for separate storage of expiry in the new warehouse, currently under construction, will provide the required infrastructure to segregate

stock. CMS should also develop standard operation processes regarding the management of unusable pharma, including storage, dispatch and reverse logistics.

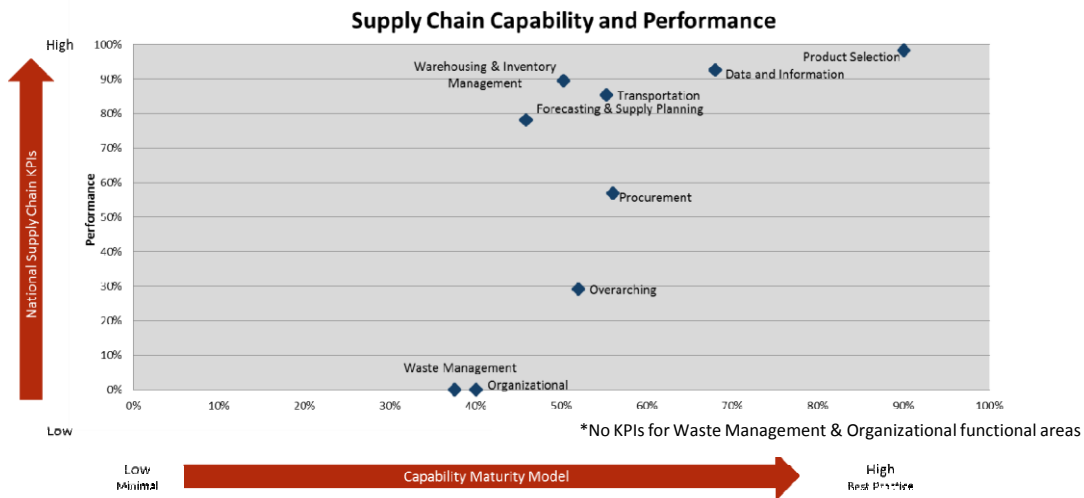
2. CMS should ensure that sound waste treatment processes are being followed at the landfill through a site visit to Kupferberg landfill.

4.1 Recommendations

The public health supply chain in Namibia has many strengths, evidenced by their strong performance across most functional areas and existence of key processes and systems in place. The assessment also revealed several opportunities for improvement to increase both the capability and performance of the supply chain.

Results of the assessment reveal the potential risk for declining performance as lower capability may begin to impact performance of key functional areas.

Figure 34: Capability and Performance Comparison



The MOHSS and CMS should consider using the results of this assessment to prioritize systems strengthening interventions to improve supply chain capability and mitigate risk of potential performance decline.

In the near term:

1. CMS should consider re-invigorating compliance to SOPS and processes. Due to human resources and space constraints, several important warehousing processes are not being routinely implemented including checking and expiry management. The CMS should also consider introducing a plan for regular review of the SOPs and training of new staff and monitoring the implementation of these procedures to mitigate the risk of non-compliance. Ensuring that procedures are followed reduces performance risks such as fulfilling orders inaccurately, increased volumes of expiry and higher rates of stock outs of pharmaceuticals and health commodities.
2. CMS should consider evaluating the cost effectiveness with their current outsourcing arrangement with Nampost to ensure they are receiving competitive pricing and high quality service. After determining either Nampost or another 3PL (through competitive bidding process), the CMS should ensure that a performance-based contract is in place and managed by the transportation unit to ensure continued best value service.

3. CMS should evaluate their procurement policies and procedures as this functional area presents the greatest potential risk of continued decline of capability and performance
 - a. CMS should consider using forecasts to develop supply plans, ensuring better medium-long term planning for procurements which can help ensure better prices on pharmaceuticals and commodities, allow for re-invigoration of long-term contracts with suppliers, and reduce the burden currently placed on the procurement unit due to buy-outs.
 - b. CMS should bolster their existing, somewhat ad hoc, supplier performance management program expanding the KPIs and the reach of the program through active communication with suppliers regarding both positive performance and required corrective actions. A robust supplier performance management program can improve supplier relationships, as well as allow the procurement unit to make evidence-based decisions to ensure competitive pricing and service from suppliers.
 - c. MoHSS should consider handling pharmaceutical procurement reform to increase supplier diversity within CMS in step-wise and gradual manner to minimize shocks on the existing system. As CMS had previously been running tenders for about 5 tender packages (item categories), restructuring can begin with one package that carries less risk and move on to the next item categories, applying lessons learned along the way. This will ensure that the balance between procurement executed via tenders and that done via buy-outs is at a level that does not burden the system or result in increased risk of stock outs.
4. CMS should consider analyzing the sufficiency of current staff levels and implementing performance-based incentives to reduce staff turnover.
5. CMS should implement a robust performance management system assessing its key functions of procurement, warehousing and transportation. Using the existing robust data available in Syspro, the CMS should regularly analyze its performance through both operational and strategic indicators to inform decision-making at the CMS. Monitoring performance will allow the CMS to track performance trends, understand potential upcoming risks and implement preventative actions to mitigate these risks. Better understanding of performance will allow the CMS to move from reactionary to high-performing by avoiding stock-outs and other performance issues in a more timely manner.

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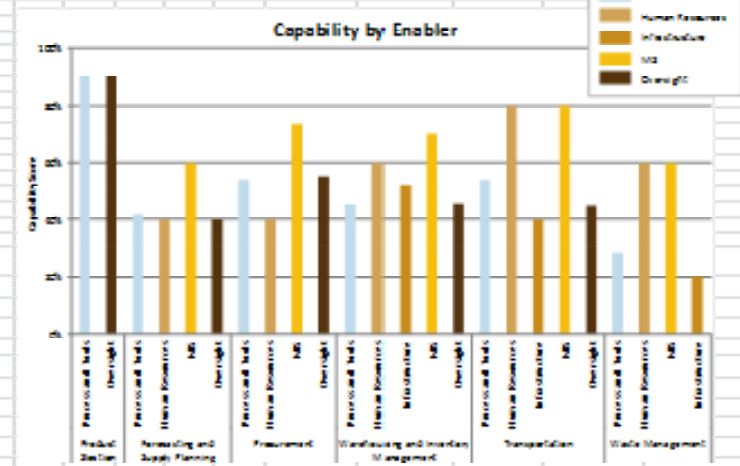
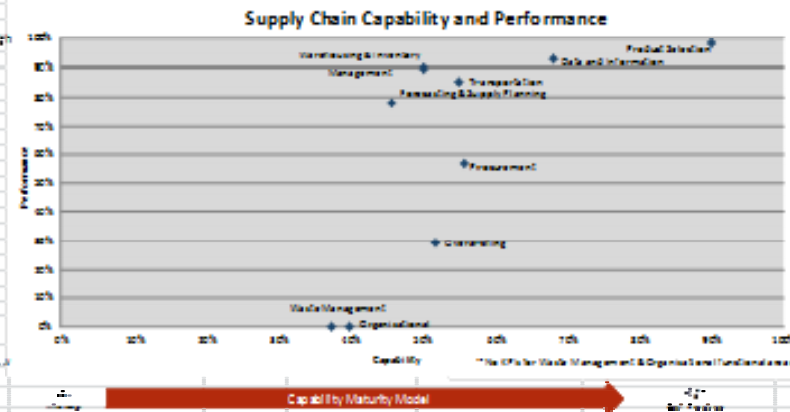
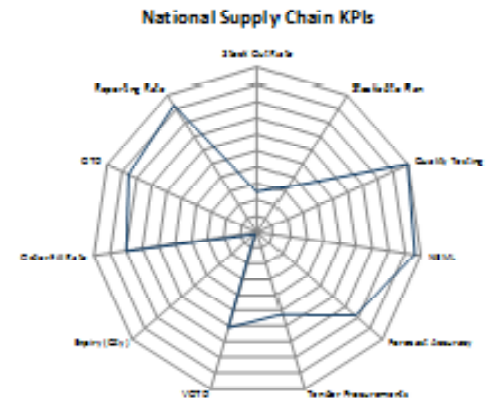
Appendix 1: Supply Chain Assessment Results

Figure 35: Namibia Supply Chain Assessment Dashboard



Namibia National Supply Chain Assessment Dashboard

National Supply Chain Overall Results			
Functional Area	CMM Score	KPI Score	
Customering		Shipped On Time	85%
		Shipped In Plan	85%
Production	8.0%	Quality Testing	100%
		Quality	98%
Forecasting and Supply Planning	4.0%	Forecast Accuracy	75%
Procurement	8.0%	Supplier Performance	85%
		OTD	80%
Warehousing & Inventory Management	8.0%	Brand OTD	100%
		Order Fill Rate	80%
Transportation	8.0%	OTD	85%
Data and Information		Forecasting Rate	85%
Risk Management	4.0%		
Organization	8.0%		



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Appendix 2: Workgroup Climate & Human Resources

Using an adaption of two separate tools, additional assessment of workgroup climate and human resources was conducted to analyze more qualitative aspects that impact capability and performance at the CMS.

Workgroup climate: Using an abbreviated, adaption of the MSH Workgroup Climate Assessment tool, the workgroup climate of the CMS was assessed. Workgroup climate “is the prevailing workplace atmosphere as experienced by employees. It is what it *feels* like to work together in a group.”² A series of statements were scored on a scale of 1-5 by each interview respondent, to garner an understanding of workgroup climate.

Scores in the 1-5 scale are defined as:

- 1 = Not at All
- 2 = To a Small Degree
- 3 = To a Moderate Degree
- 4 = To a Great Degree
- 5 = To a Very Great Degree

Figure 36: Workgroup Climate Scores

	Workgroup Climate Characteristic	Average Score
1.	Roles and responsibilities for each team member are defined and well understood	3.5
2.	We strive to achieve successful outcomes (based on activities/objectives of workgroup)	4.8
3.	We work well together	2.8
4.	We have open communication, including any issues that arise	2.8
5.	We have a plan which guides our activities	3.8
6.	Activities are monitored by the workgroup/section manager	3.7
7.	We understand how our work impacts our clients	5
8.	We take pride in our work	3

Overall, respondents had a positive outlook on the workgroup climate at the CMS with only two statements scoring below a 3 or agreement “to a moderate degree.” One challenge highlighted by respondents was that while there was open communication, issues raised were not addressed. Specific examples of human resources concerns that were reported but without result were raised.

Human Resources:

An adaptation of the Organizational Capacity Assessment Tool (OCAT) was used to qualitatively assess human resources at the CMS.

In addition to assessing the workgroup climate, a series of questions regarding human resources were asked to interview respondents.

1. *Staff Turnover:* Staff turnover at the CMS from April 2012-March 2013 was 22%, including 4 of the 5 pharmacy assistants. These high rates of staff turnover can have a significant impact

² Management Sciences for Health. 2005. Workgroup Climate Assessment. Management Sciences for Health; Boston, MA.

on capability and performance, evidenced by the attribution of poor process adherence to insufficient human resources.

2. *Job Descriptions*: All respondents indicated that they each had job descriptions which captured the main functions of their roles.
3. *Performance Evaluations*: All respondents indicated that after the quarterly reviews during the probationary period, performance reviews were not conducted. The CMS should consider instituting annual performance reviews for all employees.
4. *Staff Development*: Interviews revealed that there were no institutionalized mechanisms for staff development including training, on-the-job training or continuing education. The CMS should consider providing staff development opportunities as incentives to reduce high turnover rates.

Appendix 4: KPI Formulas

Figure 37: Capability and Performance Comparison

#	KPI	Formula
1	Stock Out Rates	$\frac{\text{Number of Tracer Commodities Experiencing a Stock Out in the Reporting Period}}{\text{Total Number of Tracer Commodities}} \times 100$
2	Stocked According to Plan	$\frac{\text{Number of Tracer Commodities Stocked According to Plan in the Reporting Period}}{\text{Total Number of Tracer Commodities}} \times 100$
3	Quality Testing Pass Rate	$\frac{\text{Number of Samples Passing Quality Testing}}{\text{Total Number of Samples Tested}} \times 100$
4	Procurement Adherence to NEML	$\frac{\text{Number of Products Procured on Nemlist}}{\text{Total Number of Products Procured}} \times 100$
5	% of Int'l Reference Price Paid	$\frac{\text{Average Unit Price Paid}}{\text{Average Int'l Reference Price for same commodity}} \times 100$
6	Forecast Accuracy	$1 - \frac{ \text{forecasted consumption} - \text{actual consumption} }{\text{actual consumption}} \times 100$
7	% of Orders Scheduled	$\frac{\text{Number of Scheduled Orders in the reporting period}}{\text{Total Number of Orders in the same reporting period}} \times 100$
8	VOTD	$\frac{\text{Number of orders delivered according to agreement with supplier}}{\text{Total number of orders}} \times 100$
9	Expiry	$\frac{\text{Total quantity of stock unusable due to expiry in the reporting period}}{\text{Opening stock balance in the same reporting period}} \times 100$
10	Order Fill Rate	$\frac{\text{Quantity of product issued by the CMS}}{\text{Quantity of product requested by clients}} \times 100$
11	OTD	$\frac{\text{Number of orders delivered within 7 days of the agreed date on the delivery schedule}}{\text{Total number of deliveries}} \times 100$
12	Facility Reporting Rates: On-Time	$\frac{\text{Number of facilities submitting reports on – time during the reporting period}}{\text{Total number of expected reports}} \times 100$
13	Facility Reporting Rates: Complete	$\frac{\text{Number of facilities submitting complete reports during the reporting period}}{\text{Total number of expected reports}} \times 100$

14	Requisition On-Time	$\frac{\text{Number of requisitions submitted within 3 days of agreed date on the delivery schedule}}{\text{Total number of requisitions}} \times 100$
15	Staff Turnover Rate	$\frac{\text{Number of staff leaving their posts in the reporting period}}{\text{Total number of staff}} \times 100$
16	% of Procurements as Tenders	$\frac{\text{Number of procurements placed as tenders}}{\text{Total number of procurements}} \times 100$