# Implementing a Dashboard for Pharmaceutical Information in Namibia

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# Implementing a Dashboard for Pharmaceutical Information in Namibia

Bayobuya Phulu
Harriet Rachel Kagoya
Greatjoy Mazibuko
Samson Mwinga
Evans Sagwa
David Mabirizi

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## About SIAPS

The goal of the Systems for Improved Access to Pharmaceuticals and Services (SIAPS) Program is to ensure the availability of quality pharmaceutical products and effective pharmaceutical services to achieve desired health outcomes. Toward this end, the SIAPS result areas include improving governance, building capacity for pharmaceutical management and services, addressing information needed for decision-making in the pharmaceutical sector, strengthening financing strategies and mechanisms to improve access to medicines, and increasing quality pharmaceutical services.

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## Key Words

Antiretroviral therapy (ART), dashboard, Facility Electronic Stock card (FESC), Electronic Dispensing Tool (EDT), HIV, Syspro, Pharmacy Management Information System (PMIS), Logistics Management Information System (LMIS), Namibia

Systems for Improved Access to Pharmaceuticals and Services
Pharmaceuticals and Health Technologies Group
Management Sciences for Health
4301 North Fairfax Drive, Suite 400
Arlington, VA 22203 USA
Telephone: 703.524.6575
Fax: 703.524.7898
E-mail: siaps@msh.org
Website: www.siapsprogram.org

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## ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| ART | antiretroviral therapy |
| ARV | antiretroviral |
| CMS | Central Medical Stores |
| Div:PhSs | Division of Pharmaceutical Services |
| EDT | Electronic Dispensing Tool |
| FESC | facility electronic stock card |
| LMIS | logistics management information system |
| MoHSS | Ministry of Health and Social Services |
| NMPC | National Medicines Policy Coordination |
| NTLP | National Tuberculosis (TB) and Leprosy Program |
| PHC | primary health care |
| PMIS | pharmacy management information system |
| RUSF | ready-to-use supplementary food |
| RUTF | ready-to-use therapeutic food |
| SIAPS | Systems for Improved Access to Pharmaceuticals and Services |
| TB | tuberculosis |
| TSF | therapeutic and supplementary food |
| USAID | US Agency for International Development |

# EXECUTIVE SUMMARY

The USAID-funded Systems for Improved Access to Pharmaceuticals and Services (SIAPS) program has supported the MoHSS to implement patient and inventory management tools and information systems to facilitate decision making at all levels of pharmaceutical service delivery. Reporting systems for aggregating data and giving feedback to managers have been manual, leading to inconsistent and inaccurate patient and commodity data and failure by managers to respond to possible threats to effective service delivery in a timely manner. The objective of implementing the dashboard for pharmaceutical information was to improve the availability and visibility of antiretroviral therapy (ART) patients and pharmaceutical data for decision making.

SIAPS supported the MoHSS to design and implement a web-based electronic information system (dashboard) for both patient and stock status in Namibia. It was designed to improve coordination among facility, district, regional, and national stakeholders involved in HIV commodity management; increase the use of pharmaceutical information for management decision making at all levels of health care; and improve planning for financial resources for pharmaceutical commodities. The dashboard comprises a module for monitoring 22 pharmaceutical services delivery indicators, a module that summarizes the number of people accessing ART services, and an early warning system against stock-outs of antiretrovirals (ARVs) and other essential medicines.

The dashboard was successfully implemented in Namibia and has allowed all 34 district and 14 regional pharmacists to access national reports on patient data and pharmaceutical stock status. The data allow health care workers to make vital decisions leading to actions to avert stock-outs of pharmaceuticals. As of September 2017, there were 97 registered MoHSS managers and key stakeholders using the dashboard to make decision about pharmaceutical services by accessing key reports such as stock status of ARVs. Web-based dashboard systems increase the availability and visibility of data from facility-based electronic tools and information systems. The data are critical for making informed decisions and taking timely action for the optimal management of ART patients and for inventory of pharmaceutical commodities. Implementation of electronic systems for patient and stock management is important to improve the visibility of pharmaceutical information, which is crucial for decision making in pharmaceutical services.

## BACKGROUND

Namibia is located in Southern Africa and has a population of more than 2.1 million (Namibia 2011 Population & Housing Census). It is among the countries with the highest HIV prevalence. In 2013, an estimated 14% of the adult population (age 15–49 years) was living with HIV (MoHSS, 2013). Namibia's MoHSS provides ARVs at no cost to patients in public health facilities. The MoHSS manages approximately 350 health facilities in Namibia's 14 regions. More than 80 of those facilities serve as ART main sites and are equipped with the USAID/SIAPS-supported Electronic Dispensing Tool (EDT). Some clinics and health centers have outreach points aimed at getting services closer to the people.

By adopting the public health approach to scaling up ART, which involves the use of standardized and simplified treatment regimens, Namibia has achieved more than 80% coverage of ART services for people living with HIV. The scale-up of ART services has put pressure on the public health system to manage a higher volume of patients and the extra resources required for HIV-positive patients.

The MoHSS of Namibia, with technical assistance from SIAPS and its predecessor, the Strengthening Pharmaceutical Systems program, has implemented systems for patient and pharmaceutical inventory management at public health facilities. Through training and support supervisory visits, SIAPS has increased the capacity of pharmacy staff and nurses on pharmaceutical management. The focus was on manual inventory management until 2016, when SIAPS introduced the facility electronic stock card (FESC). However, managers at different levels of the MoHSS could not access data on the stock status of ARVs and other essential medicines and clinical supplies at central and regional medical stores and at district hospitals, which supply lower-level primary health care (PHC) facilities (i.e., health centers and clinics). The manual stock cards used in inventory management were tedious to complete and contributed to inaccurate and late reporting of stock status data by health facilities, resulting in delayed information of poor quality being available to managers for decision making. The use of the manual patient and stock management systems hindered achieving efficiency and accountability in the public sector pharmaceutical supply chain.

To address this gap, the MoHSS partnered with SIAPS to deploy electronic stock and patient management tools at medical stores, hospitals, selected health centers, and clinics managing ART patients. SIAPS-supported electronic tools include the EDT, FESC, e-TB Manager, and a dashboard for pharmaceutical information.

The EDT has been used in public-sector ART pharmacies in Namibia since August 2005. The database application helps pharmacy staff efficiently manage patients and ARVs. This includes monitoring patient adherence to ART, retention in care, dispensing history, regimen and status changes, appointment keeping, and maintaining a good inventory of ARVs. There are currently more than 80 main EDT sites across the 14 regions of Namibia, including hospitals, health centers, and clinics. ART sites nationwide have reported more than160,000 patients on ART as of September 2017, of which approximately 8% are pediatric patients (MoHSS, 2017).

The FESC was deployed to replace the manual stock card used for transactional recording of receipt of stock from medical stores and issuing of stock to the pharmacy dispensary, wards, and lower-level facilities. The FESC has been implemented in all 35 public hospitals and 20

selected health centers and clinics. FESC implementation involved the installation of software and training of pharmacy staff at selected health facilities on how to use the system for inventory management. The FESC simplified inventory management tasks by automating the calculation of average monthly consumption, resulting in accurate requisitions to medical stores for resupply of pharmaceuticals to maintain optimal stock holding. The FESC also provided an auditable record of transactions to improve accountability of pharmaceuticals. Automation of inventory control tasks enabled pharmacy staff to devote more time to providing pharmaceutical care to patients. According to testimonies from Olavi Shomongula and Veronica Shoopati in the Oshana region of Namibia, automation also reduced patient waiting time (http://siapsprogram.org/2017/07/21/u-s-ambassador-visits-namibia-clinic-to-unveil-new-siaps-e-health-innovation/). The Central Medical Stores (CMS) and the two multiregional medical depots in the Rundu and Oshakati districts use Syspro, a tool for managing inventory and capturing transactional information during operations. The tools have a wealth of information regarding the stock status and usage of pharmaceuticals in Namibia's pipeline.

The Div:PhSs in Namibia also uses a service delivery information system to monitor 22 performance indicators of pharmaceutical services, including rational medicine use, human resource and workload, financing, and medicines availability. The information and trends collected from the pharmacy management information system (PMIS) support strategic planning, provide data that make the health system more accountable, facilitate resource allocation, identify problem areas, and facilitate intervention design. Comparing indicators between districts and regions can help monitor whether interventions lead to improvements in service delivery.

Transactional data from the PMIS, FESC, EDT, and Syspro need to be aggregated, analyzed, and presented to MoHSS managers in a timely manner. This will allow managers to identify potential threats to service delivery and make corrective decisions. The MoHSS has also been distributing therapeutic and supplementary food (TSF) products (ready-to-use therapeutic food (RUTF) and ready-to-use supplementary food (RUSF)) to manage acute malnutrition caused by prolonged droughts that have plagued the Northern regions in Namibia. Until 2017, the management of nutrition assessment, counseling, and support products followed a parallel distribution system that made monitoring and stock status visibility difficult.

# INTERVENTIONS

## Design, Development, and Implementation of the Dashboard for Pharmaceutical Services

SIAPS supported the MoHSS to design and implement a web-based electronic information system (dashboard) for both patient management and stock status tracking in Namibia. The dashboard increased visibility of stock and ART patient data, enabling MoHSS managers to make evidence-based decisions. The dashboard replaced the manual processes used by the MoHSS in reporting, aggregating, and presenting data from patient drug prescription and stock management systems through quarterly feedback reports. The manual system of reporting with feedback reports was very tedious and time consuming, with reports often taking more than three months to be distributed to MoHSS managers. This meant that by the time the data were presented, it was too late to make timely decisions to avert or prevent service delivery problems.

Aggregation of data from the electronic tools and service delivery system has been made easier with the dashboard, which allows users at health facilities to update automatically generated reports from the FESC, EDT, and Syspro in the pharmaceutical information dashboard. The dashboard also allows PMIS reports from an Excel template to be uploaded to the service delivery component of the dashboard. The dashboard was designed to improve coordination among facility, district, regional, and national stakeholders involved in HIV commodity management; increase the use of pharmaceutical management information for decision making at all levels of health care; and improve planning for financial resources for pharmaceutical commodities. Figure 1 demonstrates the flow of information between the pharmacy management tools and the dashboard.

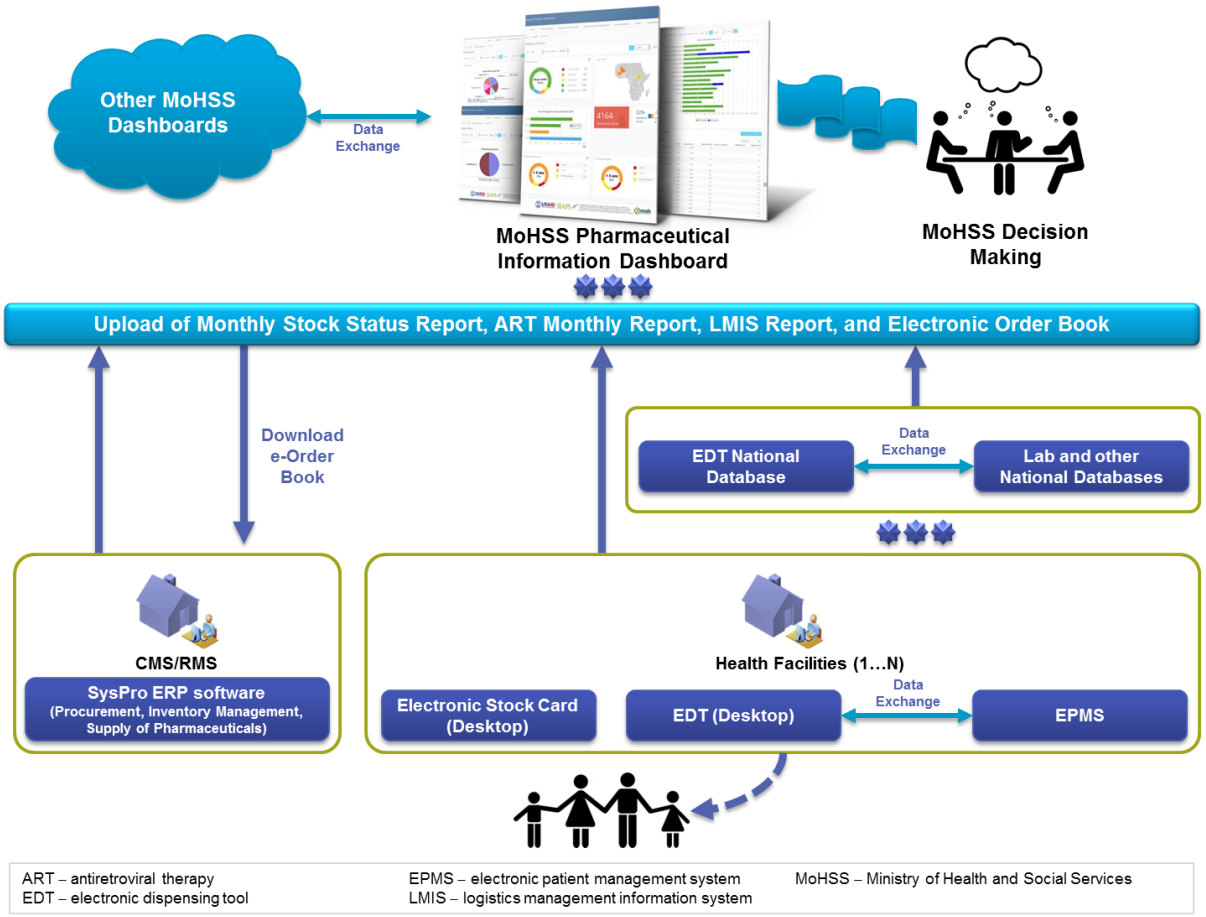


**Figure 1. Flow of information between pharmacy management tools and systems and the dashboard for pharmaceutical information. *Designed by USAID/SIAPS Namibia, 2016***

The dashboard interface (*www.pmis.org.na*) comprises three main modules:

1. A module that summarizes the number of people accessing ART
2. An early warning system against stock-outs of ARV and other essential medicines
3. A module for monitoring 22 indicators of pharmaceutical services delivery

Figure 2 shows the home page of the pharmaceutical information dashboard. The dashboard can be viewed at www.pmis.org.na. Part of the design included adapting the manual reporting forms for easy uploading to the dashboard. SIAPS supported the MoHSS to adapt the PMIS, ART monthly report forms, stock card, and logistics management information system (LMIS) reporting forms of the CMS and multiregional medical depots.

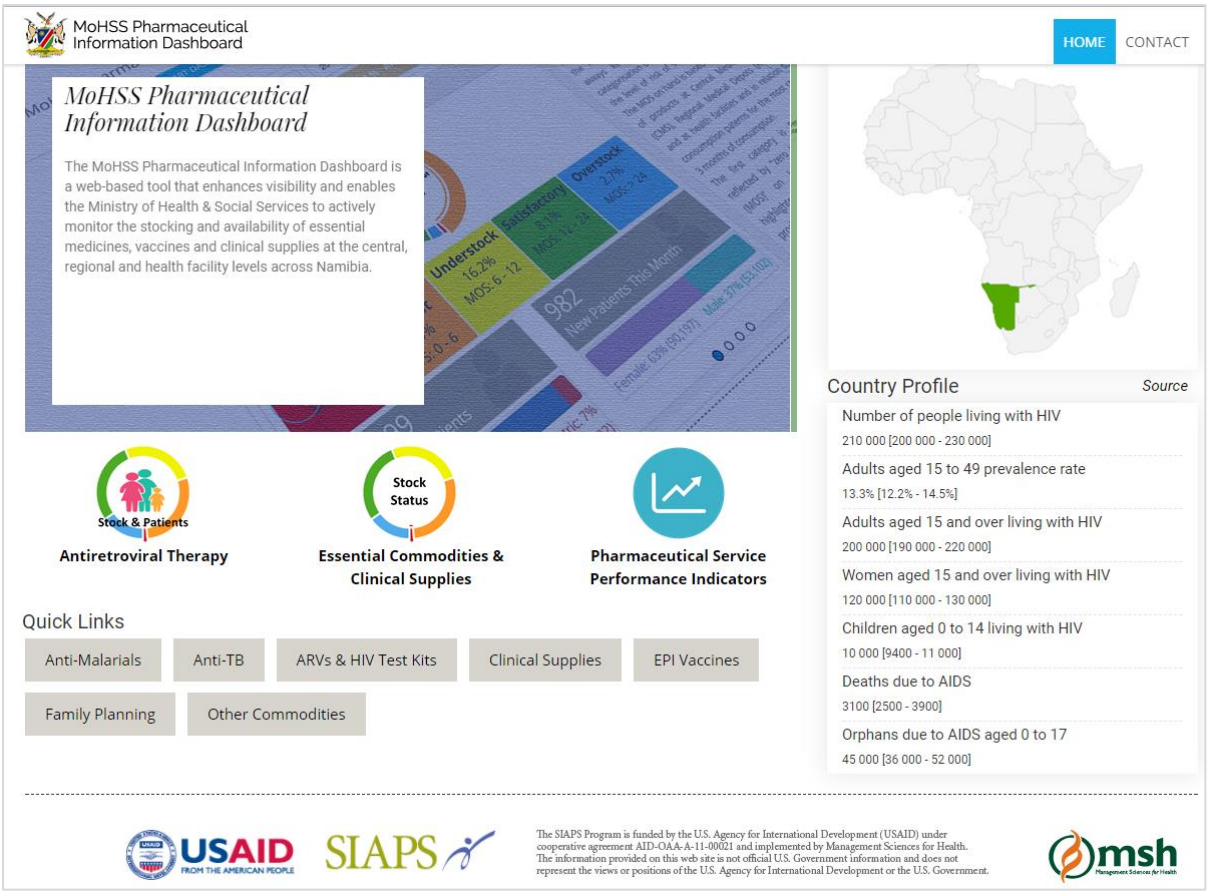


**Figure 2. The home page of the pharmaceutical information dashboard**

After designing the dashboard, SIAPS had to sell its capabilities and benefit to managers within MoHSS and other pharmaceutical service delivery stakeholders. This was systematically done through advocacy at various levels of the MoHSS.

## Launch of the Pharmaceutical Services Dashboard

The Minister of Health, Hon. Dr. Bernard Haufiku, launched the dashboard at a high-profile event in Windhoek on June 23, 2016. The US Ambassador to Namibia, H.E. Mr. Thomas Daughton, attended the event. The dashboard was jointly launched with the new FESC, which was being installed in hospitals throughout the country. The launch event received extensive media coverage and demonstrated political buy-in from the most senior officers in the MoHSS.

*The US Ambassador to Namibia, H.E. Thomas Daughton (left), and the Minister for Health and Social Services, Dr. Bernard Haufiku (right), launch the new Pharmaceutical Information Dashboard at the Windhoek Central Hospital, Namibia, on June 23, 2016. Photo credit: SIAPS Namibia staff*

*Yousef Makar, Chief Pharmacist at the Windhoek Central Hospital (standing right), watches as Senior Pharmacist Robins Oyo (seated left) demonstrates the dashboard to US Ambassador Thomas Daughton (seated middle) and MoHSS Minister Dr. Bernard Haufiku (seated right) at the hospital pharmacy on June 23, 2016. Photo credit: SIAPS Namibia staff*

Demonstrating political buy-in was important in convincing health facility staff to move from the manual reporting systems they had used for decades to electronic tools for reporting and data transmission.

### *Training of Managers in the TB Program on Using the Pharmaceutical Services Dashboard*

SIAPS provided technical assistance to the National TB and Leprosy Program (NTLP) to train NTLP managers on the FESC and pharmaceutical information dashboard to improve inventory management of tuberculosis (TB) medicines. At a national training in November 2016, participants were introduced to inventory management of TB medicines and ARVs in Namibia. Procedures for quantifying TB and HIV medicines were introduced to participants, with an emphasis on the role of MoHSS managers in managing the supply chain of ARVs and TB medicines. The tools used in health facilities to manage the inventory of pharmaceuticals were demonstrated to TB program managers, including how these tools are used for reporting and extracting data for uploading to the national pharmaceutical services dashboard.

SIAPS oriented 42 NTLP managers and district coordinators on how to use the dashboard for decision making, including how to access and interpret reports available in the dashboard. The role of health care workers in ensuring that data are available for reporting was discussed to ensure that MoHSS managers take responsibility and provide leadership for the timely generation and uploading of reports into the dashboard.

The SIAPS-supported e-TB Manager is used for managing patients and inventory of multidrug-resistant TB medicines. NTLP managers were introduced to different modules in e-TB Manager that are used for managing TB patients and medicines. The role of MoHSS managers in following up with regular reporting and accurate data entry into the tool was also emphasized and demonstrated with simple quantification exercises using data generated from the dashboard.

This training was aimed at developing the capacity of TB program managers to access up-to-date information on the status of TB medicines from the dashboard to assist them in sustaining the supply chain of those medicines. The training was also used to help managers of regional management teams understand their role in ensuring that transactional data and reports are captured and uploaded regularly into the dashboard.

### *Introduction to the Pharmaceutical Information Dashboard for Stakeholders in Namibia's HIV/AIDS Programs*

SIAPS introduced the pharmaceutical information dashboard to stakeholders in Namibia's HIV/AIDS programs during Namibia's first National AIDS Conference in November 2016. The conference, with a theme of "Together We Are Ending AIDS in Namibia", brought together the MoHSS, national HIV program representatives, and other stakeholders to reflect on achievements made toward the reduction of HIV/AIDS and the road ahead for ending HIV in Namibia by 2030.

At the conference, SIAPS presented eight abstracts on its work in supporting the MoHSS to strengthen pharmaceutical services in Namibia. Oral presentations included abstracts on the

FESC, EDT SMS reminder system, and pharmaceutical information dashboard. SIAPS also hosted a plenary on the dashboard.


*SIAPS Senior Technical Advisor Mr. Bayobuya Phulu explains the Pharmaceutical Management Information Dashboard at a plenary session at the Namibia National AIDS Conference on November 30, 2016. Photo credit: SIAPS Namibia*

### *Training of MoHSS Managers in Namibia's Public Sector on the Pharmaceutical Information Dashboard*

SIAPS provided technical assistance to the Div:PhSs to train 49 MoHSS national, regional, district, and hospital managers on how to use information from the dashboard for decision making in pharmaceutical inventory management. The orientation was part of a structured workshop in July 2017 in Windhoek, Namibia. Regional and hospital managers were introduced to the tools used for inventory management of ARVs and other essential medicines in Namibia's public sector. Managers were also trained in the principles involved in the quantification of medicines for procurement planning for their respective regions; the quantification exercise used data from the dashboard and FESC. Facilitators demonstrated the use of electronic tools in managing essential medicines, including tools for reporting and extracting data for uploading to the national pharmaceutical information dashboard.

MoHSS managers were oriented on how to use information from dashboard reports for decision making, including accessing and interpreting reports available in the dashboard. MoHSS regional managers were given the responsibility of ensuring that health care workers in their regions would generate and upload reports to the dashboard in a timely manner. As part of an exercise on using information from the dashboard, MoHSS mangers were given data from stock management tools in their health facilities and asked to use those data to develop procurement plans for pharmaceuticals for their regions. All regions developed and presented procurement plans in a plenary session. The plans developed at the workshop will be used by the regions to advocate for financial resources for the procurement of

pharmaceuticals in 2018/2019. At the end of the workshop, all regions developed and presented action plans on how they would improve the use of data for decision making in their regions and ensure that there is timely and accurate reporting of data from pharmacy management tools in their health facilities.

SIAPS also trained 27 regional pharmacists, district pharmacists, and Div:PhSs managers on the FESC, generating LMIS monthly reports and uploading to the dashboard. The training took place during the annual pharmacists' forum in September 2016 and aimed at improving reporting, data availability, and visibility at the national, regional, and district hospital levels to minimize stock-outs and wastage of ARVs and other essential medicines. Regional and district hospital pharmacists developed action plans to ensure the continued and efficient implementation of the FESC, upload data to the pharmaceutical dashboard for visibility, and use those data for decision making.

In an effort to ensure timely use of data from the dashboard for decision making by ART program clinical mentors, SIAPS built the capacity of clinical mentors in Namibia's 14 regions to access and use the pharmaceutical information dashboard. This was facilitated through a digital video conferencing session attended by nearly 70 health care workers around the country. During this session, emphasis was placed on mentors' roles and responsibilities in ensuring that any untoward trends in management of ART patients and stock are quickly followed up and resolved with facility staff.

### *Integration of TSF Products into the FESC and the Dashboard for Inventory Management and Stock Status Visibility*

SIAPS supported the MoHSS Directorate for PHC and facility managers, especially in the Oshana, Ohangwena, and Oshikoto regions, to integrate TSF products (RUTF and RUSF) into the FESC and the dashboard so that the products would follow the normal inventory record system for pharmaceuticals and clinical supplies. This has enabled MoHSS mangers to monitor TSF stock status and visibility in the dashboard. Integration of TSF products into the FESC and the dashboard has eased inventory management, stock status monitoring, and reporting.

## OBSERVATIONS AND RESULTS

The pharmaceutical information dashboard enhanced the visibility of pharmaceutical and ART data for management decision making. The dashboard has built in functionality for tracking reporting rates from the EDT and FESC by monitoring the submission of monthly ART and LMIS reports through uploads to the dashboard. Reporting rates have been improving significantly since implementation to greater than 90% for ART and 75% for the LMIS by September 2017. Figures 3 and 4 show reporting rates for the ART and LMIS sections of the dashboard as of October 2017.

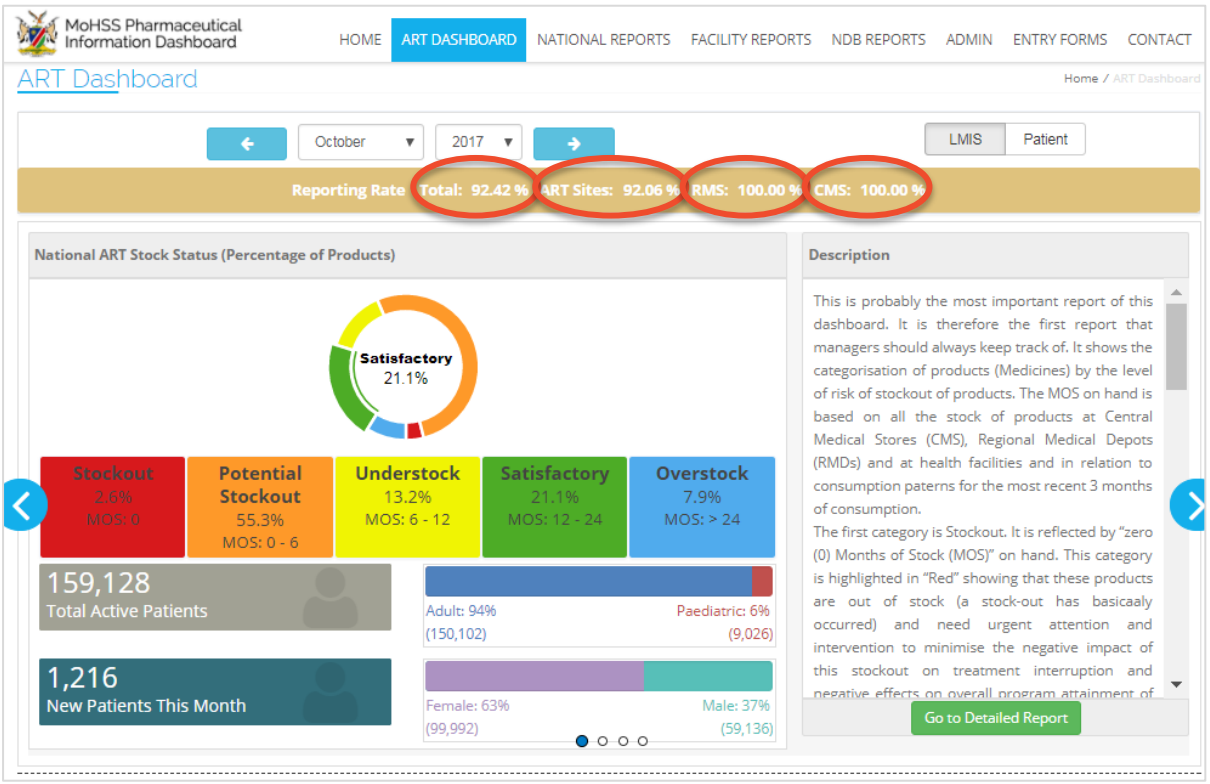


**Figure 3. Snapshot of the pharmaceutical information dashboard with reporting rates from health facilities and medical stores on the ART section of the dashboard. Source: www.pmis.org.na**

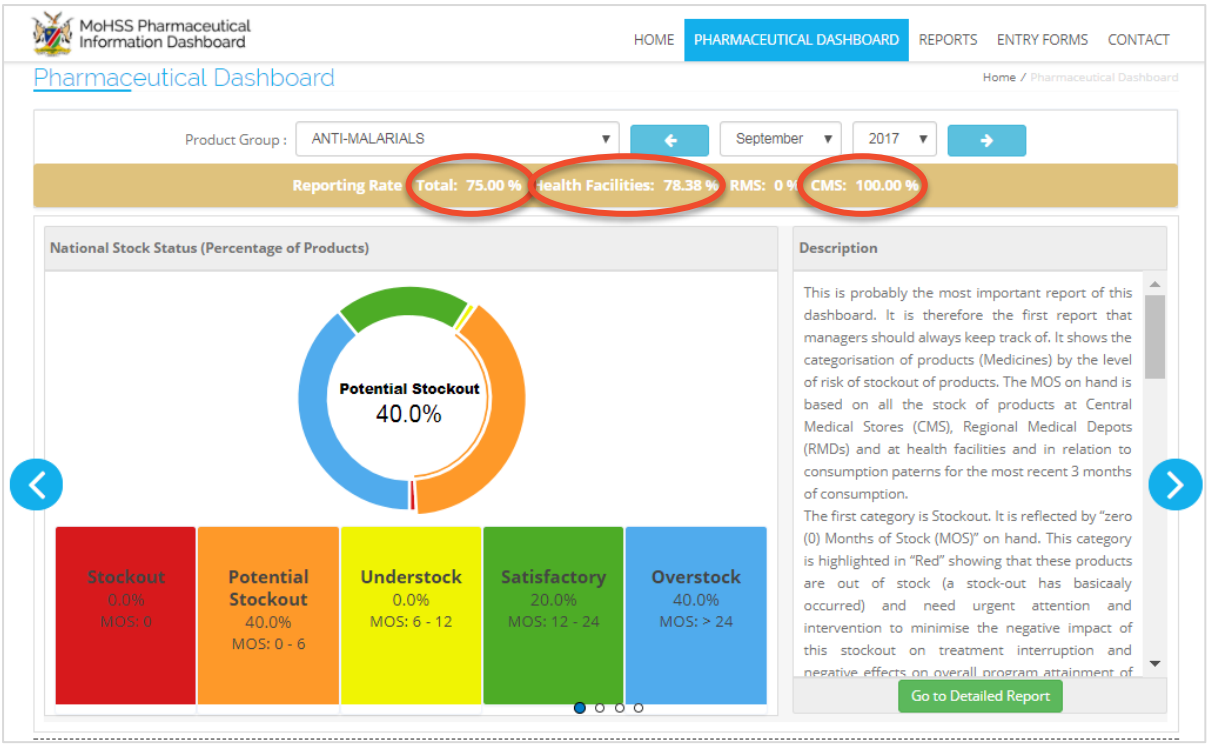


**Figure 4. Snapshot of the pharmaceutical information dashboard with reporting rates for the LMIS section of the dashboard. Source: www.pmis.org.na**

Reporting rates for the LMIS section are lower than those for the ART reports. Reporting rates from the CMS have also consistently been 100%, which is important as most stock is stored at central and regional medical stores.

A September 2017 analysis of dashboard users showed that 97 MoHSS health workers, managers, and partners had access to and were using ARV and other pharmaceutical information from the MoHSS dashboard for review and planning for pharmaceutical services. Figure 5 shows the different cadres of MoHSS managers who were using the pharmaceutical information dashboard for decision making as of June 2017.

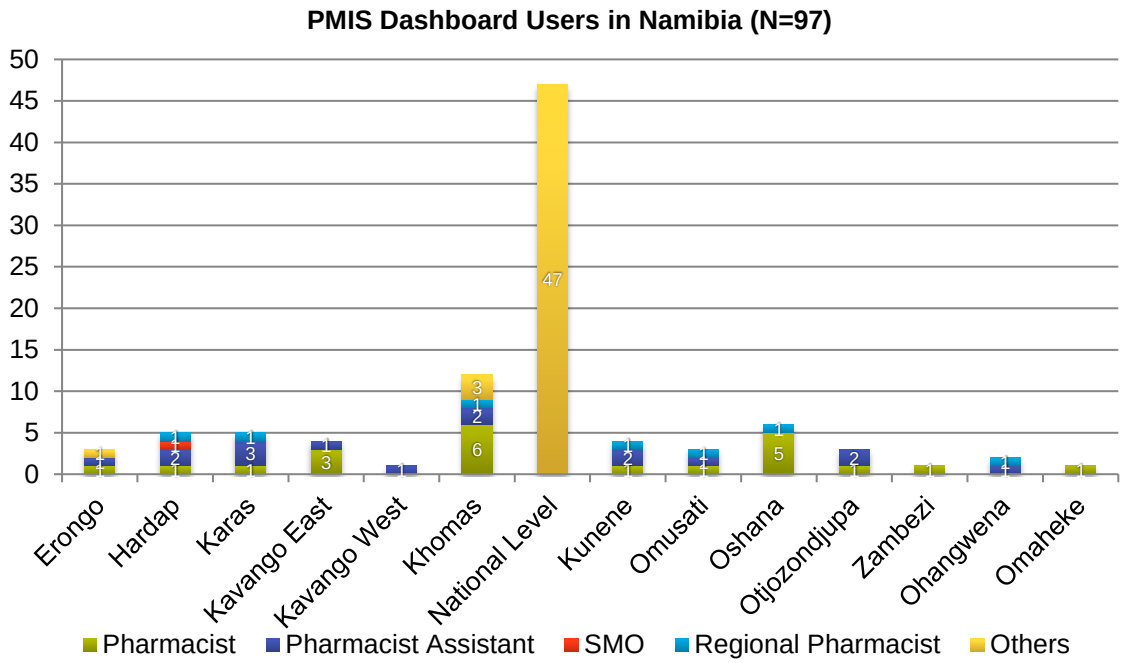


**Figure 3 Dashboard users and their positions as of June 2017**

The pharmaceutical information dashboard collects reports from 81 ART sites, LMIS reports from 55 sites using the FESC and reports from the CMS and the two multiregional medical depots from Syspro.

### *Improved Reporting and Visibility of Pharmaceutical and ART Data*

Following the introduction of the dashboard to managers and facility-based technical assistance, LMIS reporting to the dashboard increased (figure 6), thereby increasing the visibility of stock status data for pharmaceutical decision making.

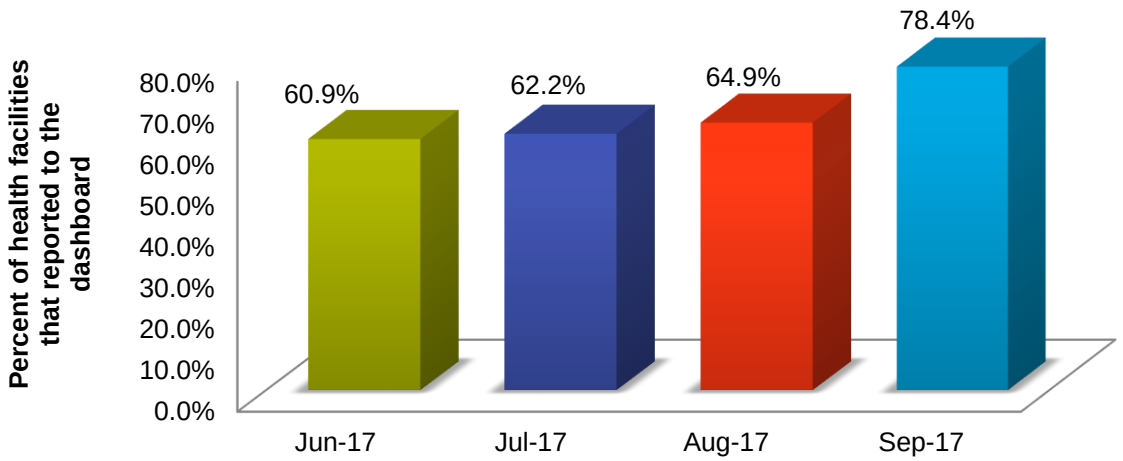


**Figure 6. LMIS reporting improved due to facility-based technical assistance on the use of the FESC and the dashboard, especially in the Oshana, Ohangwena, Oshikoto, and Khomas regions. Source: PMIS dashboard (www.pmis.org.na)**

### *Visibility of TSF Product Stock Status on the Dashboard*

The integration of TSF products into the FESC and the dashboard is progressing well. The number of facilities reporting the distribution of TSF products in the dashboard grew from six in July–September 2017 to 17 in October–December 2017. The improvement is partially attributed to SIAPS' continued follow up with the pharmacy and PHC teams in the Ohangwena, Oshikoto, Oshana, Omusati, and Kavango East/West regions to ensure the receipt and issuing of TSFs (RUTF and RUSF) to the clinics/dispensing points are recorded in the FESC.

## DISCUSSION OF FINDINGS

The dashboard was successfully used to consolidate data from facility- and patient-level systems to ensure pharmaceutical data visibility at the national, regional, district, and facility levels. This significantly reduced the workload for data aggregation and presentation at the regional level and at the National Medicine Policy Coordination (NMPC) subdivision at the national level. Before implementing the dashboard, the NMPC needed to assign dedicated staff for manual report collection from health facilities and for the aggregation and analysis of the reports to identify trends and threats to effective service delivery, including risks of stock-outs of vital ARVs. Report uploads, data aggregation, and site-level stock data visibility of essential logistics data from health facilities have been enhanced by the dashboard, making it easy for evidence-based decisions to be made in pharmaceutical management.

The automated data aggregation by the pharmaceutical information dashboard has led to improvements in the quality and reliability of information from the information systems and tools compared to the paper-based inventory management systems and tools used by the NMPC to aggregate and present information. The manual system was more prone to inaccuracy and took significant labor and staff time. The implementation of electronic tools that accompanied the dashboard also reduced the workload of health facility staff in compiling and aggregating reports, allowing more time for patient care and other pharmaceutical care tasks.

One of the biggest influences in the successful transition to electronic patient and stock management tools that complimented the implementation of the pharmaceutical information dashboard was political buy-in from senior politicians and MoHSS managers. The launch of the FESC and dashboard and the unveiling of the two tools at the pharmacists' forum in 2016 helped to influence a change in behavior among health facility staff to embrace the new tools and information systems.

Reporting rates and the use of the electronic tools for patient and stock management were low at the beginning of the implementation, leading to incomplete reports or late reporting to the dashboard. Extensive trainings of MoHSS managers and follow up mentorship visits to regional management teams and health facility staff were important in encouraging use of the tools for patient and stock management and also in ensuring the use of the information from the tools in pharmaceutical management decision making. Reporting rates and numbers of people accessing the dashboard increased after each training workshop, follow-up mentorship, and support visit to the regions.

Another key driver for the successful implementation of the dashboard was support from the NMPC in coordinating and following up on reports from ART sites and health facilities. This was demonstrated by very high reporting rates in the ART section of the dashboard compared to the LMIS and PMIS sections due to the availability of an ART logistics pharmacist at the NMPC who was dedicated to the coordination of ART services and ART commodity management. The NMPC has since been supported to step up the level of support to other sections of the dashboard. The ART logistics pharmacist has taken responsibility for following up on reports and supporting the uploading of reports in all sections of the dashboard, leading to significant improvements in the reporting rates by September 2017.

Reporting rates from the CMS have also consistently been at 100%, which is important as most of the stock in the pipeline is stored at central and regional medical stores. The high reporting rates from the medical stores were due to the demand from health facility staff from the regions, who insisted on being able to view up-to-date stock status reports on CMS stock to enable them to plan for orders for their facilities. SIAPS supported the CMS to build the capacity of its pharmacy staff who were dedicated to uploading and managing reports from Syspro at the CMS to the pharmaceutical information dashboard. Reports from the CMS are now being uploaded as often as every two weeks, increasing the accuracy and completeness of CMS stock data.

However, there were a few stock-outs of key commodities, such as ARV testing kits, in 2017. More support for the ART program is needed to ensure that MoHSS managers get regular information on pharmaceutical products at risk of stock-out. SIAPS supported the pharmacist at the Directorate of Special Programs to provide regular stock status updates to program managers and the Technical Advisory Committee on HIV/AIDS to allow them to design interventions to avert stock-outs of key ART commodities.

Monitoring of TSF products using the dashboard is picking up as more facilities understand the process and start managing products using the FESC. Continued technical assistance and advocacy are needed, as is coordination between pharmacy and PHC staff on managing TSF products using the PMIS.

## CONCLUSIONS AND RECOMMENDATIONS

Namibia and other low- and middle-income countries have been using manual dispensing and inventory management tools and systems for a while. Reporting, aggregating data, and providing feedback to managers have been manual processes, leading to late, inconsistent, and inaccurate patient and commodity data and failure by managers to detect or identify threats that result in interrupted availability of medicines and associated risks related to stock-outs and patient care. As technology has evolved, it has been necessary to replace the paper-based systems with electronic systems for dispensing and inventory management. Electronic tools and systems provide an opportunity to improve data aggregation and visibility of information, including early warning systems for stock-outs of pharmaceutical commodities, to allow managers to manage the risks through timely decision making. Lessons learned in the transition from paper-based to electronic systems can be useful to other developing countries as they implement similar technology.

Web-based platforms can be used to consolidate data from various facility- and patient-level systems to ensure pharmaceutical data visibility at the national, regional, and facility levels. These platforms provide national statistics on the ART program based on data from electronic tools and systems. Managers can view site-level stock data of essential commodities for evidence-based forecasting and supply planning of pharmaceutical commodities. Program managers have information on essential ART service indicators, such as patient numbers, regimen distributions, adherence, loss to follow up, and early warning indicators of drug-resistant HIV.

Continued enhancement of the capacity of tool users and managers at all levels is still needed as health care staff transition from one facility to another or out of the public health system, often without skills and knowledge transfer.

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# ANNEXES

## Annex A. Agenda: Orientation of MoHSS Managers on the Pharmaceutical Information Dashboard

***REPUBLIC OF NAMIBIA***

***Ministry of Health and Social Services***

Agenda: Orientation of MoHSS managers on the pharmaceutical information dashboard

**Venue:** *Safari Hotel*, Windhoek, Namibia Date: 19–20 July 2017

**Day 1: Wednesday 19 July 2017**

**Objectives**

1. Introduce pharmaceutical management tools used at health facilities
2. Introduce MoHSS national, regional, and district hospital managers to the Pharmaceutical Information Dashboard
3. Support the managers to access the dashboard reports online
4. Develop action plans for using the dashboard reports for decision making
5. Support the managers to extract existing information, generate decisions and discuss actions that can be taken at district, regional, and national level

| Time | Activity / session I- Chairperson Mr. Lazarus Indongo | Responsible |
|---|---|---|
| | **19 July 2017** | |
| 08:30–09:00 | 1. Registration | All |
| 09:00–09:15 | 2. Welcome remarks and opening of workshop | PS-MoHSS |
| 09:15–09:45 | 3. Overview of pharmacy management tools and systems (FESC, EDT & PMIS, SYSPRO) | Alemayehu Wolde |
| 09:45–10:30 | 4. Introduction to the pharmaceutical information dashboard | Bayobuya Phulu |
| 10:30–11:00 | Health break | |
| 11:00–11:40 | 5. Status of reporting and key reports from dashboard | Wuletaw Churfo |
| 11:40–12:00 | 6. FESC reports for the health facilities | Alemayehu Wolde |
| 12:00–12:45 | 7. Challenges with dashboard implementation | David Mabirizi |
| 12:45–13:00 | 8. Introduce group task & plenary feedback format | Harriet Kagoya |
| 13:00–14:00 | Lunch- Session II- Chairperson –Dr. David Mabirizi | |
| 14:00–14:45 | 9. Group work by region:<br>• Access to dashboard and login<br>• Each participant logs into dashboard online<br>• Review status of reports on the dashboard online for respective region<br>• Select any one summary report and discuss it<br>• Suggest 1 to 3 key decisions and action as a manager | Regional Teams |
| 14:45–15:00 | 10. Feedback to plenary & discussion | Regional Directors |
| 15:00–15:15 | Health break | |
| 15:15–16:40 | 11. Continued feedback to plenary & discussion | Regional Directors |
| 16:40–16:50 | 12. Awards | MOHSS and MSH/SIAPS |
| 16:50–17:00 | 13. Review FESC consumption data from the regions | Regions |

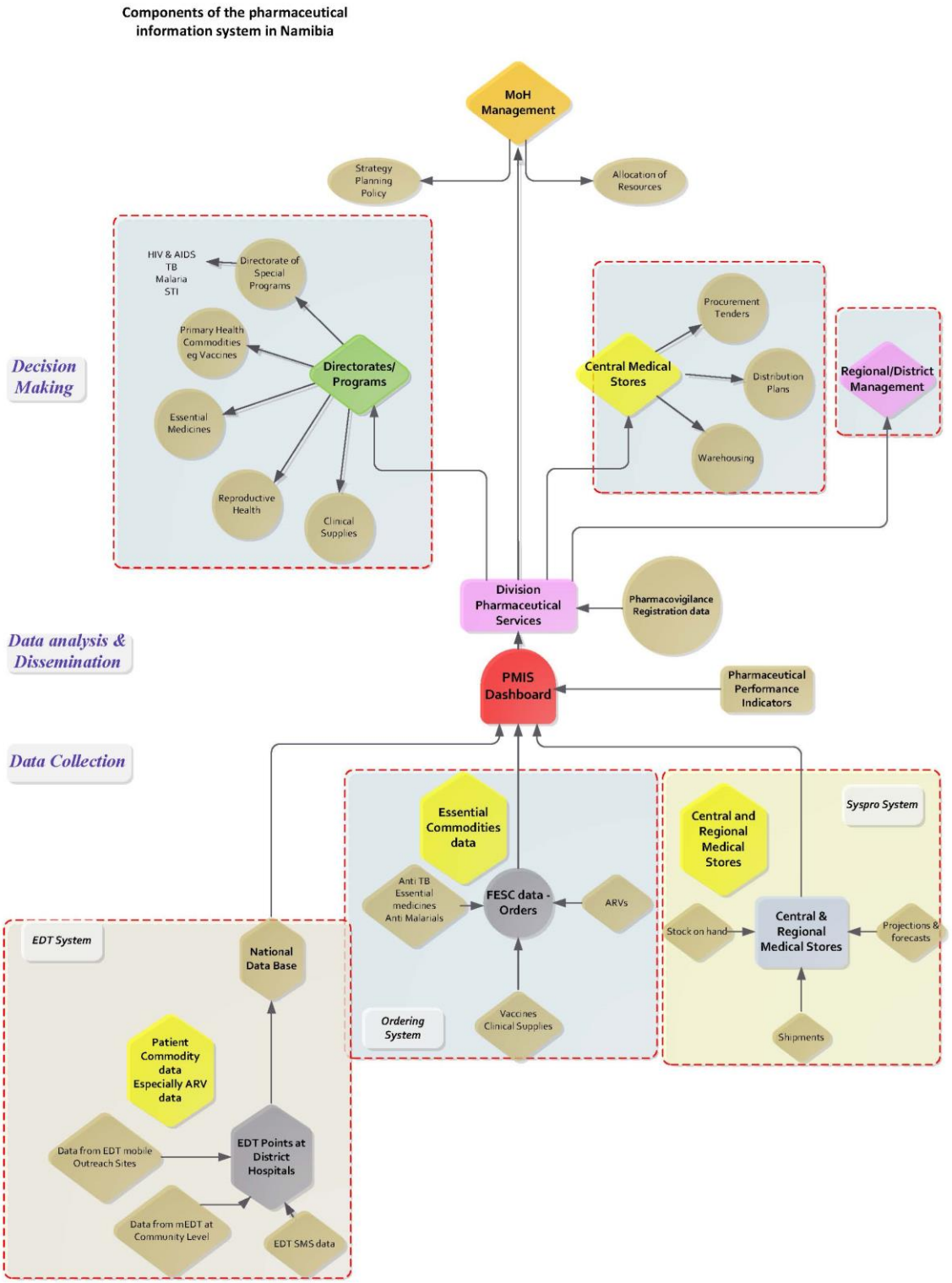
## Day 2: Thursday 20 July 2017

**Objectives**

1. Support the managers to extract existing information from pharmacy tools
2. Support managers to generate decisions and discuss actions that can be taken at district, regional, and national level
3. Compile regional procurement plans for pharmaceuticals

| Time | 20 July 2017- Day 2- Activity / session I Kennedy Kambyambya | Responsible |
|---|---|---|
| | | |
| 08:30–09:30 | 14. Overview of pharmaceutical forecasting and budgeting | PSM |
| 09:30–10:30 | 15. Analysis of national pharmaceutical expenditure | PSM |
| 10:30–11:00 | Health break | |
| 11:00–12:00 | 16. Demonstration on developing consumption-based pharmaceutical requirements forecast and budget using Excel | PSM |
| 12:00–13:00 | 17. Group work by region:<br>• Develop district level pharmaceutical requirements forecasts and budgets using Excel | Regional Teams |
| 13:00–14:00 | Lunch- Session II- Lazarus Indongo | |
| 14:00–15:00 | 18. Group work by region (continued):<br>• Reflect on public health needs and morbidity patterns within their respective regions<br>• Make adjustments to the forecast to reflect morbidity patterns and other factors | |
| 15:00–16:00 | 19. Feedback to plenary & discussion (20 minutes per region 3 presentations) | Regional Teams |
| 16:00–16:30 | 20. Discussion on accountability for pharmaceuticals & next steps | PSM |
| 16:30–17:00 | 21. Closing | MoHSS Director THC&CSS |

## Annex B. Information Flow Chart in Namibia



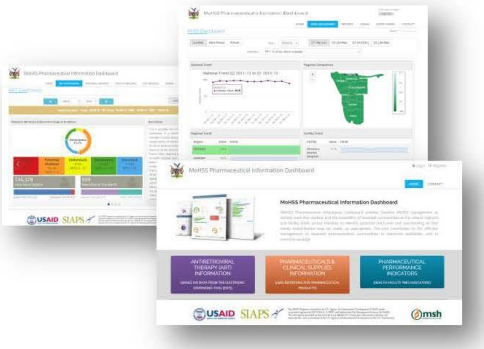
## Annex C. Summary of the Pharmaceutical Information Dashboard

### MoHSS Pharmaceutical Information Dashboard

The MoHSS Pharmaceutical Information Dashboard is a web-based tool that enables the Ministry of Health & Social Services to actively monitor the stocking and availability of essential medicines, vaccines and clinical supplies at the central, regional and health facility levels across Namibia.

### Benefits of the Dashboard

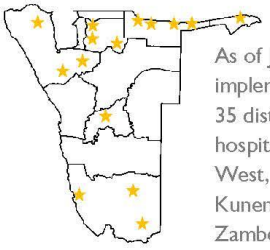
- Increases visibility of high-quality stock status data that improves pharmaceutical supply chain decision-making
- Identifies potential stock-outs and overstocking to enable timely redistribution of health products
- Efficient management of essential pharmaceutical products to maximize availability and to minimize wastage



www.pmis.org.na

### Key Features of the Dashboard

- The dashboard comprises three parts:
  - **ART Dashboard** – provides a summary of the number of people accessing HIV treatment and an early warning on potential stock-outs of ARVs
  - **Pharmaceutical Dashboard** – provides managers with visibility of stock status for all essential health products at central, regional and facility levels
  - **PMIS Dashboard** – trends 22 essential pharmaceutical information management indicators (PMIS)



As of June 2016, FESC was implemented in 15 out of the 35 district and referral hospitals in Kavango East and West, Karas, Khomas, Kunene, Oshikoto and Zambezi regions.

### Facility Electronic Stock Card (FESC)

For the efficient flow of pharmaceutical stock status information to the MoHSS Pharmaceutical Information Dashboard, all district and referral hospitals will have a computerized stock management system called the Facility Electronic Stock Card (FESC). This will gradually replace the paper-based stock card currently in use. FESC simplifies the pharmaceutical inventory control tasks, provides real-time stock status, and allows pharmacy staff to devote more time to patient care.

#### Key Functions of FESC

- Automates calculation of health product usage and generation of stock status reports
- Generates accurate requisitions to medical stores for resupply of health products
- Provides auditable records of transactions for accountability purposes

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