

Rational Pharmaceutical Management Plus Namibia CMS Systems, Performance Improvement: Trip Report

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About RPM Plus

The Rational Pharmaceutical Management Plus (RPM Plus) Program, funded by the U.S. Agency for International Development (cooperative agreement HRN-A-00-00-00016-00), works in more than 20 developing countries to provide technical assistance to strengthen drug and health commodity management systems. The program offers technical guidance and assists in strategy development and program implementation both in improving the availability of health commodities—pharmaceuticals, vaccines, supplies, and basic medical equipment—of assured quality for maternal and child health, HIV/AIDS, infectious diseases, and family planning and in promoting the appropriate use of health commodities in the public and private sectors.

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Abstract

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Acronyms

ART	Anti-Retroviral Treatment
CMS	Central Medical Store.
IT	Information Technology
MOHSS	Ministry of Health and Social Security
MSH	Management Sciences For Health
NB	
PMTCT	Prevention of Mother to Child Transmission
RMS	Regional Medical Stores
RPM Plus	Rational Pharmaceutical Management Plus Program
SOW	Scope of Work
USAID	United States Agency for International Development
WMS	Warehouse Management System

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Background

The attached report was based upon consultations completed in Namibia between 19 – 24th January 2004. The Consultant, Andy Marsden, was a member of a team lead by MSH' s Francis Nyame, also including MSH consultant, Vim Dias.

The assignment represents follow-up and completion of the consultant's initial one week visit conducted in December 2003. For detailed terms of reference, see Appendix A.

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Acknowledgements

The time and attention to consultations provided by the CMS Management team, led by Mr. G. Habimana, the Chief Pharmacist, together with that of his staff and the Warehouse personnel was - again - much appreciated. As previously, the assignment and associated consultations were conducted concurrent with routine, but nevertheless critical, CMS supply operations

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Executive Summary

The attached report arises from the Consultant's second visit to CMS Namibia, undertaken with the objective of progressing and developing the initial assessment and formulating a clearly-defined plan for incorporation into a broader RPM one year workplan

This objective was largely achieved, notwithstanding some of the commercial details necessary to complete the tasks are remain outstanding at the time of drafting.

In order to ensure the provision of consistent systems resource across CMS, as prelude to developing that resource, a full audit of hardware and software was undertaken and the necessary recommendations made to administer changes to existing equipment and for the procurement of replacement hardware and software items. This exercise was conducted in tandem with a needs review to identify incremental hardware requirements. A dual recommendation addressing this area is listed below.

At a strategic level, the decision was taken by the RPM and CMS stakeholders to roll-out Syspro, in its prevailing configuration, at the two RMS sites, where there is currently limited systems resources. A related decision addresses the feasibility of the provision of Syspro Warehouse Management Systems module at all three sites. The requisite information-gathering exercise (that closure on this matter be completed by the end of March 2004), has been initiated.

A key additional activity during the visit addressed process mapping the CMS supply chain operation and identifying both immediate and higher-level operational and resourcing issues. The workshop was attended by the RPM and CMS management steam, plus the operational and support staff from the CMS. Processes were collectively identified and understood and issues arising - as will impact on many of the RPM initiatives - agreed and documented.

Finally, a more detailed technical review of systems requirements arising from a revised reordering process was undertaken. At the time of drafting, the details of this initiative were still under review between RPM (V.Dias) and the CMS team. However, the groundwork below can be seen as a strategic investment for when agreement is reached on the process redesign.

Other ad hoc matters related to Syspro which were raised in the course of the visit are alluded to, below. Whilst the primary initiatives, in particular, the rollout of Syspro at the RMS sites, and the WMS initiative, have been recognized and identified, it must be noted that other matters arising from related RPM initiatives – such as those in the procurement, warehouse operations or finance areas, for example - will also become priority items as the project unfolds. Upon this point, the Consultant counsels a degree of flexibility from all the stakeholders.

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Findings

Syspro Supplier-Relationship

4.1.1 Communications

Since the preceding visit (December 2003), the consultant had tabled a number of queries to ImpactAfrica relating to their ongoing provision of support and the potential for a Warehouse Management System. ImpactAfrica responded with a list of their own queries and the consultant facilitated resolution and documentation of the CMS responses (See Appendix B).

4.1.2. Provision of Flowcentric Software Module

The implementation of Flowcentric, a procurement-related module of Syspro, will proceed, but with provision of the module supplier making a visit to CMS during w/c 26th Jan. 2004, as facilitated by the consultant; the purpose of the visit being to critically review the implementation plan. Though the consultant will himself be absent, this meeting will enable the other MSH team members to understand and contribute to a successful implementation at CMS. NB. It is understood, by the consultant, that the module will not facilitate the resource-heavy bid adjudication operation.

4.1.3. Provision of a Warehouse Management System at CMS & RMS's

The resolution of the issues relating to the provision of a warehouse management system were agreed as a priority between the CMS and RPM stakeholders. As a result, the consultant has facilitated the invitation of the Syspro suppliers, ImpactAfrica, to commission a pre-sales feasibility study at the three warehouse locations, with a view to their presenting the output of their work in mid-March. This as prelude to WMS decision-making. At the time of drafting, their response was outstanding.

Reordering Process

A new mechanism for identifying CMS products due for replenishment and related reorder quantities is, as proposed by consultant Dias. The data requirements as relate to Syspro plus other related data processing items – such as the relevant algorithms - are fully documented in Appendices D & G, below. These now require agreement and refinement in consultation with CMS.

Computer Hardware Audit

An audit of all the CMS PC hardware and, software was completed in the course of the visit (see Appendix C) for detail.

In summary, of the fifteen PC's in situ at CMS, four require new monitors, one requires complete replacement and a new printer also is needed.

Process Review

A complete supply chain process review and mapping exercise was conducted by the MSH team together with the key CMS personnel, the output of which is recorded in Appendix E. This was delivered with a view to achieving a common understanding of prevailing procedures and outstanding issues and areas requiring attention within CMS. An additional benefit derived from the mapping process was to draw the key CMS stakeholders into the project consultation process, with a view to establishing a two-way dialogue both for the immediate tasks in-hand, together with regard to the future.

Additional outputs were the identification of PC hardware shortages in CMS, together with the opportunity to identify their own training requirements.

Specific Recommendations

5.1 Syspro Supplier Relationship

- Progress provision of WMS pre-sales report as required, for completion by mid-March 2004. Associated decision-making, by CMS and RPM (ie "go" or "no go", to be completed by end of March 2004.
- Identify, in consultation with RPM and CMS stakeholders the requirement, or otherwise, for the provision of tender bid evaluation software at CMS (eg Orion or Eckpro), based upon understanding of Flowcentric software gleaned at CMS during w/c 26/1/04.

5.2 CMS PC Hardware (see Appendix C)

- MSH to fund immediate replacement of :
 - 4 x Monitors
 - 1 x CPU
 - 1 x Printer (A4/letter paper)
- MSH to fund immediate Procurement (based upon review of requirements with users) of :
 - 1 x CPU's, Monitor & Printer (receiving bay)
 - 2 x CPU's, Monitors & Printers (distribution)

- CMS to progress installation of the above, plus provision of consistent software in CMS & resolution of immediate technical problems as identified below, with their relevant support organization (NB, references below refer to systems identified in the Hardware Audit, Appendix C):
 - o Remove virus from (14).
 - o Ensure internet access at (2)
 - o Install MS Office at (1) & (7)
 - o Install of common Windows platform in CMS (version as agreed by CMS in consultation with by local support company, but in any case, recommended minimum – version 2000).

5.3 Development of Reorder Algorithm

- o Identification of all relevant data items to be completed for mid-March (V Dias to lead).
- o Provision of appropriate fields, algorithms and reports for the above on Syspro and/or Excel to be completed by finish of next visit (A. Marsden).

5.4 CMS Website

- o Agreed between stakeholders during visit, that no immediate provision required. To be revisited, as appropriate, later in the project cycle

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Activities Recommended for Inclusion in the RPM 2004 Workplan.

In addition to the specific recommendations requiring immediate attention, as listed above, the following items are presented, in pre-agreed format, for inclusion in the RPM 2004 workplan.

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Initiative	Background	Main Issues	Summary Plan	Main Elements	Outputs	Timelines	Resources Required (incl. personnel & sources)
1. CMS Hardware & Software Upgrade	Disparate PC models, various states of functionality @ CMS.	Defective/aged hardware needs replacing	Complete hardware audit (see above), identify needs. Procure.	Procure & install new monitors, CPU's and printer.	CMS equipped with minimal systems requirements.	Completion Quarter One, 2004	See recommendations above. CMS team to manage installations.
2. Additional CMS Hardware	Systems hardware shortfalls identified in dialogue with users.	A resource constraint to effective deployment of Syspro.	Needs identified and reviewed (see above). Procure.	Procure & install new monitors, CPU's and printer.	CMS fully resourced for Syspro development.	Completion Quarter One, 2004	See recommendations above. CMS team to manage installations.
3. Provision of Warehouse Management Systems @ 3 Namibia Sites	WMS module not currently deployed @ existing CMS, or proposed RMS sites.	Parallel manual & Syspro systems, poor stock rotation & no batch tracking.	Introduce WMS module @ CMS, incorporate into Syspro rollout @ RMS's.	Procure new module & implement @ 3 sites.	Functional Syspro WMS @ 3 CMS & RMS sites.	Completion, Quarter Three, 2004.	Quote ex-ImpactAfrica awaited. Additional 8 man-weeks RPM support recommended.
4. Syspro roll-out @ RMS sites	Currently no systems @ RMS sites. Prevailing CMS Syspro modules to be rolled out at RMS's.	Implementation @ (remote) regional RMS sites (with little prior technical experience) likely to be problematic	Replicate prevailing Syspro CMS configurations @ RMS's. Ensure data synchronization between systems	Two RMS site rollouts	Timely, accurate Syspro data from two RMS sites, effectively aggregated with CMS data.	Completion, Quarter Three, 2004	Quote ex-ImpactAfrica awaited. Additional 4 man-weeks RPM support recommended.
5. Support revised for Inventory Control procedures.	Prevailing CMS replenishment/reordering methodologies require refinement.	Small orders, overstocking, reduced availability.	Define new processes and procedures. Ensure provision of timely, accurate data to support.	Incorporation of design features into Syspro, as identified below.	Improved availability, reduced inventory, reduced inputs to achieve.	Start immediately, Completion, Quarter Two, 2004	\$20,000 customization plus three man-weeks RPM systems support recommended.

6. Provision of Internet @ CMS & RMS sites	No current internet connection at RMS's, limited at CMS.	Web-based support and comms. problematic	Namibian ISP's to quote, selected supplier to implement.	Up to three provider agreements in situ.	Internet available and usable at all CMS and RMS sites.	Quarter Two, 2004	Quote ex-IPS suppliers outstanding.
7. Ad-hoc Syspro development	As required to address process re-engineering requirements, including warehouse operations and procurement.	Ad hoc requirements will require addressing consistent with various re-engineering initiatives.	Consultant to respond to identified needs, on ad hoc basis.	Reports, liaison with stakeholders, design, custom software	Appropriate TA inputs & Syspro software.	As identified over entire 12 months	Estimate, \$10,000 budget for system suppliers. Four man-weeks RPM.
8. Hardware support agreements @ 3 sites	"Time and materials" agreements currently deployed with various suppliers.	Prevailing arrangement either not cost – effective (CMS) or non-existent.	Incoming IT expert to identify needs and conclude selection and agreement with local supplier (s)	Consistent hardware availability at all sites for intended purpose (s).	Support agreements "in situ".	To be concluded, Quarter Two, 2004.	To be finalized by RPM expert. Suggested budget, \$3500 p.a. x three sites.
9. Syspro software support @ 3 sites	ImpactAfrica partnered under "time and materials" agreement	Prevailing arrangement either not cost – effective	Consultant to progress commercial options, IT expert to close agreement.	Consistent software availability at all sites for intended purpose (s).	Support agreements "in situ".	To be concluded, Quarter Two, 2004.	Quote ex-Impact Africa awaited.
10. Provision of IT training & capacity building	Extensive Syspro & Internet user training required @ all three. Limited computer-literacy at RMS sites currently.	Past training has been of limited efficacy. New users require comprehensive training.	Incoming expert to detail needs and modalities of training delivery.	Delivery of Syspro training and training of trainers.	Local Syspro capacity development.	Major activity in Quarters One and Two, but spread over entire year.	ImpactAfrica and local RPM experts to deliver training. Estimated 10 man weeks.

Appendix A: System Analysis and Review of Computerized Inventory Control System of Namibia Central Medical Stores

Draft Scope of Work

Background:

As part of its assistance to the MoHSS of Namibia, the USAID Namibia Mission requested RPM Plus to conduct an assessment of the commodity management system and recommend activities that will help strengthen the system in the face of increased commodity management challenges envisaged under the scaling up of PMTCT and ART programs.

During the RPM Plus pre-assessment visit in August 2003, it was determined that CMS has in place a computerized inventory control system, SYSPRO™, that was installed in 1998 by a South African firm. The software has been recently upgraded to SYSPRO™ 6.0, and may meet the needs of the CMS, however, staff are not adequately trained to use the system and the computer hardware is inadequate. There is no dedicated IT professional capable of trouble shooting and fixing minor problems related to the system and training of staff. Maintenance of the system is therefore problematic, leading to the CMS flying in support personnel from South Africa to fix basic problems at high cost. The system was also found to be implemented only at the CMS without any linkages to the various regional depots, thus making forecasting, communication and information flow inefficient.

Aim/Goal:

To undertake a comprehensive system audit in order to determine whether the existing system meets the needs of the Namibia medical supply system in the face of the scale up of PMTCT and ART programs and to make recommendations for upgrading and/or replacement of the system that is capable of managing forecasting, inventory control, distribution, financial control and information management and that will link the national office to regional level/peripheral units.

Specifically the proposed assessment objectives will include but not necessarily limited to:

1. Assessing and determining the magnitude of the problems identified with the existing CMS computer system, particularly relating to the lack of adequate support, training, and integration with regional and peripheral sites
2. Conducting System Analysis of the IT requirements of the CMS and regional level units to determine whether the prevailing system is capable

- of supporting the operations of CMS and pharmaceutical management in general
3. Describing the various alternatives/options that may be available for strengthening the computerized system for CMS and regional level units
 4. Describing the functionality of the existing system and its ability to meet the requirements of the newly proposed CMS IT requirements
 5. Making recommendations of changes required to implement new and/or upgraded system
 6. Proposing suitable software and hardware requirements for an improved pharmaceutical management, taking into consideration local capacity to provide the needed technical support for the proposed system
 7. Describing a possible plan of action for implementing an upgraded or new computer system
 8. Suggesting an estimated budget, if possible, for an upgrade or new computerized system capable of linking the national unit to regional level units.
 9. Determining the number of staff necessary, the technical skills required and their SOW to support the proposed system

Level of Effort:

It is proposed that about a 20 day level of effort will be needed for the assessment.

Expected Outputs:

Report incorporating –

- Comprehensive system audit to determine its strength and weaknesses.
- Detailed description of the IT requirements of CMS and regional level units with specifications of required software and hardware
- Recommendation of appropriate software system and changes required to implement
- Implementation plan with time lines and responsibilities
- SOW for staff required
- Budget

Appendix B: Impact Africa Response

“The purpose of this questionnaire is to clarify the Namibian Central Medical Store’s (CMS) requirements as they relate to on-going support for the existing installation and to the two new potential sites for the Regional Medical Stores (RMS).

Once there is sufficient clarification of the various points we will provide CMS with appropriate costed options / proposals and explanations so that choices can be deliberated and made.

Please excuse the length and detail, and any repetition, but your answers will help us considerably to help you in the most constructive way.

Please send your replies back to Mandy Vn De Walt of Impact Africa at mandyv@impactafrica.co.za.”

REF	QUERY	RESPONSE
1	Hot Line / On-Line Support	
1.1	<p>We will be providing exact details of the hot line support service. This service is normally provided over the telephone which would work out very expensive for CMS due to the cost of calls. We therefore believe that it would be beneficial for CMS to have on-line support via the web (internet) where our support centre can access and perform tasks on CMS’ system. To achieve this will involve more cost at the outset but should save significant costs later as it will reduce telephone call charges and the number of on site visits required by our consultants.</p> <p>1) Can you please confirm that we should quote you for web based on-line support.</p>	<p>Please provide information upon both support types. However we envisage web-based support to be our likely development path.</p>
	<p>If we are to support CMS on-line via the web we will need good response times and consistent up time.</p>	<p>Yes, there are indeed currently difficulties and we are investigating with local ISP’s with a view to improving the response.</p>

	<p>Our understanding is that access to the web from CMS can be difficult at times.</p> <ol style="list-style-type: none"> 1) Can you please confirm that this is the case? 2) As far as you are aware, is there anything that can be done to improve access to the web? E.G. Can you access the web independently of the central system? 	
1.2	<p>If you take the on-line support service, would you:</p> <ol style="list-style-type: none"> 1) Like it to apply to Syspro only? 2) Like to include technical support and/or maintenance for the CMS server? 3) Like to include technical support and/or maintenance for the RMS servers? 4) Like to include support for specific workstations (CMS and RMS)? 	<p>Yes</p> <p>No</p> <p>No</p> <p>No</p>
1.3	<p>A further extension to the on-line support offering would be for us to assist you with month ends each month. We could do as little as review the status each month or actually run the entire month end for you remotely. We could also supply additional software to automate various processes. Can you please tell us:</p> <ol style="list-style-type: none"> 1) Would you like us to quote you for the software to automate day end processes? 2) Would you prefer a limited or full month end service, or none? 	<p>No current requirement. We will, however, be seeking to develop capacity of newly-appointed staff to manage such operations unassisted.</p>
2	The RMS systems	

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2.1	<p>We understand that each RMS will have its own server and be run separately to the CMS by its own admin person or team.</p> <ol style="list-style-type: none"> 1) Is this correct? 2) If not, please describe what is planned. 	<p>Yes</p>
	<p>We understand that 5 users must be catered for in each RMS and there will be two RMS's in this instance:</p> <ol style="list-style-type: none"> 1) Please confirm 2 RMS sites 2) Where will the RMS's be located? 3) Please confirm 5 users each 	<p>Yes Rundu & Oshakati</p> <p>Yes</p>
	<p>We need to know if there is any existing hardware at the planned RMS'.</p> <ol style="list-style-type: none"> 1) Are there any existing servers at either site? 2) Are there any PCs at either site? 	<p>No</p> <p>Not as relate to Syspro requirements</p>
2.3	<p>If you have reliable telecom links between the CMS and the RMS's it is possible to run the RMS's on-line to the central system. However, if telecom links are unreliable and/or expensive it will be better for each RMS to have its own server.</p> <p>Do you have a preference for one particular approach over the other?</p> <ol style="list-style-type: none"> 1) Please give us some idea of the quality of the telecom links between the CMS & the 2 RMS's 2) Will RMS's have access to the internet? 	<p>It is anticipated that each site will have its own server.</p> <p>Yes</p>
	<p>Can you please tell us which functions will be carried out on the RMS system:</p>	

	<ol style="list-style-type: none"> 1) Accounts receivable 2) Accounts payable 3) Cash book 4) General ledger 5) Assets register 6) Inventory 7) Purchase orders 8) Landed cost tracking 9) Sales orders 10) Sales analysis 11) Lot traceability 12) Tenders 13) Anything else? 	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>WMS Report Writer (if required separately of CMS)</p>
2.4	<p>Whichever way the hardware is set up, what is the proposed business / processing relationship between the CMS and the RMS's? Please state whether any of the following apply, and qualify with comments as necessary.</p> <ol style="list-style-type: none"> 1) CMS will sell product to the RMS and the RMS will be a debtor 2) CMS will transfer product to the RMS and the RMS will be a warehouse of CMS 3) CMS will be aware of demand for product to be supplied from the RMS, and will use a forecast to calculate what products need to be shipped to the RMS 4) The RMS will order product from the CMS 5) CMS will need to view stock on hand at the RMS 6) Please describe any other key requirements. 	<p>Yes</p> <p>NO</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>
2.6	Assuming you have a separate server for each RMS, do you plan to run anything other than	Internet, email, MS Office

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	Syspro on the system, and if so, what: 1) Please list any other programs you plan to run on the RMS systems e.g. mail, fax, internet access, etc	
3	Current CMS server	
3.1	<p>Can you please tell us the following details about the upgraded server:</p> <p>1) What is the specification of the machine:</p> <p>2)</p> <ul style="list-style-type: none"> • Processor type & speed • Memory (RAM) • Hard drive capacity • Back up system • Operating system <p>3) Please will you tell us the name & contact details of your local hardware suppliers and supporters?</p> <p>4) Have they been able to solve all the problems that have arisen?</p> <p>5) Are there any areas where their technical skills have not been sufficient?</p>	<p>Dell "PowerEdge" 2600 System</p> <p>2 x Intel Xeon, min. operating frequency 1.8 GHz</p> <p>256 MB min.– 6 Gb max.</p> <p>6 x 1 inch internal ultra 320 SCSI</p> <p>UPS</p> <p>Windows 2000</p> <p>Schoemans Office Systems (+264-61-238320) Progressive Systems (+264-61-250959)</p> <p>N/A</p> <p>N/A</p>
4	Future development of the CMS Syspro system	
4.1	We have mentioned that Syspro has a new facility called "e.net" which works with "XML" files or data. The e.net facility is provided to allow organizations	No current requirement

	<p>to create their own custom software and integrate it successfully with Syspro or to import or export data from foreign systems. The e.net facility provides for updating into Syspro using XML files which means that the formats of incoming data merely have to follow certain identification rules rather than a rigid field format and size.</p> <p>Also note that there are other limited methods of creating XML output.</p> <p>1) Do you think you might need this facility? 2) If so, please describe what you believe you need to provide.</p>	
4.2	<p>The standard Syspro 6 offering caters for multiple warehouses. The warehouse management system (WMS) which we mentioned is a third party product which provides specialized control and optimization of your inventory. Can you give us some idea of whether WMS will be needed in the next 12 months?</p> <p>1) Will you need to consolidate several warehouses into one? 2) Will you be forecasting demand for each or all warehouses? 3) Can you give us an idea of the value of your CMS inventory holdings now? 4) And the value of CMS inventory turnover per month? 5) What will be the value of each RMS inventory</p>	<p>No</p> <p>All</p> <p>c.N\$ 50 Million</p> <p>c. N\$ 10 Million</p> <p>c. N\$ 15 Million, Oshakati, c. N\$5 Million, Rundu</p> <p>c. N\$5 Million. Oshakati, c. N\$ 1</p>

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	holding? 6) And the value of RMS inventory turnover per month?	Million, Rundu
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Appendix C: CMS Hardware Audit

Terminal Number	Location	User (s)	Usage	PC Specification	Network Y/N	Printer Specification	PC location security	Windows Version	Other Information
1	Warehouse Area	Data Typist	Syspro - orders - picking slips	Intel Celeron AT	Y	N	Closed office	2000	No MS Office. Replacement monitor & new printer recommended.
2	Office Area	Temporary Accounts Officer	Syspro - accounts Word Excel	486 AT/DX	Y	Connected to adjoining office printer.	Closed office	NT	No internet access
3	Office Area	Procurement Pharmacist	Syspro - procurement - supplier receipts Word Excel Internet Email Foxpro	Mercer Pentium 4	Y	HP LJ 1005	Closed office	XP	
4	Office Area	Chief Clerk, Procurement	Syspro - procurement Foxpro Word Excel Email Internet	Intel Pentium AT	Y	HP LJ 1000	Closed office	2000	
5	Warehouse Area	Chief Clerk, Distribution Planning & 4 clerks (pharmaceutical)	Syspro - w/h receipts - inventory control Word Excel Internet Email	Intel Celeron AT	Y	N/A	Closed office	2000	

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6	Warehouse Area, Despatch Office	Record Clerk & Pharmacist Assistant	Syspro - invoices - picking slips Word Excel Internet Email	Intel Pentium AT	Y	SEIKO Precision BP 9000	Open office	2000	New monitor recommended.
7	Warehouse Area, Despatch Office	2 x Pharmacy Assistants (including user 6, above)	Syspro - invoices - picking slips	Intel Celeron AT	Y	Connected to printer (6), above.	Open office	2000	No MS Office functionality
8	Office Area	Procurement Clerk & other procurment staff, as required.	Syspro - procurement Foxpro Email Internet Excel	Vision PC, Pentium	Y	SEIKO Precision MP 400	Closed office	98	Printer access is pre-requisite to printing orders.
9	Office Area	Chief Pharmacist	Syspro (all) Foxpro Excel Email Internet Word	Mercer Intel Pentium	Y	HP LJ 1005	Closed office	XP	
10	Warehouse Area	Distribution Pharmacist	Syspro - w/h ops Email Internet Excel Word	Mercer Pentium 4	Y	HP LJ 1000	Closed office	2000	No incumbent manager
11	Warehouse Area, Receiving	2 x Receiving Clerk 1 x Pharmacy Assistant	Syspro - supplier receipts	Intel 486, AT	Y	SEIKO Precision HP 400.	Open office	NT	Access difficulties (ie 3 users). Monitor replacement recommended
12	Warehouse Area	Chief Clerk, Distribution	Syspro - w/h receipts	Unknown provenance	Not known	None	Closed office	Not known	Currently non-functional.

		(non-pharmaceutical) 3 x clerks	Word Excel	(but a very old model !)					Entire system replacement recommended & new printer procured.
13	Office Area	Chief Clerk, Admin & Transport	Excel Word Email Internet	XYLO Intel 486 AT	Y	HP LJ 1200	Closed office	2000	No Syspro
14	Office Area	Acting Senior Accountant	Syspro - accounts Internet Word Excel	Fujitsu 486 AT	Y	HP LJ 1100	Closed office	2000	PC has virus. Also office phone tracking system located here.
15	Reception	Receptionist	Syspro - picking slips (when required) Word Email Internet	Fujitsu Siemens	Y	Lexmark Z33	Reception booth	ME	

Appendix D: Reordering Variables Listing

Ref.	Field Title	Description	Unit of Measure	Comments
A	Product Code	Freeform field	N/A	Taken from master file
B	Product Description	Freeform field	N/A	Taken from master file
C	Maximum Stock Level (1)	System generated	No. of base-level units	Formula TBA (1)
D	Maximum Stock Level (2)	Default from (C).	No. of base-level units	May be overridden
E	Comments	Freeform field	N/A	To be completed if (D) overridden.
F	Minimum Reorder Level (1)	System generated	No. of base-level units	Formula TBA (2)
G	Minimum Reorder Level (2)	Default from (F).	No. of base-level units	May be overridden.
H	Comments	Freeform field	N/A	To be completed if (G) overridden.
J	Review Period	Manually generated & input	Month (s)	Calculated to 1 decimal.
K	Stock-on-Hand	System generated	No. of base-level units	
L	Stock-on-Order	System generated	No. of base-level units	
M	Lead Time	Manually generated & input	Month (s)	Calculated to 1 decimal.
N	VEN classification	Manually generated & input	N/A	
P	ABC Category	Manually generated & input	N/A	
Q	Level of Use	Manually generated & input	N/A	
R	Buffer Stock	Manually generated & input	Month (s)	Calculated to 1 decimal.
S	Procurement Period	Manually generated & input	Month (s)	Calculated to 1 decimal.
T	Estimated Monthly Consumption	System generated	No. of base-level units	Formula TBA (3)
U	Adjustment	Manually generated and input	%	Applied to computed order quantity. % may be +ve or -ve.

V	System-Suggested Order Quantity	System generated	No. of base-level units	Formula TBA (4)
W	Actual Order Quantity	Default from (V)	No. of base-level units	May be overridden
X	Comments	Freeform field	N/A	To be completed if (W) overridden.

Appendix E: Notes on Workshop to Review and Identify Namibia CMS Processes & Issues

Date: 21st January 2004.

Attendees:

Andy Marsden - MSH – Europe (facilitator & recorder)
Vim Dias - MSH
Francis Nyame - MSH
G. Habimana - CMS (Chief Pharmacist)
Harriet Lema - CMS (Procurement Pharmacist)
All CMS Chief Clerks
All CMS Pharmacy Assistants

Product/ Storage Categorizations

Three broad Product Categorizations used at CMS :

- X-Ray
- Pharmaceuticals
- Clinical Supplies

Nine Warehouse Sections at CMS :

- 1) Reagents & Powders
- 2) Tablets & Suppositories
- 3) Powders, syrups, ointments creams, eye preparation, inhalers
- 4) X-rays, syringes, tablets, instruments, condoms, ostomy products
- 5) Sutures, tubes, airways, catheters
- 6) Sterilization, gloves, bandages & dressings, orthopaedic support, miscellaneous
- 7) Cold Store including tablets, injectables, syrups, vaccines
- 8) Narcotics including (i) tablets, suspensions, injections
(ii) ARV's
- 9) Schedule 5

1. Contract Quantification

Process

- Recommended contract quantities produced by Procurement Pharmacist (based on 2 years historical data ex Syspro™, plus an adjustment)
- Submitted to Chief Pharmacist for approval
- Thereafter submitted for consideration by Tender Committee who review and finalize (estimated) quantities

Issues for Attention

- Out-of-stock days not incorporated into Syspro™ consumption data as used in preparing estimates
- Three years+ historical data now available on Syspro™ but not utilized in process

2 Tender Cycle

Process

- Tender notice issued by Secretariat (Chief Pharmacist & Procurement Pharmacist)
- Responses submitted to CMS and formally opened there before Tender Committee
- Responses keyed in and analysed by Chief Pharmacist & Procurement Pharmacist using bespoke Foxpro software (process taking approx. 3 people x 2 months)
- Evaluation report prepared for submission to Tender Committee

Issues for Attention

- Time and resource required to produce data to evaluate responses (eg 3 x 2 months)
- Foxpro evaluation software is a dated offering. Initiator no longer on CMS staff – maintenance and updating problematic.

3. Supplier Selection

Process

- Tender committee - Ministry of Health & Ministry of Finance representatives, invited experts (as required) & Chief Pharmacist (Secretary), meet to adjudicate supplier selection, as required (typically each two years per product category) based on evaluation report.
- Contracts finalized by Secretariat with further meetings & negotiations, as required
- Contract preparation and sign-off (by Permanent Secretary)
- Contractual data relating to supplier, prices, time period & lead times keyed into Syspro™ by Procurement staff.

Issues for Attention

- Lengthy adjudication process (typically 4 days of 9+ personnel of Tender Committee)

- Time required to key in contractual data to Syspro™ (eg 2 persons x 3 weeks+) partly due to multi-screen data entry

4. Raising Purchase Orders

Process

- Bespoke Syspro replenishment report reviewed (weekly) by Procurement Pharmacist
- Estimated consumption data (ECD) system-generated by Syspro™ according to historical monthly consumption data
- Reorder level = 3 months ECD plus lead time
- Max. stock level = 6 months ECD
- Date exported from Syspro™ to Excel spreadsheet
- Prices keyed into Excel spreadsheet
- Requisition produced in Excel by Procurement Pharmacist, signed off by Distribution & Chief Pharmacists
- Purchase Order generated on Syspro™ by Procurement staff
- Purchase Orders signed off by Procurement Pharmacist & Chief Pharmacist (according to thresholds)
- Four-part Purchase Order produced
- One part Purchase Orders collected by local suppliers & faxed to international suppliers
- Three parts of Purchase Order to warehouse receiving bay
- Provision for initiating emergency Purchase Orders via solicitation of quotes and (CMS) contractor selection

Issues for Attention

- Replenishment report data inaccurate
- Syspro™ quantity-on-hand data suspect
- Prices in Syspro™ cannot be exported to Excel
- Demand data may be more accurate than consumption data (to be confirmed)
- System-generated order quantities require manual intervention due to data known inaccuracies
- Single line, single product purchase orders only generated in Syspro

5 Receiving

Process

- Visual check and count of incoming deliveries completed by Procurement staff

- Data captured – Quantity, Batch Numbers, Expiry dates, Supplier's Invoice Number
- Data keyed into Syspro™ and Good Received Note produced
- GRN plus all purchase order and delivery documentation collated and matched with incoming delivery in preparation for checking & putaway

Issues for Attention

- Insufficient time to check all batches on incoming deliveries
- Insufficient space in Syspro™ to enter multi-supplier invoices or multi-batches against deliveries
- Fragmented operational responsibilities between Warehouse and Procurement
- Dual receiving procedures between pharmaceuticals and other products
- Only one GRN per batch permitted by Syspro™
- Each item on reorder list currently requires a separate Purchase Order from Syspro™ (and associated processing)

4. Putaway

Process

- Location of goods into an inspection area (ie receiving bay) completed by Warehouse staff against documentation including GRN, Purchase Order (from Syspro™), suppliers' delivery notes & suppliers' invoices.
- After checking deliveries, on receiving bay, items booked onto Syspro™ warehouse by Clerks (and thereafter inventory becomes visible and available on Syspro)
- Location of stock into warehouse on Syspro™ triggers supplier payment
- Warehouse manual stock records updated

Issues for Attention

- Lost hardcopy delivery documentation in warehouses
- Delayed return of delivery documentation from warehouse to receiving
- Lack of consistency and data integrity between stock records, physical counts and Syspro™
- Lack of perpetual inventory procedures to ensure data integrity
- Lack of consistent procedure by various warehouses in recording and putaway of stock

6. Customer Order Generation

Process

- Routine orders submitted in original hardcopy via (Green) Order Book to CMS receptionist
- Emergency Orders submitted via fax to CMS on special CMS documentation
- All orders checked and validated by Distribution Pharmacist
- Orders input to Syspro™ via Data Typist
- 2-part picking lists produced by Data Typist
- Picking Lists checked against original orders by Pharmacist Assistants
- Manual corrections/additions made to picking lists by PA's, & Chief Clerks, as required

Issues for Attention

- Lost/delayed return of Green books to customers
- Dual processes for routine and emergency orders
- Excessive numbers of emergency orders

7. Picking

Process

- Checked/amended picklists issued to Clerks according to respective (9) warehouse areas
- Pick adjustments marked onto pick list, as necessary
- Actual pick quantities checked by Pharmacy Assistants & Chief Clerks.
- Confirmed picklists submitted to Record Clerk
- Confirmed pick details keyed into Syspro™ by Record Clerk (which downdates warehouse stock)
- Customer invoices generated against actual picked quantities

Issues for Attention

- Checking operation completed prior to packing and order assembly operations (ie limited validity)
- Resource difficulties associated with checking multi-parts of order in different parts of warehouse
- No assembly area in warehouse to aggregate different elements of orders (which are picked independently of each other)
- Batch numbers on picking lists not followed (ie all batch data on stored items as held on Syspro™ must be considered suspect, with associated stock rotation issues)

8. Despatch

Process

- Items packed into boxes in respective warehouses
- Box details recoded manually on CMS document (“log book”), by picker
- Manual delivery note raised (with additional data not held on Syspro™ eg number of boxes, delivery vehicle etc)
- Shipment made with invoice, copy of picking list & delivery note

Issues for Attention

- Potential for inaccurate shipped quantities due to “shrinkage’ during order assembly process

9. a) Returns (to CMS) from Customers

Process

- Returned to CMS by customers’ vehicles
- Procedure for deploying CMS returns documentation available
- Returns booked back onto Syspro

Issues for Attention

- Lack of appropriate CMS returns paperwork accompanying delivery
- Lack of prior warning of returns to CMS
- Expectation of CMS to oversee pending expiry product redistribution
- Lack of adherence to (re) booking-in procedures

9 b) Returns (from CMS) to Suppliers

Process

- Manually-raised, Goods Return Note used to return supplies, arising from supplier error
- Returns arising from defective quality and/or or over-delivery not booked onto Syspro™ or located in warehouse
- Suppliers informed to uplift returns

Issues for Attention

- Direct (and unchecked) delivery of consignments from manufacturers (rather than suppliers) leading to issues eg over-delivery, excess number of batches etc
- Repeated instances of over-delivery from (some) suppliers

10. Supplier Monitoring

Process

- Monitoring of delivery quantities & visual quality currently undertaken on receiving bay
- All new products & suppliers QC tested first time
- Planned and actual delivery times recorded

Issues for Attention

- Notwithstanding above, limited supplier performance monitoring currently
- Over and under-delivery by some suppliers prevalent
- No routine performance feedback mechanism with suppliers
- Performance monitoring not incorporated into tender evaluation/contract award process
- Supplier communications & responsiveness not measured
- (Excess) multi-batches in single deliveries from some suppliers

11. Additional Items Considered

- Training needs – discussion output recorded else where (FN)

12. Incremental Computer Hardware Needs

- Discussion output recorded elsewhere (AM, recommendations above)

AM. 22 Jan 2004

Appendix F: Draft Scope of Work

Proposed Activities:

- Present, review and defend proposed systems elements of the RPM workplan to USAID & other stakeholders
- Progress dealings with ImpactAfrica, as required
- Facilitate and lead resolution of the provision of the WMS modules at CMS and RMS's.
- Progress provision of timely and accurate data from Syspro, as required to address revised inventory control systems need
- Produce and agree schedule of systems activities for Quarter Two, 2004
- Produce and agree workplan for incoming (RPM) IT specialist at CMS
- Other ad hoc systems-related activities, as determined by needs and events

Proposed Next Visit : To be conducted during weeks two and three, March 2004.

Appendix G: Reordering Algorithms & Master File Requirements

Points for Discussion - 1.23.04

1. Product Master file.

It would be important to include the following additional fields in the Syspro Product Master File.

- a. Issue Units. eg. Tabs, caps, pack of 12 etc.
- b. Strength / Size of drug or medical supplies.
- c. Dosage Form, such as tablets, capsules, suppositories, creams & lotions etc.
(T/C/S/C/L)
- d. Product category, Pharmaceuticals, Clinical Supplies, X-ray and Other Products. (P/C/X/O)
- e. Secondary Product Category : eg. ARVs, PMTC, TB & Malaria etc.
- f. Standard Pack Size expressed in Issue Units.
- g. Classifications: 3 digits.

First Field either an A, B or a C for ABC Value Analysis

Second Field either a V, E or a N for VEN Analysis

Third Field either a 1, 2, 3, 4 & 5 to denote the Level of Use.

2. Formulae for CMS Syspro calculations.

- a. Ref. C. = $MAXSL\ 1 = T \times U (M + S + R)$
- b. Ref. F. = Minimum Re-order Level = $T \times U (M + J + R)$

J could be fixed at 2 months for CMS and 1.5 months for the 2 RMS.
- c. Ref. T. This value would be generated by Syspro using historical data on what has been issued out of CMS in the past. We have 2 options for generating this information as outlines below.
- i. Syspro will ask the operator to enter the following information.

Product Code.

Start Date ie. From (mm/dd/yy) – To (mm/dd/yy), to specify a specific period of issue.

Syspro should access the transaction file, sum all issues for the product less returns if any for the specified period.

Estimated monthly
consumption = T =
$$\frac{\text{Total number of issues made} \times 30}{\text{(Number of days in selected period - \# of days item out of stock)}}$$

ii. Or, Syspro should ask the operator to enter the following information.

Product Code.

Ask the operator to specify the complete number of months to be considered in working out a value for the Estimated Monthly Consumption. For eg. a number such as 12 will make Syspro to analyze data going back to 12 months.

Syspro should access the transaction file, sum all issues for the product less returns if any, for the specified period.

Estimated monthly
consumption = T =
$$\frac{\text{Total number of issues made} \times 30}{\text{(Number of days in selected period - \# of days item out of stock)}}$$

It is suggested that the value appearing on the screen for T ie. Estimated Monthly Consumption should be = U x V and be calculated using any one of the methods outlined above. Forecasting drug needs should be a separate activity performed periodically or as when needed for a specific product, using a different Forecasting Menu.

d. Ref. V. = System Suggested Order Quantity = (D-K-L) when (K + L) <= G.

3. Other Master Files

In addition to the Product Master file, does Syspro have other files such as a Facility Master File and a Supplier Master File? If so, it would be useful to get a

print out of fields contained in each of these files in order to see what other information should be included.

An analysis of the Supplier Master file would be important for strengthening CMS Procurement operations.

A. Suggested additions to the Current Syspro Supplier Master File

- Type: Distributor, Manufacturer & other
- Key Products: Key products offered
- Inception: Year
- Pre-qualified: Yes /no
- Last GMP Audit: mm/yy
- Performance Rating: ABC
- Purchases YTD: N\$
- Purchases Last Year: N\$

B. Suggested additions to the Current Syspro Customer Master File

- Type:
- # of Beds:
- Province / Zone:
- District:
- Distance from Windhoek: kms
- Mark Up: %
- Delivery Route:
- Accessibility:
- Budget: N\$
- % of Budget Used YTD: %

C. Suggested additions to the Current Syspro Product Master File

- Issue Units. eg. Tabs, caps, pack of 12 etc. [AM note: quantitative value]
- Strength / Size of drug or medical supplies. [AM note: qualitative value, from pulldown]
- Dosage Form, such as tablets, capsules, suppositories, creams & lotions etc.
(T/C/S/C/L) [AM note: qualitative value, from pulldown]
- Product category, Pharmaceuticals, Clinical Supplies, X-ray and Other Products. (P/C/X/O) [AM note: qualitative value, from pulldown]
- Secondary Product Category: eg. ARVs, PMTC, TB & Malaria etc. [AM note : freeform id]

- Standard Pack Size expressed in Issue Units. [AM note: quantitative value]
- Current Supplier: [AM note: qualitative value, from pulldown]
- Classifications: 3 digits.

First Field either an A, B or a C for ABC Value Analysis

Second Field either a V, E or a N for VEN Analysis

Third Field either a 1, 2, 3, 4 & 5 to denote the Level of Use.

