Uganda National Supply Chain Assessment

Capability and Performance

AUGUST 2018

Acknowledgments

About the Program Under Which the Assessment Is Organized

Support for this assessment was provided through the umbrella GHSC-PSM project, Contract Number: AID-OAA-I-15-0004, which brings a new approach to achieving the agency's global health priorities aiming to reach millions more people through increased efficiencies and cost savings. By incorporating lessons learned over the last decade of global health supply chain management, GHSC-PSM consolidates the agency's primary supply purchasing and distribution activities across the health sector, creating one streamlined supply chain.

At the request of Uganda's MOH, USAID and The Global Fund committed to supporting a comprehensive assessment of the public national supply chain system using the updated NSCA 2.0 toolkit. USAID designated GHSC-PSM to provide support to the Uganda NSCA in implementing the assessment, data analysis, and production of the final report as part of the above-mentioned task order. This report presents the methodology and findings of the assessment, which was carried out in Uganda in May 2018.

About GHSC-PSM

By bringing together advanced technical solutions, a team of highly qualified experts, and proven commercial processes and principles, GHSC-PSM works to reduce costs and increase efficiencies in global and national supply chains. The project directly support the U.S. President's Emergency Plan for AIDS Relief, the President's Malaria Initiative, and USAID's newborn and child health, maternal health, and

population and reproductive health programs to ensure uninterrupted supplies of health commodities to save lives and create a brighter future for families around the world. Working across Africa, Asia, Central America, and the Caribbean, GHSC-PSM operates in some of the world's most challenging environments, navigating complex issues such as poor infrastructure, inefficient bureaucracies, political and financial crises, and natural disasters to ensure that lifesaving health supplies reach those most in need. For more information, visit: https://www.ghsupplychain.org/home.

Recommended Citation

Contents

Annexes

Acronyms

ACT	artemisinin-based combination therapy
ADE	adverse drug event
ADR	adverse drug reaction
AIDS	acquired immunodeficiency syndrome
CMM	Capability Maturity Model
DHO	district health office
DQA	data quality assessment
eLMIS	electronic logistics management information system
EML	Essential Medicines List
EMHS	Essential Medicines and Health Supplies
FASP	forecasting and supply planning
FEFO	first expired, first out
The Global Fund	Global Fund to Fight AIDS, Tuberculosis and Malaria
GH	general hospital
GHSC-PSM	Global Health Supply Chain Program-Procurement and Supply Management
HC	health center
HIV	human immunodeficiency virus
HR	human resources
JMS	Joint Medical Stores
KPI	key performance indicator
LMIS	logistics management information system
MAUL	Medical Access Uganda Limited
MOSOH	months of stock on hand
M&E	monitoring and evaluation
MOLG	Ministry of Local Government
NDA	National Drug Authority
NEML	National Essential Medicines List
NMS	National Medical Stores
NPSSP	National Pharmaceutical Sector Strategic Plan
NSCA	National Supply Chain Assessment
OTD	on-time delivery
OTIF	on-time-in-full-delivery
PFP	private for-profit
PHSC	public health supply chain
PNFP	private not-for-profit
PV	pharmacovigilance
QPV	quality and pharmacovigilance
RDT	rapid diagnostic test
RFID	radio frequency identification
RHZE	rifampicin/INH/pyrazinamide/ethambutol

RMNCAH	Reproductive, Maternal, Newborn, Child and Adolescent Health
RRH	regional referral hospital
RTK	rapid test kit
SATP	stocked according to plan
SC	supply chain
SCM	supply chain management
SDP	service delivery point
SOA	state of the art
SOP	standard operating procedure
SOW	scope of work
STG	standard treatment guideline
TB	tuberculosis
TLE	tenofovir-lamivudine-efavirenz
UCMB	Uganda Catholic Medical Bureau
UHMG	Uganda Health Marketing Group
UHSC	Uganda Health Supply Chain
UMPP	unusable medical pharmaceutical Product
UPMB	Uganda Protestant Medical Bureau
USAID	United States Agency for International Development
USD	U.S. dollars
WMS	warehouse management system

Executive Summary

The Ministry of Health (MOH), in collaboration with the U.S. Agency for International Development (USAID), the Global Fund to Fight AIDS, Tuberculosis and Malaria (The Global Fund), the USAID Global Health Supply Chain-Procurement and Supply Management (GHSC-PSM) project, and the USAID Uganda Health Supply Chain activity, implemented by Management Sciences for Health, conducted fieldwork in Uganda for the National Supply Chain Assessment (NSCA 2.0) from May 7 to 25, 2018. The NSCA 2.0 toolkit collects information through three primary elements: supply chain system mapping, Capability Maturity Model (CMM) covering 11 functional areas (see Exhibit 1), and current performance based on 22 key performance indicators (KPIs).

Exhibit 1. NSCA 2.0 CMM functional areas

CMM functional areas
Forecasting and Supply Management
Procurement
Pharmacy and Stores Management
Distribution
Policy and Governance
Strategic Planning and Management
Quality and Pharmacovigilance
Logistics Management Information Systems
Human Resources
Financial Sustainability
Waste Management

USAID and The Global Fund jointly funded this NSCA. The assessment focused only on the Uganda health sector supply chain that is directly financed through the Government of Uganda (GOU) or public sector funding. In other words, the Uganda NSCA focused only on the public sector — National Medical Store (NMS) and sites supplied by NMS — as well as the 534 private not-for-profit (PNFP) sites supplied by Joint Medical Stores (JMS) through the essential medicines and health supplies credit line. At the PNFP sites, the USAID-procured commodities were also included in the assessment. Results identified challenges and opportunities to support Uganda's health goals in the coming years. For instance, the MOH continues to receive significant funding from development partners, particularly with the cost of commodities.

KPI results and capability maturity scores indicated that many of the key capabilities needed for a high-performing health supply chain exist in Uganda. Strong forecasting and inventory management capabilities are found at GOU central-level entities, two critically important functions for an effective and agile supply chain. However, strong performance is not consistently achieved throughout the system. In several areas, capabilities were assessed as meeting a more mature (intermediate) level, while necessary basic capabilities remain absent. Increasing the basic capabilities could mean that facilities or functions can progress rapidly

to an intermediate rating. Capabilities and KPIs at the central-level warehouses and hospitals generally scored higher than at the health center (HC) level (for this assessment, HCs II–IV analyses are combined).

In the six months before the assessment, more than 90 percent of HCs and hospitals reported stockouts of one or more tracer commodities across the system. In 15 percent of HCs sampled, the primary first-line antiretroviral tenofovir-lamivudine-efavirenz (TLE) was stocked out on the day of the assessor's visit. None of the general hospitals (GHs) or regional referral hospitals (RRHs) were stocked out of TLE on the day of the assessor's visit. Also, 15 percent showed a stockout of the first-line malaria medicine artemisinin-based combination therapy (artemether-lumefantrine 6x4 presentation). Adherence to supply plans and results for the stocked according to plan (SATP) and stockcard accuracy KPIs were low at all HC facilities (only 25 percent of health facilities nationwide were SATP), which can contribute to higher stockout levels. NMS and JMS had stock (i.e., no stockouts) of all tracer commodities on the day of the visit. However, both central warehouses showed wide variations in stock on hand against established acceptable thresholds.

Insufficient levels of human resources to perform routine supply chain functions were observed throughout the health system. The need is clear to increase the number of supply chain staff at all system levels, particularly at hospitals and health centers. For example, general hospitals (GHs) were found to have a 55 percent vacancy rate for supply chain–related positions. This limits these facilities from adequately performing necessary supply chain activities. Currently, only 27 percent of GHs are performing internal data quality assessments of their stock management records. Hiring more staff along with using task-shifting strategies can help to rebalance the workload throughout the supply chain. A culture of improvement is apparent, as 81 percent of all HCs received supportive supervision visits last year — a clear effort from central-level participants to support and help improve service delivery points (SDPs).

High levels of LMIS record accuracy were scarce throughout the lower levels of the system. Only one-third of HCs nationally have 100 percent accurate LMIS records. Also, RRHs were found to have significant deviations between stock on hand and recorded values in the LMIS. With the insufficient levels of staff discovered throughout the supply chain, low accuracy rates are understandable. Not having enough staff can make LMIS record entry time consuming and burdensome. Capability maturity score averages ranged between 34 percent and 63 percent across all entities in the country, well below the optimal benchmark of 80 percent. Additional training and supportive supervision at facilities nationwide will be needed to help strengthen record entry and reporting practices.

Established health-care waste management policies were limited throughout the system, including at the central and policymaking levels. The MOH needs to empower an entity to be responsible for waste management practice to bring about systemwide changes. This limited presence of policies and a leading actor was reflected in the low CMM scores recorded for waste management at many sites. While reported wastage levels were relatively low throughout the system across many tracer products, large quantities of a wasted first-line tuberculosis drug were found at many SDPs. Sensitizing and training staff to properly handle this disposal will be a key learning step in solidifying the country's waste management practices.

The public sector supply chain system is committed to serving the people of Uganda and operating a well-functioning supply chain. Through analysis of CMM and KPI data, this NSCA report suggests potential opportunities for strengthening the logistics management information system, waste management, pharmacovigilance, and service at RRHs and HCs. With thoughtful planning and sustained commitment, Uganda will continue its upward trajectory toward a dynamic and efficient public health supply chain.

Background

In 2015, Uganda had an estimated population of 39 million with an annual population growth rate of 3.0 percent.[1] By 2020, the population is projected to reach 42.4 million.[2]

The Government of Uganda (GOU), through the Ministry of Health (MOH), has made progress toward ensuring access to affordable quality medicines for Ugandans. The 2015 National Medicine Policy and the National Pharmaceutical Sector Strategic Plan 2015–2020 (NPSSP III) focus on key health issues, including regulation and legislation, supply chain, medicine use, financing, and pricing under the consideration of the overall national development agenda.[3] According to the NPSSP III, the Ugandan pharmaceutical sector includes public and private participants. The private sector includes private not-for-profit (PNFP) and private for-profit (PFP) sites. PFP participants are concentrated in urban centers and engaged mainly in pharmaceutical sales. The MOH sets policy and strategic direction, while district governments engage in service delivery under Uganda's decentralized health-care delivery model. The MOH is responsible for coordinating the sector, overseeing policy implementation, quantifying national requirements for pharmaceutical products, harmonizing the supply chain management system, and promoting rational use of pharmaceutical products.

The GOU directly finances two health supply chain systems, the National Medical Store (NMS) and Joint Medical Store (JMS). Together, they supply the full range of commodities needed to support public health-care service delivery in Uganda. GOU manages the NMS, which was established as a statutory corporation (i.e., parastatal) in 1993 by an Act of Parliament. Its primary responsibility is procuring, warehousing, and distributing pharmaceutical products to all public health facilities. Uganda has 6,404 health facilities — 3,084 (48 percent) public, 2,373 (37 percent) PFP, and 947 (15 percent) PNFP. NMS supplies the lion's share in its responsibility to support the public health sector (see Exhibit 3 for a summary of health facilities by level and by type). In FY 2009/10, the Essential Medicines and Health Supplies (EMHS) procurement for public facilities was centralized to NMS through the Primary Health Care (PHC) vote (i.e., direct credit line of public funds). Through this vote, NMS receives a sizeable share of the $74.2 million U.S. dollars (USD) allocated for EMHS procurement. Nearly half of this allocation is for antiretrovirals, tuberculosis (TB) medicines, vaccines, and reproductive health and malaria commodities. NMS implements a pull system (that requires placing orders) to supply health commodities to health center (HC) IVs and hospitals, while a kit system (regular standing order, specific to each district) is used to supply all HCs II and III.[4]

JMS is the leading and oldest private pharmaceutical store in Uganda. It was established in 1979 as a joint venture between Uganda Catholic Medical Bureau (UCMB) and Uganda Protestant Medical Bureau (UPMB); the two other faith-based medical bureaus, Muslim and Orthodox, have since signed memoranda of understanding with JMS. JMS is licensed by the National Drug Authority (NDA) to engage in import, export, wholesale of medicines, and related health-care supplies. As a faith-based organization, JMS engages in procurement, warehousing, and distribution of pharmaceutical products to private health facilities.

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[1] "Uganda," World Health Organization, 2017, retrieved from http://www.who.int/countries/uga/en/

[2] "National Pharmaceutical Sector Strategic Plan III 2015–2020," The Republic of Uganda. Ministry of Health, retrieved from http://health.go.ug/content/national-pharmaceutical-sector-strategic-plan-iii-2015-percentE2 percent80 percent93-2020

[3] Ibid.

[4] Ibid.

Overall, JMS supplies 3,106 health facilities (2,237 private for-profit and 869 private not-for-profit)[5]; however, its support role to supply faith-based PNFP facilities was recently bolstered through legislative action for public sector funding. In July 2017, Uganda's Parliament approved an MOH proposal to establish an EMHS credit line of $2 million USD in public funds for 534 PNFP facilities supplied through JMS.[6] Representing half of the primary health-care nonwage grant of public funds for the PNFP sector, this amount was to finance procurement and distribution of key tracer medicines by JMS as a more cost-effective and transparent EMHS procurement mechanism for PNFP facilities. JMS and NMS have an intimate interplay within the mainstream PFP sector in sourcing and supplying EMHS to the NMS and JMS. Both warehouses are also supplied by the local private market.

Uganda's public sector funding for its supply chain system benefits from direct investments from several external development partners, including Gavi, the Vaccine Alliance; the United Kingdom's Department for International Development; the United Nations Children's Fund; the United Nations Population Fund; the United States Agency for International Development (USAID); The Global Fund to Fight AIDS, Tuberculosis and Malaria (The Global Fund); and The World Bank.

Ugandans receive services from the public and private sectors. The public sector includes national and regional referral hospitals (RRHs); general hospitals (GHs); HCs II–IV; and community medicine distributors.[7] The private sector includes PNFP and PFP providers, traditional and complementary medicine practitioners, private manufacturers, distributors, wholesalers, private pharmacies, private hospitals, private clinics, and other private health-care providers. About half of health services and products come through the PFP sector.[8]

Health-care financing for Uganda's public supply chain system comes from the government, private sources, and development partners. The GOU continues to receive significant funding support from development partners for health commodities; according to the NPSSP III, more than 70 percent of funding for public sector health commodities is financed by development partners. Less than 10 percent of government expenditure is estimated to be spent on health. In 2015/16, the GOU spent 6.9 percent of the total budget on health (1,270.8 billion Ugandan shillings).[9] This translates to approximately 36 percent of health-care expenditures as out-of-pocket expenses for Ugandans, which is particularly burdensome for poor and vulnerable populations seeking health care.[10]

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[5] Of the total 947 PNFP facilities, 646 are faith-based and the remaining 301 are categorized as "other." JMS supplies all 646 faith-based PNFPs and an additional 223 "other" facilities for a total of 869 facilities.

[6] The EMHS credit line relates to the PHC vote accredited to 534 facilities (which includes faith-based and other facilities), all of which have accounts at JMS for EMHS ordering. Specific to HIV commodities, only 257 of the 646 faith-based PNFP facilities provide antiretroviral services. Of the 257 facilities, 118 are supplied by JMS and 139 by Medical Access Uganda Limited (MAUL), which is primarily funded by the U.S. Department of Health Services Centers for Disease Control and Prevention for HIV commodities. Of the 139 facilities, JMS also supplies them with all other EMHS (except for TB and vaccines, which are supplied by NMS to all eligible in the PNFP network).

[7] Ibid.

[8] Ibid.

[9] Ministry of Finance, Planning, and Economic Development 2015. Budget Speech Financial Year 2015/16

[10] Ibid.

The Quantification and Procurement Planning Unit (QPPU) within the MOH coordinates forecasting and supply planning at the central level. This includes liaising with all relevant partners, monitoring national stock levels, conducting quantification exercises, and identifying any supply gaps.[11]

Overview of the Supply Chain Assessment Activity

Under MOH leadership, USAID, The Global Fund, GHSC-PSM, and Uganda Health Supply Chain (UHSC) provided support for the requisite fieldwork for the National Supply Chain Assessment (NSCA) in Uganda from May 7 to May 30, 2018. The assessment provided results that identify strengths, potential bottlenecks, and opportunities within Uganda's public health supply chain (PHSC). Based on the findings, the GOU, in collaboration with key supply chain stakeholders, can prioritize areas for root-cause analysis and develop strategic and operational plans to strengthen the PHSC in Uganda. To this end, the assessment examined the capability and performance of Uganda's PHSC. The NSCA 2.0 includes three distinct elements: the supply chain mapping exercise provides a visual representation of the country's supply chain; the capability maturity model (CMM) measures the overall capability, resources, processes, and functionality of the country supply chain; and the key performance indicators (KPIs) are used to measure supply chain performance.

The primary objectives of this assessment were as follows:

- Measure PHSC performance and capability

- Analyze PHSC overall operational capacity and performance, identifying bottlenecks and opportunities for improvement

- Identify focus areas of opportunity for MOH planning and stakeholder coordination to inform the development of transformational plan(s) to guide future system strengthening investments

Funded by USAID and The Global Fund, the NSCA focused only on the Uganda health sector supply chain directly financed through GOU or public sector funding. In other words, the NSCA focused on the public sector — NMS and sites supplied by NMS — as well as the 534 PNFP sites supplied by JMS through the EMHS credit line. At the PNFP sites, the USAID-procured commodities were also included in the assessment.

The discussion is focused on providing interpretations of the results and translating them into recommendations for future supply chain interventions. The Summary of Findings and Conclusions sections highlight key takeaways and suggestions for future areas for analysis. The report annexes, contained in a second volume, provide the complete assessment tools and other detailed information.

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[11] Ibid.

Methodology

This section describes the methodology used to conduct the NSCA 2.0 in Uganda.

Over seven months, from September 12, 2017, through April 18, 2018, the assessment team engaged relevant in-country stakeholders to define the scope of work (SOW), determine the tracer commodities for the assessment, and train teams to reflect the national context. This approach also aimed to strengthen buy-in from the MOH, NMS, JMS, and other key supply chain stakeholders. The team used the NSCA 2.0 toolkit to guide data collection, storage, and analysis.

Scope of Work

The SOW required that the assessment team conduct a comprehensive assessment of the Uganda public sector health supply chain system at the following levels: central, district (intermediate), and service delivery, which included HCs II–IV, GHs, and RRHs. Exhibit 3 on the next page shows the list of all the sites where data were collected in May 2018.

The National Supply Chain Assessment Toolkit

The NSCA 2.0 is an updated toolkit that measures the capability, functionality, and performance of supply chain functions at all desired levels of a national health supply chain system. The toolkit includes three primary elements: supply chain mapping, the CMM tool, and the KPI assessment tool, as described in Exhibit 2.

Exhibit 2. Description of key elements of the NCSA 2.0 toolkit

Activity	Description
Supply chain mapping	The objective of mapping the health supply chain is to obtain an in-depth understanding of the health supply chain, including the roles and responsibilities of key supply chain participants.
CMM tool	The CMM diagnostic tool assesses capability and processes across functional areas and cross-cutting enablers (human resources (HR), financial sustainability, etc.) using interviews and structured direct observation.
Supply chain KPIs	The KPIs include a set of indicators that measure supply chain performance in selected functional areas.

Sampling

The sample frame consisted of GOU-owned facilities across the country that are supplied by NMS and PNFP facilities receiving public funding through the Primary Health Care fund and supplied by JMS inclusive of HIV commodities. Thus, the final sampling frame consisted of 2,024 HCs II, 1,105 HCs III, 177 HCs IV, 66 general hospitals, and 16 RRHs across 112 districts. Also, central-level entities — NMS, JMS, MOH, NDA, and the faith-based medical bureaus — were included.

The minimum sample size was determined using the hypergeometric sample size formula, assuming a margin of error of ±10 percent, and a 90 percent level of confidence (i.e., α=0.10) as the NSCA 2.0

guidance suggests. A two-stage sampling process was used (with selection of central facilities done separately). The sample size was initially calculated for the number of districts, and later calculated for the number of health facilities needed based on the above parameters, and assuming a design effect of 1.6. Districts were selected with the probability of inclusion in the assessment proportional to the number of health facilities in each district. Within each selected district, one HC II, one HC III, one HC IV (if available in the district), and one GH (if available in a district) were selected at random. If a selected district included RRHs, all RRHs in that district were included in the sample.

The final sample included 83 HCs II–IV, 16 GHs, and seven RRHs in 31 districts, plus four central-level entities. A total 143 sites were visited across 32 districts during the assessment (see Exhibit 3). Four districts, Bukwo, Kaabong, Kween, and Mayuge, were excluded from the sample frame due to weather-related difficulty in travel. National-level referral hospitals were not included in the assessment, as they were not considered an assessment priority.

Exhibit 3. Final number of sites assessed during the NSCA 2.0

Site level	Total number of 143 sites visited across 32 districts	Sampling frame
Central warehouse	2	2
Health centers II–IV	83	3,306
General hospitals	16	66
MOH or similar institution	4	4
District health offices	31	35
Regional referral hospitals	7	16

Team Composition and Training

Central-level and field teams were formed and trained to conduct this assessment. The central-level team included members from GHSC-PSM, USAID, and GFATM. At the subcentral sites, 20 two-person teams (40 members total) collected data. These teams included a mixture of pharmacists, nurses, clinical officers, and dispensers, all professionally affiliated with the MOH. Given the camaraderie and relationships developed during the training, individuals were invited to self-pair and ensure that each team had broad professional representation. Having national supply chain participants from varying backgrounds expedited access to key informants and data sources while promoting local ownership and buy-in of the assessment. To avoid potential bias, data collectors were not sent to their home or neighboring districts.

Data collectors attended a four-day training in Kampala from May 8 to 11, 2018, beginning with an overview of the objectives and methodology of the NSCA tool. Throughout the week, they were familiarized with the paper and electronic versions of the CMM and KPI modules. Facilitators reviewed the tracer commodities, facility selection, and use of the SurveyCTO electronic survey tool. Teams of data collectors conducted mock interviews before a half-day pilot exercise in nonparticipating health facility settings. On day three, enumerators piloted the NSCA tool using SurveyCTO to gain experience in and familiarity with electronic data collection and identify questions requiring revision. Tool revisions

and team assignments were completed on day four. See Annex 7 for the NSCA training agenda.

Limitations

Sampling

When sampling, balancing the competing interests of all possible avenues of analysis with resource considerations (time and money) requires making compromises in what can be assessed and to what level of disaggregation. The NSCA 2.0 focuses on drawing a nationally representative sample with an estimated error within 10 percentage points. This margin of error holds true for each of the six categories listed in Exhibit 3. However, this means that all health centers throughout the country, be they public or PNFP, were treated as one single group from which the sample was drawn. The sampling approach did not distinguish between HCs II, III, or IV. While there are clear benefits in examining differences between health center types, the sample size would have had to increase roughly two to three times its current size to allow for such comparisons. The sampling approach used in this assessment represents the best value for money, balancing sufficient statistical precision for meaningful analysis with the reality of budgetary constraints.

Interpreting CMM Scores and KPIs

The NSCA 2.0 uses a two-stage cluster-sampling approach designed to yield a maximum error of +/–10 percent. This approach was used to ensure a representative sample of public health facilities and to leverage statistical principles to extrapolate the findings back to the larger population of health facility entities in the country. The NSCA 2.0 data analysis template in its current format does not calculate standard error for the numerous variables assessed with the collected data. Without the standard error, the precision of the KPI or CMM module score value is unknown (but presumably <±10 percent).

While individual scores are meaningful, comparisons between two facility types for any CMM score or KPI is more challenging. Without calculated errors, any differences less than 20 percent (assuming the maximum possible error of ±10 percent) cannot be stated with complete confidence. Therefore, to err on the side of caution, this report will not attempt to interpret differences between facility types within a CMM module, unless the computed difference is greater than 20 percent. Each KPI will be examined individually, by facility type, within the context of that facility type, rather than drawing comparisons across the supply chain.

This does not imply that scores or KPIs are unimportant or the underlying data are not useful, but it is simply a function of sampling that limits the discrimination of small differences of scores because the precision is too low or unknown. In this case, making definitive statements about one score being higher than the other (unless the scores differ by more than 20 percent) is not appropriate. Note that the underlying questions asked in the CMM are still insightful and will help drive analysis and recommendations.

Assessing Peripheral Supply Chain Entities

The NSCA leveraged the collaborative nature of this assessment to interview as many public health entities as possible and ensure full stakeholder engagement during this assessment. This means that the medical bureaus as well as the NDA of Uganda were interviewed for the CMM modules. While key players in Uganda's public health system, these entities are not regular supply chain participants. Therefore, their scores are related only to their responsibilities within the supply chain and may not be indicative of their true maturity in their indigenous function within the Uganda public health system. This dynamic is further discussed in the appropriate sections for these entities.

Actual Versus Planned Sites Visited

Due to heavy rains and poor road conditions, two of the selected facilities, Gisozi and Kamirampango, were replaced (using random selection) before the start of data collection. Also, Kiruddu RRH was dropped due to its categorization as an annex of the larger Mulago Hospital. Given the proper sampling weight at the RRH level, the absence of Kiruddu will not adversely affect the overall representativeness of the sample drawn.

Procedures

Before data collection, the MOH emailed notification letters along with a list of study sites, informing district health officers (DHOs) that facilities in their districts had been randomly selected to participate in the NSCA. Letters were also sent directly to the selected facilities. DHOs were responsible for communicating the exercise to the main points of contact at each HC under their oversight. MOH also successfully secured special permission from the Chief of Medical Services of the Uganda People's Defense Force (UPDF) to access three military facilities. Throughout the data collection process, enumerators carried the notification letter, signed by the Director General of the MOH, along with letters informing facilities that they had been chosen and trained by the MOH to conduct the survey.

The central-level team collected data from JMS, NMS, and the MOH for items in the CMM and KPI questionnaires. The field teams collected data from HCs II–IV, GHs, RRHs, and the DHOs.

Over the course of the data collection period, from May 14 to 25, 2018, teams conducted two surveys at each health facility: the capability questionnaires and the KPI assessment.
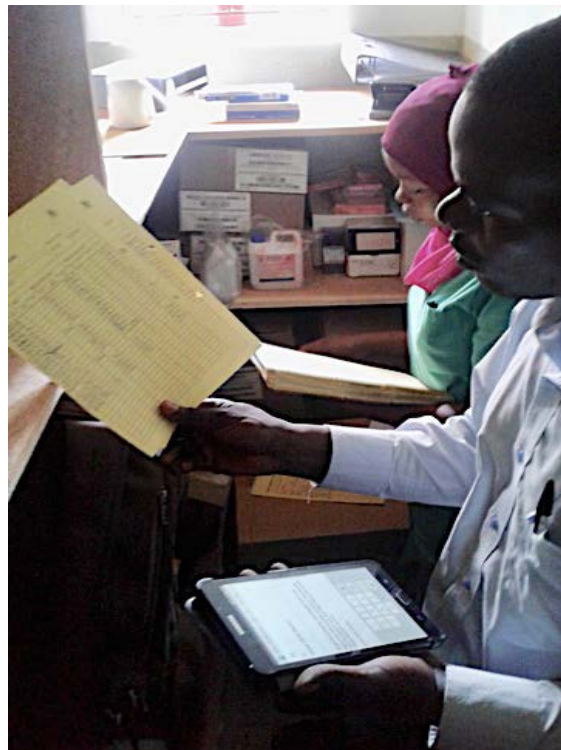
Enumerators verifying KPI data (photo credit: Meaghan Douglas, USAID)

Capability Maturity Model

The CMM measures the capability and functionality of the supply chain based on 11 functional areas using interviews and direct observation. Each of the 11 questionnaires also has a supervisory interview to validate results and verify supporting documents. Only relevant modules were assessed at specific sites. Relevance was determined by consultations with Ugandan counterparts to understand what supply chain functions are expected at different facility types throughout the system.

The capability questionnaires were completed by interviewing one or more people at each site best suited to respond to each module based on the respondent's area of operation (i.e., stock manager and/or health facility manager). As part of that tool, documentation confirmation (e.g., logistics reports, requisitions forms) and direct observations (e.g., storage space for health commodities) were captured. Depending on the questionnaire, on average, one to two hours were needed to complete each capability questionnaire, including documentation verification. Data were collected electronically using the SurveyCTO[12] platform on individual tablets.

Exhibit 4 provides an overview of functional areas that were addressed in the capability questionnaire by type of facility. Annex 5 provides a map of the geographic coverage of sites assessed, and Annex 1 includes a complete list of the facilities assessed.

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[12] https://www.surveycto.com/

Exhibit 4. CMM functional area by level in the Uganda supply chain system

No.	Functional modules assessed	MOH	NMS	JMS	DHOs	RRHs	GHs	HCs II–IV	Medical bureaus	NDA
1	Strategic Planning and Management	√	√	√		√			√	√
2	Human Resources	√	√	√	√	√	√	√	√	
3	Financial Sustainability	√	√	√		√	√	√		
4	Policy and Governance	√	√	√	√	√				√
5	Quality and Pharmacovigilance (QPV)		√	√		√	√	√		√
6	Forecasting and Supply Planning	√	√	√		√				
7	Procurement and Customs Clearance		√	√		√				
8	Warehousing and Storage		√	√		√	√	√		
9	Distribution		√	√						
10	LMIS	√	√	√		√	√	√		
11	Waste Management	√	√	√		√	√	√		√

Key Performance Indicators

KPIs are used to measure current supply chain performance. The assessment team used the KPI assessment tool to collect quantitative data for a core set of indicators that are aligned with international standards for health supply chain management, as shown in Exhibit 5. Data sources included stockcards, logistics management information system (LMIS) and electronic LMIS (eLMIS) reports, invoices, orders, proof of delivery notes, temperature excursion data, and dispatch notes. Some of the documentation data were retrospectively collected for the six months before the assessment to better illustrate the consistency of past performance.

At the field level, data to support the calculation of KPIs were collected electronically using the SurveyCTO platform on individual tablets. However, due to the number of KPIs and the quantity of data points assessed at NMS and JMS, the central-level team created an Excel data collection tool that mimicked the KPI data collection form on SurveyCTO for data collection at JMS and NMS. The team developed an Excel spreadsheet and shared it with JMS and NMS, and staff were asked to assist in completing the KPI verifications. Over a week, the central-level data collection team visited NMS and JMS to conduct data validation and data quality checks. After completing data entry in Excel, the team reentered data into SurveyCTO for data cleaning, analysis, and standardization.

	KPI (sample names)	NMS	JMS	RRH	GH	HCs II–IV
1	SATP	√	√	√	√	√
2	Stockout by tracer, by level on day of assessment	√	√	√	√	√
	Stockout days for 182-day period by tracer, by level			√	√	√
	Average number of days per month with a stockout, given there was a stockout			√	√	√
	Percentage of facilities with any stockout of any tracer commodity in the period (Nov. '17 to Apr. '18)			√	√	√
3	Stockcard accuracy	√	√	√	√	√
4	eLMIS accuracy: percentage of facilities at 100 percent	√	√	√		
	eLMIS accuracy: average deviation from 100 percent across facilities			√	√	√
5	Wastage from damage, theft/expiry	√	√	√	√	√
6	On-time order rate			√	√	√
	Order fill rate	√	√			
7	Emergency orders as a percent of total orders placed	√				
8	Temperature excursions	√	√	√	√	√
9	Facility reporting rates (from lower levels)	√	√			
10	Forecast accuracy	√	√			
11	Supply plan accuracy	√	√	√		
12	Vendor on-time delivery (OTD)	√	√			
13	Source of funds data	√	√			
14	Percentage of international reference prices paid	√	√			
15	Staff turnover rate	√	√	√	√	√
16	Percent of key positions vacant	√	√	√	√	√
17	Percent of product selection based on the National Essential Medicines List (NEML)	√	√			

In collaboration with the MOH, NMS, and JMS, the tracer commodities shown in Exhibit 6 were selected for the NSCA based on the following criteria: they are a fair representation of the different commodity types that can be found in the Uganda PHSC, provide enough information for the MOH to make decisions, represent a unique supply chain challenge, represent unclear reporting channels resulting in critical challenges, and are available, at least to the HC III level, according to Uganda's EMHS list.

Exhibit 6. Tracer commodities

	Product name	Strength/dosage	Product category
1.	Tenofovir/lamivudine/efavirenz	600mg/300mg/300mg tablet	Antiretroviral
2.	Male condoms	Single condom	Reproductive, maternal, newborn, child and adolescent health (RMNCH)
3.	Malaria RDTs	Test	Malaria
4.	Long-lasting insecticidal nets	Net	Malaria
5.	Rifampicin/INH/pyrazinamide/ ethambutol	150/75/400/275mg	TB
6.	Depot medroxyprogesterone acetate intramuscular	Vial	RMNCAH and family planning
7.	ORS + zinc	Sachet	RMNCAH
8.	Tetanus toxoid	Vial	RMNCAH and voluntary medical male circumcision
9.	Oxytocin international units	Vial	RMNCAH
10.	ACTs (AL) 6x4	20/120mg	Malaria
11.	Amoxicillin 250mg capsule	250mg capsule	EMHS
12.	Metformin 500mg tablets	500mg	EMHS
13.	Determine HIV RTK	Test	HIV

Data Management

Each enumerator was provided with an individual tablet programmed with SurveyCTO to electronically collect, enter, and upload data. All completed CMM and KPI questionnaires were uploaded daily to the SurveyCTO secure data server after conducting daily quality checks. Original copies of the collected data were held on SurveyCTO's server. While both enumerators on a field team used tablets to collect data, each enumerator collected data on different modules, ensuring that only one completed collective survey was uploaded per site. A monitoring and evaluation (M&E) advisor from Abt Associates or GHSC-PSM reviewed, verified, and uploaded data daily. This served to verify that all answers were correctly coded and nonresponse data points were removed, facilitating more efficient analysis. Further, the frequency of this data review (sometimes referred to as "cleaning") enabled identification of unexpected issues, which were systematically addressed. After the daily review, data collection teams were immediately contacted (often through WhatsApp by a central-level point of contact) to clarify discrepancies in, or questions related to, the uploaded data.

SurveyCTO exports data using a comma-separated values format. Data analysis workbooks were coordinately designed in Microsoft Excel to leverage this format. This minimized the data transformation process, streamlined data cleaning, and significantly increased automation of KPI calculation during data analysis. By using coding values that created clear "signal spikes," nonresponse values were easily identified by the values populating a summary metrics page. The data analysis workbooks also produced charts, graphs, and data dashboards to enable top-line analysis that contributed to field-based debriefs for local stakeholders. Results will be discussed by examining all three components of the data collection: the supply chain map, the CMM interviews, and the KPI data collected.

First, the supply chain map produced during the mapping exercise will be explained, showing the flow of commodities and information (see Exhibit 8). The map presentation is followed by an overview of CMM results and a summary of the 22 KPI results. Results and findings are then detailed for each functional area and then for each level of service. For each of the 11 functional areas included in the CMM questionnaire, results are presented as follows: 1) CMM score, broken down by level of maturity, 2) key capability achievements, and 3) key capability gaps. Key capabilities and gaps are discussed only when they convey actionable information. For warehousing and storage, distribution, LMIS, and HR modules, relevant KPI metrics have been included.

Discussion and recommendations specific to the function or service level follow the presentation of findings.

Supply Chain Mapping

All NSCA 2.0 implementations include, as a first step, a comprehensive and participatory mapping of the national supply chain. The objective is not only to obtain an in-depth understanding of its structure and processes but also to create an opportunity for key stakeholders to contribute meaningfully to this assessment. This activity goes beyond connecting lines from one administrative level to the next. It defines and elaborates the roles and responsibilities of key participants all along the supply chain as well as business rules within the national supply chain (min and max levels, ordering processes) and any rule-breaking commodities. Information was gathered on all components of the supply chain and how they are interconnected. This map is not an operational map of the supply chain; rather, it helps delineate individual commodities and where they flow to. Commodities are often transported together to maximize efficiency, and these dynamics are not reflected in the map. Exhibit 7 illustrates the organization and elements within the Ugandan supply chain as well as the flow of commodities and information through the system.

To map the supply chain, a one-day supply chain mapping workshop was conducted in Kampala on May 7, 2018, with representatives from the MOH and other government representatives, NMS, JMS, implementing partners, and development partners (see Annex 8a, 8b, 8c for the workshop slides, agenda, and final participant list). Participants were divided into eight working groups, with representatives from different organizations. Each group was asked to discuss and develop a comprehensive commodity flow map from the manufacturers to the service delivery level. These maps were later consolidated by the central-level assessment team to develop the information and commodity flow map for Uganda's public health commodities. The final version presented here has been reviewed and endorsed by the MOH.

Uganda's PHSC has four tiers, which align with the governance structure.

Exhibit 7. The four tiers of Uganda's public health supply chain

Central level
- Ministry of Health
- National Drug Authority
- National Medical Stores
- Joint Medical Stores
- Medical Access Uganda, Limited
- Uganda Health Marketing Group

Tier II
- District Health Offices
- Regional referral hospitals
- District hospitals

Tier III
- Government-managed health centers (II-IV)

Tier IV
- Private not-for-profit health centers
- Private for-profit health centers

Notable characteristics of this map include the large number of participants involved in Uganda's public sector supply chain; the number of sources procuring the same commodities; the appearance of parallel supply chains; the facilities' ability to transfer commodities within the same level; and NMS's and JMS's ability to inter-transfer commodities between warehouses (see Exhibit 8). At the district level, a third-party logistics provider is used for distributing health commodities down to government-run HCs II–IV, while hospitals are directly supplied by NMS. *This assessment focused only on the public supply chain system directly financed by GOU (or public funds) to support central-level warehouse, storage, and distribution to the facility level.*

Exhibit 8. Uganda's commodities and information flow

Legend

- → Family planning/Reproductive health
- → Nutrition
- → Tuberculosis
- ▢ Supply Chain included in this NSCA
- ⇢ Information
- → Vaccines
- → ARVs
- ⇢ 3PL
- → Essential Medicines/Malaria
- ↔ Inter-Facility Transfer
- → Laboratory Commodities
- ▢ Supply Chain excluded from this NSCA
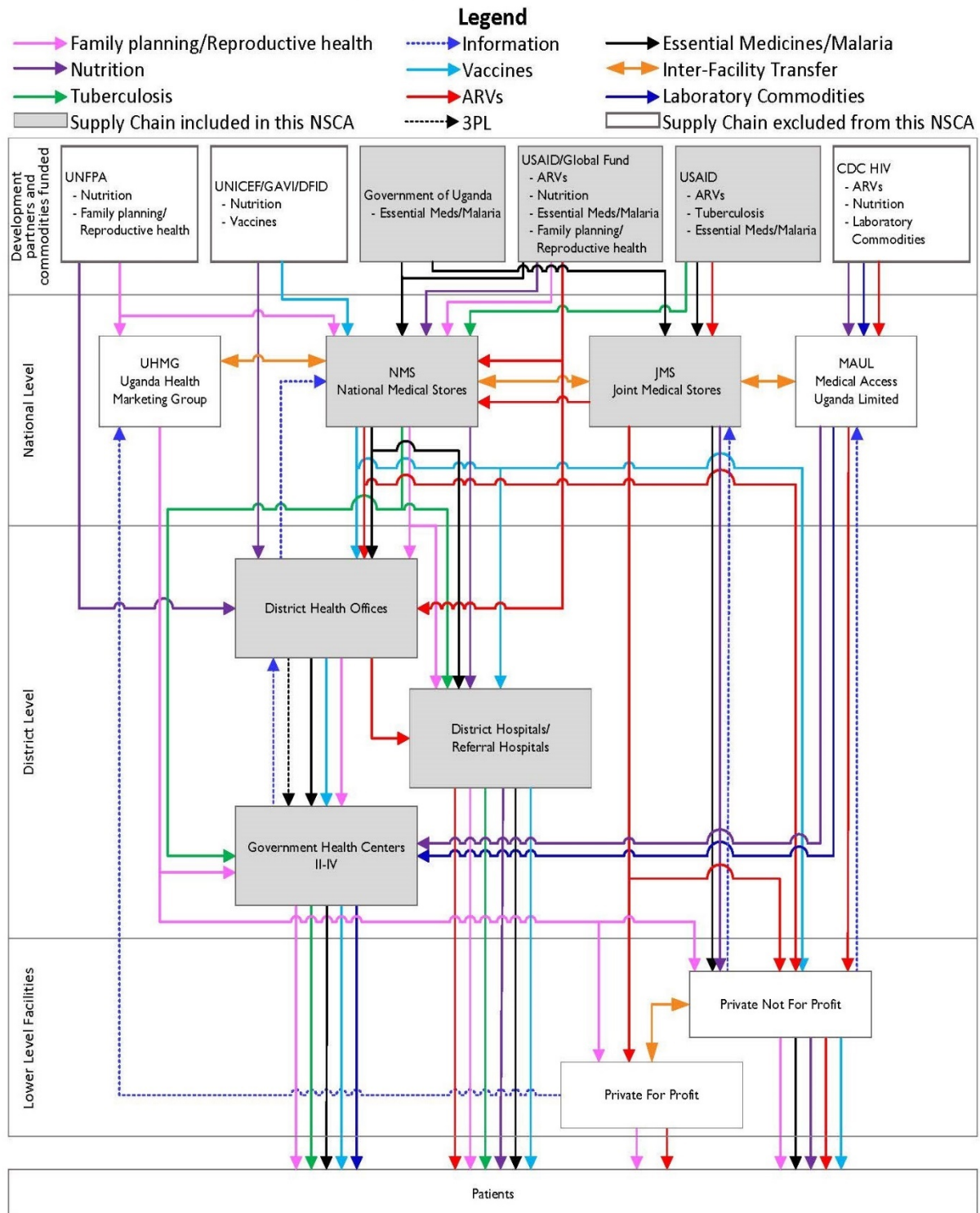
Understanding the CMM Results

A review of the CMM results presented below must consider how the scoring was completed. The capability and processes were assessed based on a maturity model, adapted from private-sector best practices to fit the public health context. For more information on how international benchmarks were considered in designing the CMM modules, review the NSCA 2.0 toolkit. Within each functional module, each question (or item) assessed has one of four maturity levels assigned to it, ranging from basic to state of the art (SOA); the overall CMM score for this module is the sum of scores at each maturity level. Exhibit 9 provides an overview of each level of maturity, its definition, and its overall contribution to the functional area's overall CMM score.

This functional area overall CMM score is a composite derived from results of the questions across the maturity levels. Of a total possible 100 percent CMM score, **basic** items contribute 50 percent, **intermediate** items 30 percent, **advanced** items 15 percent, and **SOA** items 5 percent. The scores are not directly interpretable — e.g., a score of 50 percent does not indicate that all the basic items are in place in all facilities. However, the scores are comparable across the functional areas. The components that make up the basic level are scored separately from those associated with the intermediate level; the scoring is done this way to recognize that even within a function, maturity levels may be mixed. The overall score for a single function is a composite of all basic, intermediate, advanced, and state-of-the-art scores. An overall maturity score for intermediate, then, does not necessarily indicate that every aspect of that function has achieved that level of maturity.

Exhibit 9. Definitions of level of maturity and contribution to the overall CMM score

Level of maturity	Definition	Maximum contribution to the CMM score (100 percent of total)
Basic	These are the **must-have** policies, structures, processes, procedures, tools, indicators, reports, and resources to operate a supply chain system (e.g., a stockcard as a tool for inventory management).	50 percent
Intermediate	These are not must-haves but are **intermediate**-level policies, structures, processes, procedures, tools, indicators (e.g., an Excel sheet).	30 percent
Advanced	These are **nice-to-have** policies, structures, processes, procedures, tools, indicators, reports, and resources to operate a supply chain system (e.g., Rx solution, a dispensing and stock management electronic tool).	15 percent
State of the art	These are nonessential SOA policies, structures, processes, procedures, tools, indicators, reports, and resources for a supply chain system (e.g., an enterprise resource planning system for stock management and control).	5 percent

Capability achievements and gaps are also presented for each module in tabular form.

The key capability achievement tables detail the most significant results related to positive achievement, as defined by the data, indicating ≥80 percent of facilities having the specific feature under inspection. Similarly, the key capability gaps tables represent results from a selection of questions that indicated key gaps within the supply chain management (SCM) system, as defined by ≤20 percent of facilities responding positively.

The capability gaps tables also identify possible solutions for addressing the gaps highlighted by the data. However, further analysis is required to confirm the root cause.

Overall Results (Summary Tables)

Capability Maturity Model Scores

Exhibit 10a shows the CMM scores for the 11 different modules, and Exhibit 10b shows the heatmap visualization of the CMM scores

Exhibit 10a. Average CMM score (with range of scores where applicable) presented by level of facility for each functional module)

Module	HCs	GHs	MOH	DHOs	RRHs	NMS	JMS	Medical bureau	NDA
	n = 83	n = 16	n =1	n = 31	n = 7	n= 1	n = 1	n=1	n=1
Forecasting and Supply Planning			77 percent		35 percent (26–44 percent)	78 percent	57 percent		
Procurement and Customs Clearance					60 percent (39–75 percent) *	80 percent	69 percent		
Warehousing and Storage	38 percent (26–59 percent)	47 percent (29–61 percent)			50 percent (44–55 percent)	77 percent	79 percent		
Distribution						82 percent	60 percent		
Waste Management	36 percent (4–75 percent)	44 percent (15–77 percent)	23 percent		23 percent (3–45 percent)	75 percent	81 percent		76 percent
Strategic Planning and Management			66 percent		27 percent (0 percent to 60 percent)	80 percent	68 percent	79 percent	87 percent
HR	48 percent (12–73 percent)	60 percent (38–77 percent)	56 percent	47 percent (26–66 percent)	47 percent (2–62 percent)	65 percent	72 percent	55 percent	
Financial Stability	55 percent (13–82 percent)	65 percent	56 percent		66 percent	70 percent	81 percent		

	(54–86 percent)		(51–79 percent)				
Policy and Governance	*gray*	57 percent	25 percent (6–63 percent)	20 percent (6–83 percent)	68 percent	64 percent	26 percent
Quality and Pharma-covigilance	18 percent (0–50 percent)	21 percent (0–51 percent)	*gray*	24 percent (4–45 percent)	62 percent	92 percent	57 percent
LMIS	60 percent (36–89 percent)	55 percent (39–69 percent)	37 percent	56 percent (40–77 percent)	63 percent	56 percent	*gray*

Note: Gray indicates module not assessed because it is not applicable to that level of the supply chain.

*RRHs can procure commodities on their own.

Exhibit 10b. Heatmap visualization of CMM scores

Module	Level of the supply chain								
	Health Centers II, III, IV	General Hospital	MoH	DHO	Regional Referral Hospital	NMS	JMS	Medical Bureau	NDA
	n = 83	n = 15	n = 1	n = 30	n = 8	n = 1	n = 1	n = 2	n = 1
Forecasting and supply planning									
Procurement and customs clearance									
Warehousing and storage									
Distribution									
Waste management									
Strategic planning and management									
Human resources									
Financial sustainability									
Policy and governance									
Quality and pharmacovigilance									
Logistics management									

White cells indicate that data not applicable or not available

Low score   50%   High Score

These results show the average and the range for performance across the 11 supply chain functions and facility. Performance varies widely across the different supply chain levels. Aside from a few scores at the MOH, NMS, and JMS, most facilities scored less than 80 percent for all 11 supply modules, indicating the need to strengthen all supply chain functions. Service delivery points (SDPs), which include HCs II–IV, GHs, and RRHs, scored the lowest across all supply chain functions. The procurement and customs clearance and distribution function at NMS scored notably higher (80 percent and 82 percent, respectively), while JMS received high capability scores for pharmacovigilance at 92 percent, followed by financial sustainability and waste management, both at 81 percent.

Select KPIs

Exhibit 11a summarizes eight selected KPIs. KPIs that were not assessed at a certainty entity are marked with a dash.

Exhibit 11a. Average key performance indicator scores by level for selected KPIs (with ranges, where applicable)

Indicator	HCs	GHs	RRHs	NMS	JMS	DHOs**
	n=83	n=16	n=7	n=1	n=1	n=31
SATP	25 percent (13–36 percent)	23 percent (5–61 percent)	24 percent (7–45 percent)	59 percent (29–86 percent)	33 percent (0–43 percent)	----
Avg. stockout rate on day of assessment	22 percent (8–46 percent)	11percent (0–32 percent)	11 percent (0–31 percent)	0 percent	0 percent	0 percent
Avg. stockout days for 182-day period (Nov. '17 to Apr. '18)*	17.9 (4.5–42.4)	9.8 (0.4–18.7)	16.1 (0.0–39.9)	----	----	2.4
Average number of days per month with stockout, given that there was a stockout	6.4 (2.1–13.9)	4.3 (0.5–10.5)	6.3 (1.1–12.5)	----	----	2.4 (2.4–2.4)
Percentage of facilities with any stockout of any tracer commodity in the period (Nov. '17 to Apr. '18)	92 percent	90 percent	100 percent	----	----	24 percent
Stockcard accuracy	55 percent	65 percent	41 percent	----	----	19 percent
eLMIS record accuracy***	33 percent	21 percent	19 percent	97 percent	119 percent (94–138 percent)	----
Emergency orders as a percent of total orders	0 percent	3 percent	1 percent	3.4 percent	----	----

The first number in this table refers to the average number of days the commodity was out of stock across the facilities from November 2017 through April 2018, a period of 183 days. The number in parenthesis is the percentage of days the commodity was out of stock, on average. Thus, 6.6/183 = 3.6 percent.
*** DHOs were assessed only for the tetanus toxoid vaccine.*
****Record accuracy was assessed with a physical count of stock on the day of the visit.*
A dash implies that the indicator was not collected at that level, whereas a zero implies the true value of that indicator is zero.

SATP of tracer commodities is poor across all supply chain tiers, with averages of 33 percent and below, except for NMS. NMS has a better SATP average at 59 percent, but a wide range of 57 percentage points between the tracer commodities. Refer to Exhibit 11b for SATP figures, by product and by facility type. SATP refers to the number of stock observations where the stock level observed lies between the established maximum and minimum acceptable levels of stock. These are normally determined by historical consumption. Average stockout rates of tracer commodities on the day of assessment increased through supply chain tiers, with 0 percent at the central levels, 11 percent at GHs and RRHs, and 22 percent at the HCs. Stockcard and eLMIS record accuracy was lowest at the RRHs, with HCs demonstrating higher eLMIS record accuracy (33 percent) than both tiers of hospitals (GH = 21 percent, RRH = 19 percent). However, all KPI metrics below the central level are generally poor.

Exhibit 11b. Stocked according to plan, by tracer commodity and facility type

	Facility type	HC	GH	RRH	NMS	JMS
	n=	83	16	7	7	7
1	Tenofovir/lamivudine/efavirenz	28 percent	25 percent	45 percent	29 percent	43 percent
2	Male condoms	26 percent	5 percent	7 percent	43 percent	
3	Malaria RDTs	13 percent	19 percent	10 percent	43 percent	43 percent
4	Long-lasting insecticidal nets	29 percent	29 percent	21 percent		29 percent
5	Rifampicin/INH/pyrazinamide/ ethambutol (RHZE)	18 percent	33 percent	34 percent	43 percent	
6	Depot medroxyprogesterone acetate intramuscular	23 percent	22 percent	33 percent		
7	ORS + zinc	36 percent	20 percent	21 percent	86 percent	0 percent
8	Tetanus toxoid	18 percent	10 percent	13 percent	71 percent	43 percent
9	Oxytocin international units	24 percent	21 percent	25 percent	86 percent	14 percent
10	ACTs (AL) 6x4	21 percent	22 percent	18 percent	71 percent	14 percent
11	Amoxicillin 250mg capsule	25 percent	25 percent	21 percent	71 percent	0 percent
12	Metformin 500mg tablets	34 percent	61 percent	42 percent	57 percent	0 percent
13	Determine HIV RTK	30 percent	8 percent	21 percent	57 percent	
	Average	25 percent	23 percent	24 percent	59 percent	33 percent
	Range	13–36 percent	5–61 percent	7–45 percent	29–86 percent	0–43 percent

The low KPI indicator of emergency orders placed as a percentage of total orders, ranging from 0 percent at HCs to 3.4 percent at NMS, may be misleading, as the system is designed to be a kit system for lower-level facilities where each district is provided a customized kit based on the district's needs. Moreover, the facilities have an ad hoc system of commodity transfers between sites to avoid emergency orders. These emergency orders may be anomalies from the normal operations. The metric may therefore not fully capture a health facility's need for emergency orders.

By Functional Module: Overall Capability Maturity Model and KPI Results

The following results, along with Exhibits 12 and 13, highlight some of the key findings from the assessment of the 11 supply chain functions. Results of the CMM scores are presented by level and followed by KPIs (where applicable). Where relevant, key capabilities and gaps are further elaborated to convey meaningful information.

In the functional module subsections below, the following results are presented:
- KPIs (where applicable)
- Breakdown of CMM scores by level of achievement
- Key capabilities, key gaps
- Tracer commodity figures (where applicable)

Strategic Planning and Management

The strategic planning and management section seeks to determine if health supply chain levels are aware of and using an existing strategic plan, in accordance with the NPSSP III, to ensure that each level is monitoring its own performance to improve. Strategic planning and management are the purview of the MOH, but all health system levels are responsible for understanding their role in the strategic plans. Major areas that were factored into the scoring for this CMM module are the existence of strategic plans, appropriate monitoring mechanisms such as formal oversight committees that have broad stakeholder inclusions, and clear plans for private sector engagement.

Exhibit 12. Strategic planning and management CMM score per maturity level (by SC level)
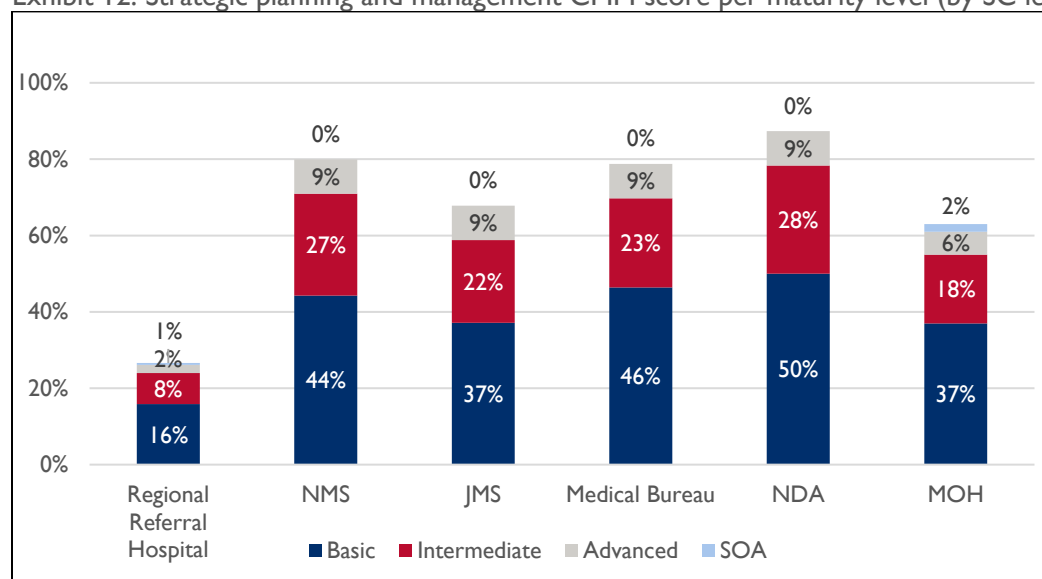
Maximum scores: Basic 50 percent; Intermediate, 30 percent; Advanced, 15 percent; State of the Art, 5 percent. For instance, if the Basic portion is actually 45 percent, it should be interpreted as 45/50. See Exhibit 9 for more detail on CMM scores.

Exhibit 13. Strategic planning and management key capability gaps

Key capability gaps for the RRH level	Percent of facilities achieved	Possible solutions
Percentage of facilities that include LMIS in their supply chain strategic plan	0 percent	Advocate for and ensure inclusion of LMIS in the supply chain strategic plan
Percentage of facilities that monitor implementation of their supply chain strategic plan	27 percent	Institute periodic reviews and stand up as a review board to ensure that the supply chain strategic plan is implemented in all facilities

Summary of results and discussion

The strategic planning and management score of 87 percent is highest at the NDA, the regulatory agency for medicines, achieving a maximum possible value of 50 percent for basic items and 28 percent of a possible 30 percent for the intermediate. The NDA has a comprehensive supply chain strategic plan that includes all appropriate components. The plan is reviewed and updated every three years and monitored quarterly to ensure progress is meeting expectations.

Scores at NMS and the medical bureaus for the basic items are also high, with 44 percent and 46 percent of a maximum of 50 percent, respectively. NMS has a comprehensive supply chain strategic plan with all appropriate components included; the only notable exception is waste management, which was missing from the document. The NMS plan is reviewed and updated every three years and monitored annually to ensure progress in meeting expectations. The medical bureaus were missing only a few items to have a complete basic score: a performance monitoring plan and the identification of specific services from strategic private sector partnerships in their operational plan.

JMS has scored well at 68 percent but not quite hitting the 80 percent benchmark. A notable difference between JMS and NMS is an operational plan that includes a stakeholder map and SWOT analysis. Additionally, while a formal strategy is in place for engaging strategic partnerships with the private sector, it is not integrated into the operational plan.

At the RRHs, however, the score is much lower (27 percent), with only 16 percent of the 50 percent for the basic items. Less than half (40 percent) of the RRHs have a copy of the approved NPSSP. Furthermore, only 13 percent of RRHs reported that they have a strategic supply chain plan and that reforms identified in their plans are being implemented. These results suggest a need for improved strategic planning and management at the RRHs. Those with supply chain strategic plans have key components missing: 0 percent include LMIS, and only 13 percent include M&E. Downstream outcomes of high-level strategy and planning deficiencies at RRHs are visible when examining other modules later in the report.

Recommendations

- Develop strategic plans for RRHs with assistance from the MOH. Align any plans developed with the MOH's overall strategic vision and direction. Further root-cause analysis at the RRHs can help identify possible reasons for the low scores.

- Provide further technical assistance to the RRHs so that strategic plans can map out improvement plans for poor performance in other functional areas, such as stock management and LMIS record keeping.

- Ensure JMS has a multiyear operational plan that ties in its partnerships and strategic goals so that the operations contribute to those strategic goals.

Human Resources

The human resources section seeks to ensure that facilities have the needed resources and staff have the necessary training, knowledge capacity, time, and scope to support the supply chain. Exhibit 14–16 present HR results. Major areas that were factored into the scoring for this CMM module are existence of supply chain–specific recruitment policies, appropriate supply chain functions in job descriptions, regular capacity-building efforts for staff, and mechanisms for supportive supervision and performance improvement.

Exhibit 14. Human resources CMM score per level of achievement per maturity level (by supply chain level)
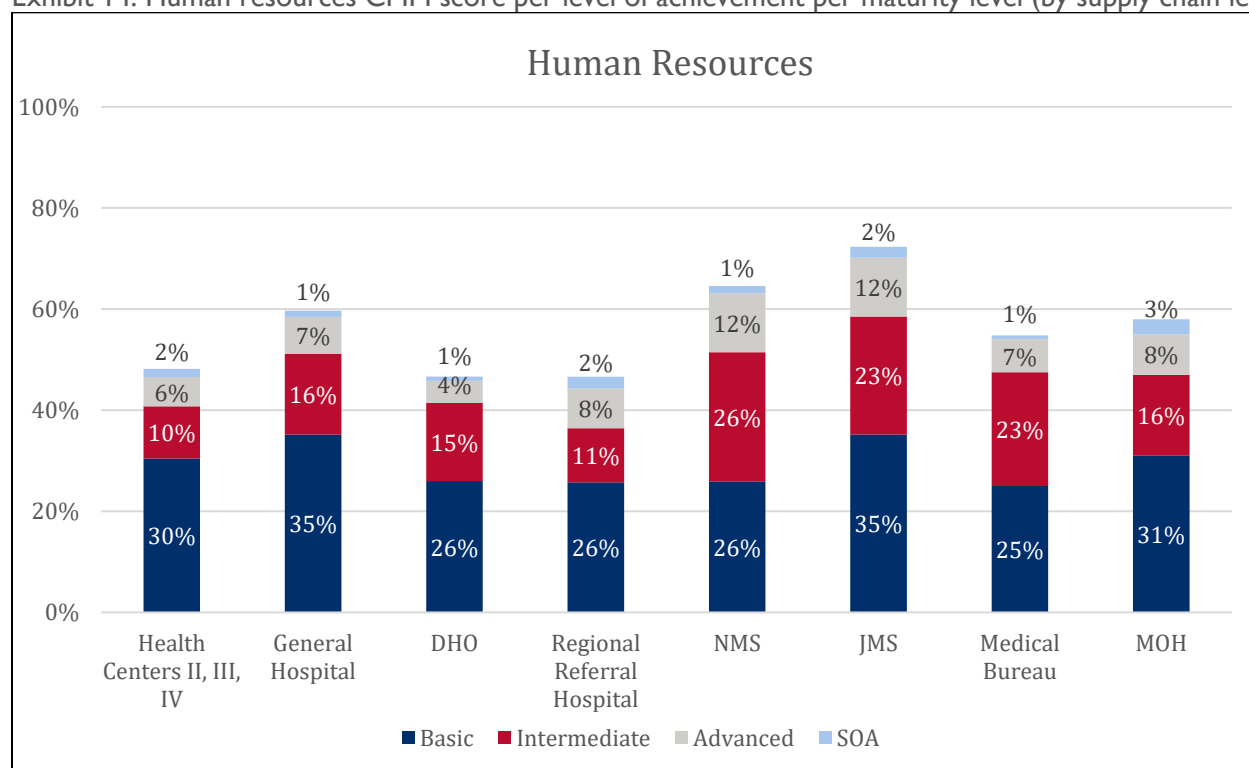
Maximum scores: Basic, 50 percent; Intermediate, 30 percent; Advanced, 15 percent; State of the Art, 5 percent. For instance, if the Basic portion is actually 45 percent, it should be interpreted as 45/50. See Exhibit 9 for more detail on CMM scores.

Exhibit 15. Human resources KPI score by level

Indicator	HCs	GHs	RRHs	NMS	JMS
n=	83	16	7	1	1
Average number of supply chain positions	2.4	7.7	12.1	220	24
Staff turnover ratio	17 percent	0 percent	5 percent	5.4 percent	6 percent
Percentage of position vacant	23 percent	55 percent	27 percent	10 percent	0 percent
Average percentage of staff seconded	7 percent	11 percent	2 percent	----	----

Exhibit 16. Key capability gaps, human resources

Gaps	Percent of facilities achieved	Possible solutions
HC level		
Percentage of facilities that include ordering and reporting in job descriptions for pharmacy and store personnel	6 percent	Advocate for including ordering and reporting in the job descriptions of all pharmacy and store personnel and conduct trainings accordingly
Percentage of facilities that had 50 percent or more of their staff participate in capacity-building programs in the last year	16 percent	Advocate for including all staff in capacity-building programs and allow staff the time to participate in them
RRH level	17 percent	0 percent
Percentage of facilities that have any type of staff recruitment policy in place	33 percent	Advocate for leadership at each facility to develop and implement staff recruitment policies
Percentage of facilities that identified finances as a critical barrier to implementing supply chain capacity-building programs	100 percent	Advocate for GOU to increase resource allocation to support capacity-building programs

Summary of results and discussion

None of the facilities assessed scored above 80 percent. JMS and GHs scored the highest basic scores, at 35 percent, followed by HCs II–IV with a score of 30 percent. RRHs, DHOs, and NMS scored only 26 percent for the basic items. The HCs II–IV and RRHs have an aggregate maturity score of less than 50 percent. Overall low scores for the HR capability maturity highlight a lack of sufficient human resources

to support supply chain functions at all levels. The KPI scores further corroborate the capability scores; more than half of the supply chain positions (55 percent) are vacant at the GHs, followed by approximately a quarter at HCs II–IV and the RRHs. The staff turnover rate is particularly high at HCs II–IV, at 17 percent. NMS counted all staff members across different functions, from the truck driver to the forklift personnel, in their supply chain personnel roster, while JMS counted only key supply chain staff involved in making management decisions on behalf of JMS.

While the highest basic score is only 35 percent out of the maximum 50 percent, all levels scored at least 1 percent for the SOA items, out of the possible 5 percent. This suggests that although facilities have not yet achieved a basic score, all have at least some SOA requirements. Also, JMS, NMS, and the NDA scored between 23 percent and 26 percent for the intermediate items (out of 30 percent), indicating varying maturity at these facilities. At the RRHs, none of the sites has a staff recruitment policy for supply chain positions, and only a third have a general recruitment policy applied specifically to supply chain positions. Similarly, none of the RRHs includes supply chain functions in their personnel job descriptions. These results underscore the importance of conducting an in-depth, root-cause analysis to better understand the reasons for low HR scores across *all* levels, with special emphasis on the service delivery sites. Targeted interventions to address basic-level deficiencies would be the best approach for rapid improvements at this level.

Recommendations

- Review other recent in-country HR analyses and identify gaps between the reports suitable for a root-cause analysis to better understand the low HR scores across all levels, with emphasis on service delivery sites (HCs II–IV, GHs, and RRHs).

- Retain and train staff, especially at HCs II–IV, on waste management practices, stock management, LMIS record keeping, and pharmacovigilance (PV) reporting practices. Develop and deploy recruitment, training, and retention strategies to ensure trained staff retention.

- Develop and/or review job descriptions for all supply chain positions and make them available to all relevant staff.

- Increase supply chain dedicated staffing levels at GHs and RRHs, as they have the biggest workforce gaps.

- Support the MOH in realizing its current HR staffing norms for the health sector and develop a strategy for incremental funding by the GOU to MOH and local governments to sustain appropriate levels of HR in the longer term.

Financial Sustainability

The financial sustainability section seeks to ensure that supply chain operations are sufficiently funded, that facilities practice good financial management techniques, and that any financing gaps are identified. Exhibits 17 and 18 show financial sustainability results. This CMM module places greater emphasis and scoring value on prudent financial management and understanding operating costs rather than the self-sufficiency of the entity to finance itself. While it is difficult to get a high score without being self-sufficient, the intent of the module is to understand how facilities manage the funds they receive.

Exhibit 17. Financial sustainability CMM score per level of achievement by level
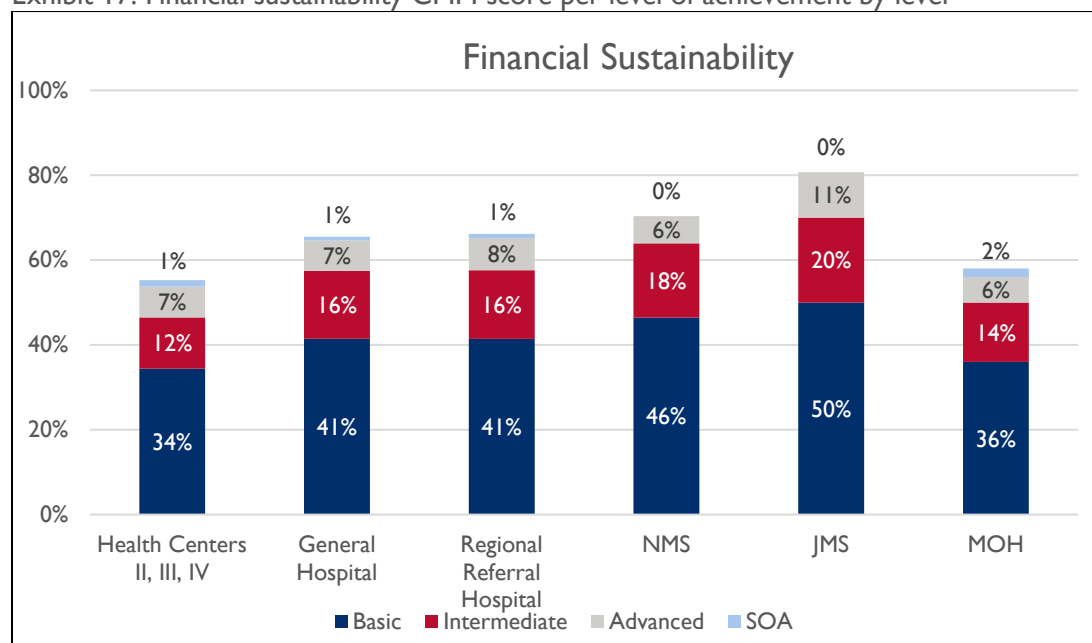
Maximum score for Basic is 50 percent; for Intermediate, 30 percent; for Advanced, 15 percent; for State of the Art, 5 percent. For instance, if the Basic portion is actually 45 percent, it should be interpreted as 45/50. See Exhibit 9 for more detail on CMM scores.

Exhibit 18. Key capability gaps, financial sustainability

Gaps	Percent of facilities achieved	Possible solutions
RHH level		
Percentage of facilities that had a budget shortfall for health commodities	40 percent	Advocate for larger budgets at the highest levels of the MOH and train facility management to develop, monitor, and adapt budgets more proactively
HC level		
Percentage of facilities that had a budget shortfall for health commodities	42 percent	Advocate for larger health facility budgets at the highest levels of the MOH to ensure that shortfalls do not occur in the future
Percentage of facilities that have a funding strategy explicitly including supply chain costs	6 percent	Advocate for a larger portion of the health facility budgets to be explicitly allocated for supply chain costs

Summary of results and discussion

Apart from JMS (81 percent), whose governance policies are designed to ensure financial solvency, overall capability maturity scores across all facility types are below 80 percent, with HCs II–IV at 52 percent, GHs at 65 percent, and RRHs at 66 percent. Scores for all service delivery points (HCs II–IV, GHs, RRHs) show room for improvement, although GHs and RRHs scored 41 percent for the basic level. NMS and JMS scored 46 percent and 50 percent, respectively, for the basic level, indicating the existence of basic items to contribute toward financial sustainability.

In general, scores are lower at the service delivery level, most likely due to lack of self-reliance for financial resources. For example, only 11 percent of health centers use cost recovery for any portion of funding for health commodities. In GHs, only 29 percent use cost recovery for any portion of funding for health commodities. However, 52 percent of health centers have secured most, or all, of their total identified financial need to be covered by government budget. This does leave plenty of room for improvement, however. The scores in this module indicate that there is not enough reliance on cost recovery for essential medicines and that overall budgets for health centers need to be set higher at the central government level.

A maximum basic-level score at JMS could be explained by the availability of financial resources for supply chain operations, regular financial reporting, and real-time tracking of supply chain costs. JMS has strong financial practices, including generating regular reports with profit and loss statements as well as measuring liabilities and monitoring cash flow. NMS also has strong financial practices, having scored almost all basic items in place.

The MOH scored a **58** percent on this module. Key gaps were identified in the module, such as the lack of any supply chain cost monitoring to understand its financial burden against the projected costing in the NPSSP, inclusion of unobligated funds in annual budgets to address unexpected issues during the year, and the lack of a cost-sharing policy and plan for supply chain costs.

Recommendations

● Ensure Uganda's health strategy includes short-, medium-, to long-term plans to address budget shortfalls, especially for procuring health commodities at HCs II–IV. Include development partners in the conversation and creation of these plans to better ensure a unified strategy, allowing for efficiencies and strengthening the ability to achieve sustainability.

● Conduct a root-cause analysis to determine the reasons for the lower financial sustainability scores at the lower supply chain tiers.

● Review financing mechanisms to ensure that health centers are getting appropriate financial resources recovered to help bolster operational budgets.

Policy and Governance

The policy and governance section seeks to ensure that policies and guidelines (such as standard treatment guidelines) exist, are managed by oversight bodies, and are used across the supply chain. Exhibits 19 and 20 show policy and governance results. Major areas that were factored into the scoring for this CMM module are the existence of a national medicines policy with supply chain components, an active oversight committee with broad representations from all levels of government and civil society, drug registration lead times, and standard treatment guidelines.

Exhibit 19. Policy and governance CMM score per level of achievement by level
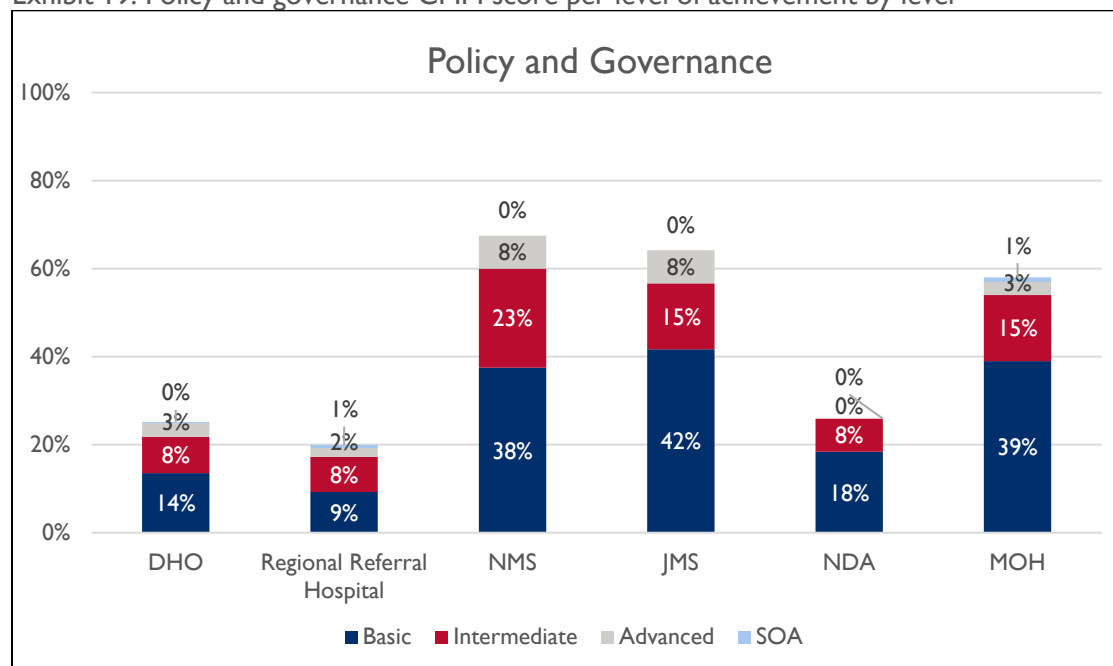
Maximum score for Basic is 50 percent; for Intermediate, 30 percent; for Advanced, 15 percent; for State of the Art, 5 percent. For instance, if the Basic portion is actually 45 percent, it should be interpreted as 45/50. See Exhibit 9 for more detail on CMM scores.

Exhibit 20. Key capability gaps, policy and governance

Gaps	Percent of facilities achieved	Possible solutions
RRH level		
Percentage of facilities with formally documented management policies or guidelines for the supply chain system	27 percent	Update and disseminate policies to all facilities
Percentage of facilities that include storage, financing, or HR components in their management policies or guidelines for the supply chain system	0 percent	Ensure that update policies include sections on storage, financing, and HR
DHO level		
Percentage of facilities with formally documented management policies or guidelines for the supply chain systems	25 percent	Update and disseminate policies to all facilities

Summary of results and discussion

At the central level, the MOH, NMS, and JMS have high Policy and Governance scores but do not reach the benchmark of 80 percent. The overall scores ranged from 20 percent at the RRHs to 69 percent at NMS, while none of the facilities scored above the benchmark. Across all facilities, NMS and JMS had the two highest basic scores of 38 percent and 42 percent, respectively. Low basic scores observed at the other facilities could be explained by the fact that supply chain policies and guidance fall outside their mandate. The directive to establish policies and guidelines falls within the purview of the MOH, which had a composite score of 57 percent, with 39 percent of the maximum 50 percent for the basic elements. Results that contributed to this score include the lack of procurement and inventory management policies as well as lack of inclusion of any stakeholders other than central government staff appointing members into the supply chain oversight committee.

The central-level assessment team who interviewed staff at the NDA noted that many of the questions in this module were not applicable to the entity. This could help explain the NDA's composite score of 26 percent, achieved only in the basic and intermediate CMM categories, with no points earned in advanced or state of the art. There are no formally documented guidelines or policies for any of the supply chain functions at the NDA, or a formal, high-level committee that provides supply chain oversight and governance.

Recommendations

The MOH, having the mandate for such activities, should:

- Ensure that policy documentation and guidelines are disseminated to the requisite staff and entities at the national and subnational levels and implemented accordingly.

- Conduct routine refresher trainings on the guidelines to ensure understanding of and compliance with the established policies.

- Use root-cause analysis to establish why policy and governance scores are low in all supply chain tiers but particularly in the DHOs and RRHs.

Quality and Pharmacovigilance

Quality and pharmacovigilance in Uganda are mandated to the NDA to ensure guidance and implementation across the country. This section seeks to ensure that a resourced quality system exists for commodities across the supply chain and that facilities at all levels understand and can act on their role in pharmacovigilance for medicines. Exhibits 21 and 22 show QPV results. Major areas factored into the scoring for this CMM module are strong practices for quality assurance at the central level, evidence of a well-established PV system at all levels, and documented action protocols for PV results.

Exhibit 21. Quality assurance and pharmacovigilance CMM score per level of achievement by level
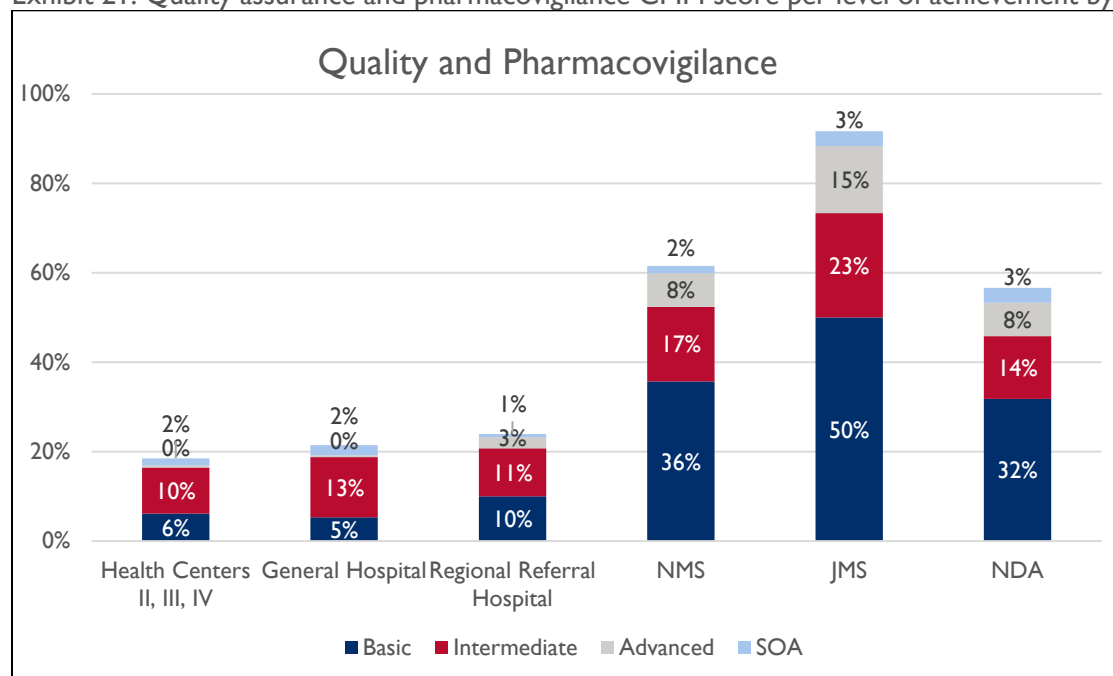
Maximum score for Basic is 50 percent; for Intermediate, 30 percent; for Advanced, 15 percent; for State of the Art, 5 percent. For instance, if the Basic portion is 45 percent, it should be interpreted as 45/50. See Exhibit 9 for more detail on CMM scores.

Exhibit 22. Key capability gaps, QPV

Gaps	Percent of facilities achieved	Possible solutions
HC level		
Percentage of facilities that identify stoppage of issuing medicines as a possible solution in an adverse drug reaction (ADR)	15 percent	Train dispensing agents at health centers to better understand how to adjust dispensing practices in an ADR
Percentage of facilities that have tools available for PV reporting	51 percent	Update and distribute PV reporting tools to all facilities
GH level		
Percentage of facilities that have action protocols based on PV results	46 percent	Disseminate and train staff on action protocols for ADRs and other PV events in all facilities
Percentage of facilities that identify stoppage of issuing messages as a possible solution in an ADR	21 percent	Train dispensing agents at HCs to better understand how to adjust dispensing practices in an ADR

Summary of results and discussion

The QPV scores reveal a divide between the central and downstream entities. JMS has the highest overall maturity score among all the facilities as revealed by its composite score of 91 percent, and a maximum possible score of 50 percent for basic and 15 percent for advanced. JMS performs quality checks on drugs it procures. However, scores at the service delivery sites were low, with 18 percent for HCs II–IV, 20 percent for GHs, and 25 percent for RRHs, indicating a lack of some of the basic elements to run a PV system.

Although the aggregate score for the NDA is 55 percent, the central-level assessment team who completed the CMM assessment noted that the NDA had a robust PV system, with all the relevant tools and processes in place, and properly documented; however, some of the functions were below the optimal level of performance. While the function was in place, certain levels of frequency or documentation practices were missing. Some of the questions that resulted in a lower basic score are:

- No recording of Certificates of Analysis and Certificates of Conformance for medicines received from international and/or domestic sources
- Long delays for QA results to return from the in-house laboratory (up to one month for results when it should be closer to one week)
- If the product quality is compromised, as determined through the quality assurance process, no standard operating procedures (SOPs) are in place to quarantine and/or recall the product available at this site/facility (in either electronic or paper copy).

Although drugs are checked for quality when entering the system from suppliers, the approach to QPV at the SDP level is not consistent. Only 51 percent of HCs II–IV reported having SOPs for quality control for adverse drug reaction, and only 28 percent of SDPs send an adverse reaction report to the NDA. Also, only 15 percent of health centers identified the stoppage of issuing products from a specific batch as a possible solution in an ADR.

This is a serious cause of concern that requires urgent attention from the GOU, since the quality and efficacy of the drugs consumed could be questionable, thus putting patients' lives at risk. It is a best practice that when QPV data are collected at hospitals and health facilities, these data are shared with the NDA and the MOH so that appropriate protocols are followed in ADRs and poor-quality medicines.

Recommendations

The NDA and the MOH should:

- Ensure that SOPs for pharmacovigilance are made available to relevant staff at all levels of the health system and staff are trained in the proper use of the SOPs

- Develop, share, and disseminate PV tools, updated regularly and made available across the entire system to support improved QPV

- Conduct a root-cause analysis to identify why quality and PV are low in the subnational facilities

- Ensure PV data are duly analyzed and results fed back to health providers

Forecasting and Supply Planning

The forecasting and supply planning section seeks to ensure forecasts are being created, using quality data and sound methodologies monitored frequently and ultimately informing procurement decisions. Exhibits 23 and 24 show FASP results. Areas of focus that factored into the scoring for this CMM module include forecasting involving multiple stakeholders for multiyear periods, well-established SOPs involving data from multiple sources, active supply plan monitoring, and sharing of supply plans among partners.

Exhibit 23. Forecasting and supply planning CMM score per level of achievement by level
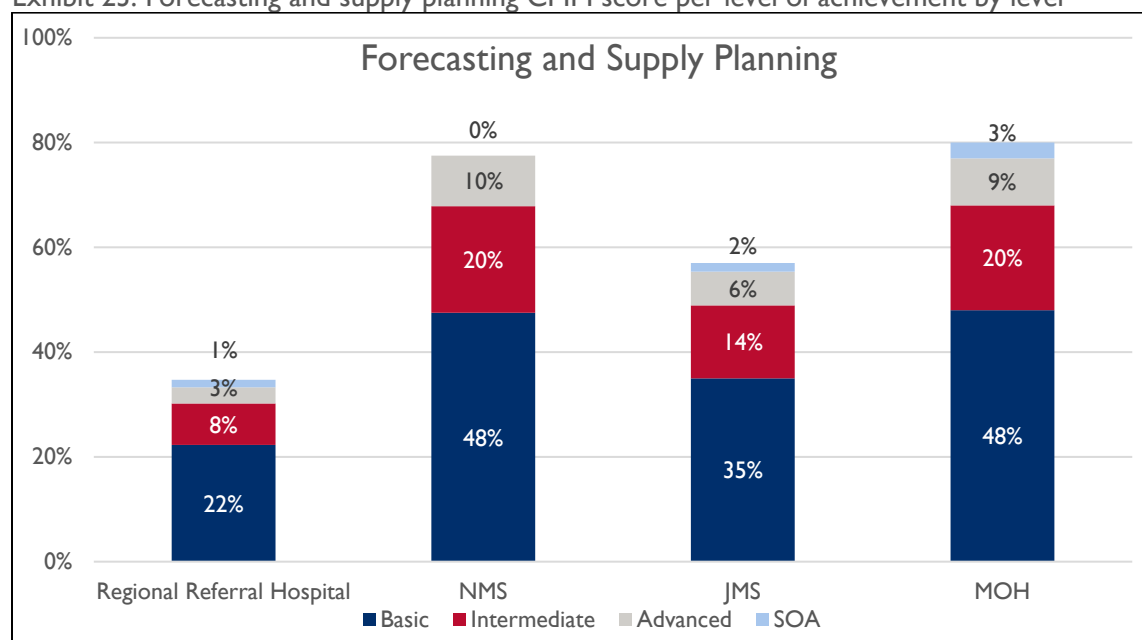
Maximum score for Basic is 50 percent; for Intermediate, 30 percent; for Advanced, 15 percent; for State of the Art, 5 percent. For instance, if the Basic portion is actually 45 percent, it should be interpreted as 45/50. See Exhibit 9 for more detail on CMM scores.

Exhibit 24. Selected forecasting and supply plan accuracy indicators by level

Indicator	NMS	JMS	RRHs
n=	1	1	7
Average supply plan accuracy	100 percent	97 percent	3 percent
Average forecast accuracy	87 percent	95 percent	---

Summary of results and discussion

Forecasting is completed only at the following levels of service in Uganda: RRHs, MOH, NMS, and JMS. Data points from these entities are used to inform forecasting and supply planning across Uganda's decentralized health care delivery model. The MOH scored 80 percent, a positive achievement, followed by NMS with a composite score of 78 percent. Both entities nearly reached the maximum basic score of 50 percent. JMS earned a composite score of 57 percent, and RRHs had a total score of 34 percent. The MOH and NMS achieved 48 percent for the basic level, nearly meeting the 50 percent threshold, and the MOH attained a 3 percent state-of-the art score, indicating the presence of more sophisticated forecasting tools and processes. Looking at the KPIs, NMS has high forecast and supply chain accuracy rates, signifying better availability and use of logistics data, and the consistent development, updating, and execution of supply plans.

The maturity observed at the basic levels of the central entities suggests that Uganda has a solid foundation from which to generate and execute forecasts and supply plans, particularly at the MOH and NMS. Using standard software, a dedicated forecasting and supply planning (FASP) unit at the MOH leads the forecasting exercise on established annual dates, developing plans for one, two, and three years into the future, accuracy that is evaluated each year. This collaborative process involves stakeholders from different MOH divisions, NMS staff, development partners, vertical disease program representatives, consultants, and lower-level facility staff. Without specialized software, the MOH QPPU unit also leads forecasting activities for NMS, creating plans informed by stock on hand, consumption, shipment status, financial cycles and lead times, one year into the future. Forecasting exercises at the MOH and NMS use all available data: morbidity, consumption, demographic projections, and service statistics. NMS received full points for including all possible participants — the MOH QPPU unit, other MOH personnel, vertical disease program representatives, NMS staff, development partners, and lower-level supply chain staff from warehouses and SDPs — in the annual forecasting exercise and sharing the resultant plan with external partners for coordination purposes.

An imbalance in forecasting capabilities observed at JMS and RRHs is evident from their maturity scores. While 100 percent of RRHs forecast their health commodity requirements, only 13 percent involve the MOH FASP unit and only 20 percent involve the central medical stores, misalignment that could be contributing to their lower CMM composite score and a larger outcome of day-to-day stock challenges that might be otherwise avoided if forecasts were shared. The RRH average supply plan accuracy KPI value of 3 percent indicates that RRHs require further technical assistance in this area. A further explanation could be that only 13 percent of RRHs use standardized health forecasting software (e.g., PipeLine, Quantimed, LabEquip, or other commercial sector solutions), and only 33 percent of RRHs have generated action plans based on forecast accuracy. For data inputs,100 percent of RRHs use consumption data for forecasting and 60 percent also use morbidity-based forecasting. While software may be an issue, other signs, including low forecast accuracy, poor LMIS record accuracy, and no outside technical assistance during forecasting, suggest that RRHs could use additional technical assistance in forecasting. JMS, on the other hand, leads its own forecasting exercise without input from the MOH, vertical disease programs, or development partners, and forecasts one year into the future using only consumption data, which factors in wastage and missed demand. With no formal process to update the supply plan, changes are not communicated to downstream facilities. Further, cost recovery is the only mechanism to finance the forecasting function at JMS.

Exchange of knowledge and skills from the MOH's QPPU unit beyond NMS could foster a balanced, shared, and robust pool of forecasting and quantification experts. Coordination between the MOH and all downstream entities could improve Uganda's FASP process and targets, achieved through information dissemination, transparency, and better stakeholder alignment.

Recommendations

- Conduct a detailed review of FASP across all central entities and hospitals to establish why there is a wide range of functional capability.

- Track MOH supply planning accuracy to enable timely interventions that prevent supply disruptions.

- Strengthen capacity building for forecasting and supply planning as well as implementation skills. The MOH should set up a process or system for exchanging knowledge, skills, and capacity-building interventions between itself, NMS, JMS, and RRHs.

- Develop FASP guidelines to ensure a sustainable process.

- Support RRHs in improving data quality and forecasting through training, supportive supervision, and data quality reviews.

Warehousing and Storage

The warehousing and storage section seeks to ensure pharmaceuticals are stored using the most appropriate method to confirm their quality for patient use. Exhibits 25–29 show warehousing and storage results. Major areas that were factored into the scoring for this CMM module are existence of, and adherence to, SOPs for storage and inventory management, adequate physical infrastructure and safety equipment for storage of commodities, and appropriate security and accountability mechanisms in place.

Exhibit 25. Warehousing and storage CMM score per level of achievement by level
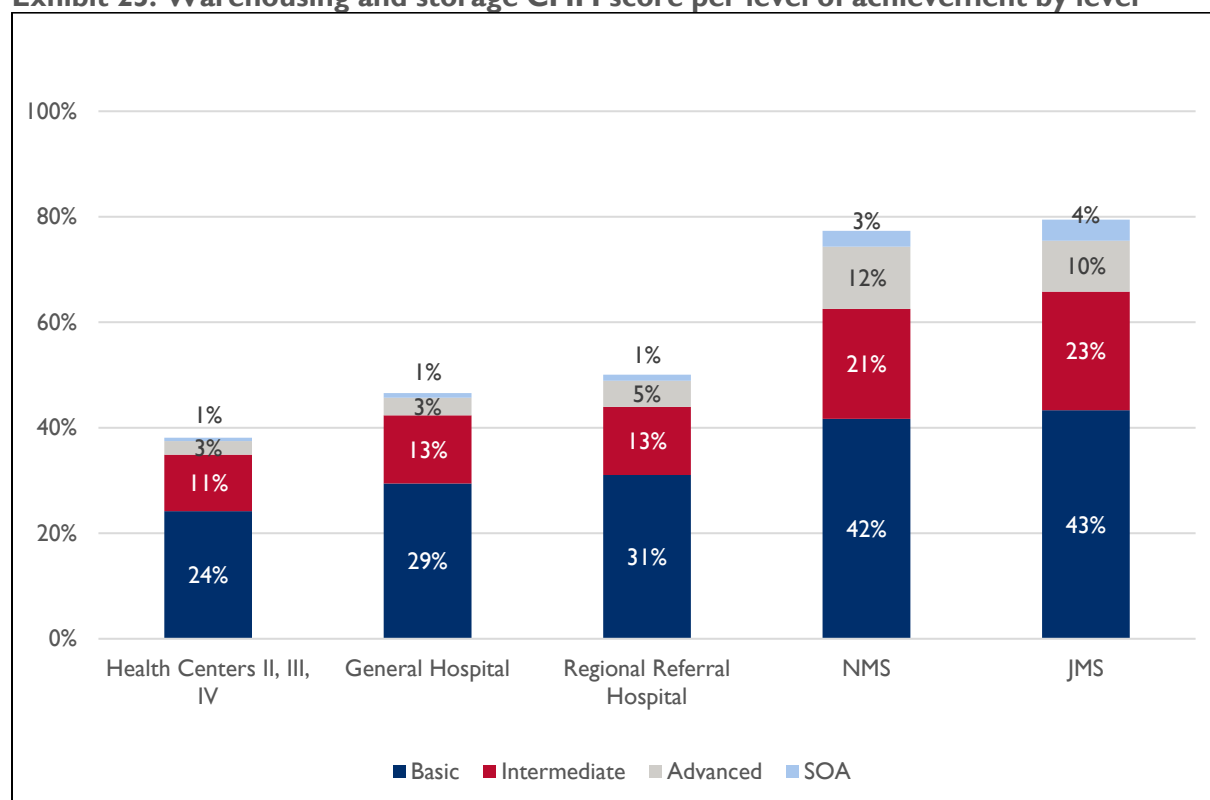
Maximum score for Basic is 50 percent; for Intermediate, 30 percent; for Advanced, 15 percent; for State of the Art, 5 percent. For instance, if the Basic portion is actually 45 percent, it should be interpreted as 45/50. See Exhibit 9 for more detail on CMM scores.

Exhibit 26. Warehousing capability maturity model score by facility type

Facility Type	Average percent	Facility Type	Average percent
HCs	38 percent (26–59 percent)	General Hospitals	47 percent (29–61 percent)
RRHs	50 percent (44–55 percent)	NMS	77 percent
JMS	79 percent		

Exhibit 27. Key capability gaps, warehousing and storage

Gaps	Percent of facilities achieved	Possible solutions
HC level		
Availability of SOPs for controlled substances and high-value products available on day of visit	3 percent	Review, update, revise, and redistribute SOPs for controlled substances and high- value products
Annual internal audits performed at the facility	20 percent	Initiate standardized audit tools and practices at all HCs
RRH level		
Proportion of facilities that have buffer or security stock in inventory management system	47 percent	Update guidelines and train appropriate staff on maintaining buffer stock on hand
Annual internal audits performed at the facility	0 percent	Initiate standardized audit tools and practices at all RRHs

Exhibit 28. KPI: Average SATP by facility type and tracer product

Legend:
- ▲ TLE
- ● Condoms
- ● Malaria RDTs
- ◆ LLINs
- ◆ RHZE
- ● Depo Provera
- ● ORS/Zinc
- ● HIV RTK
- ● Metformin
- ● ACT (AL) 6X4
- ● Amoxicillin
- ● Oxytocin
- ● Tetanus Toxoid
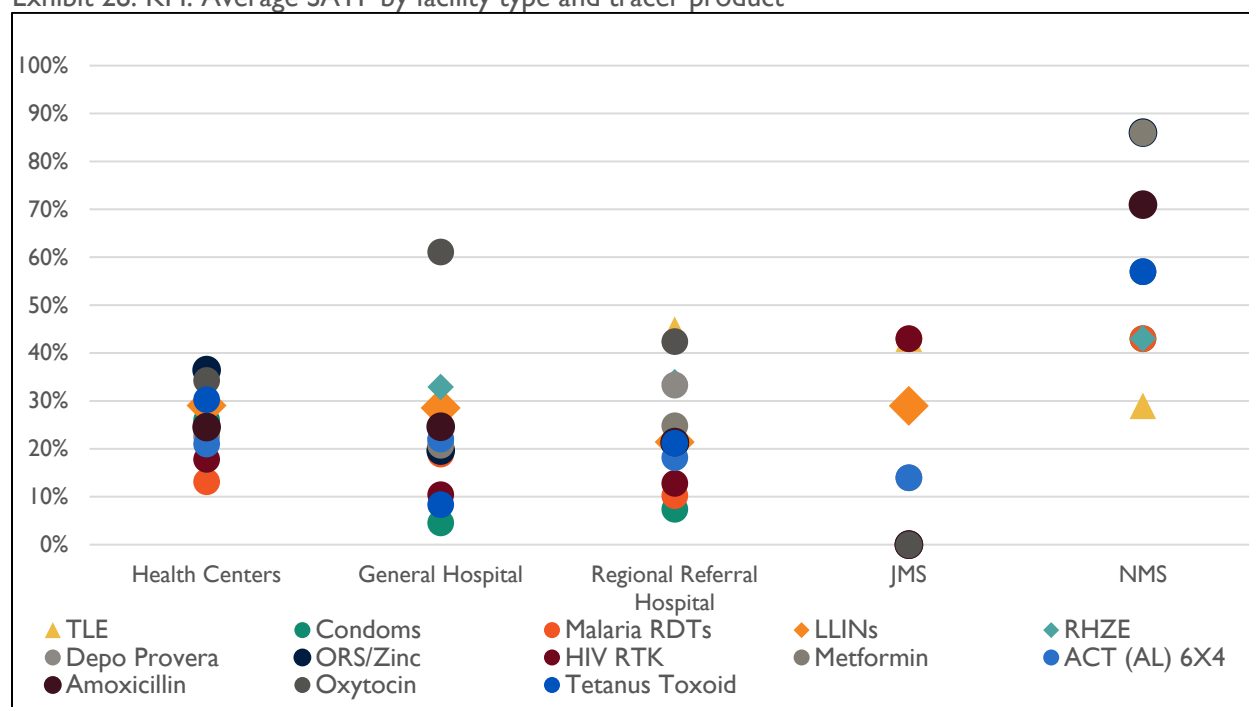
Exhibit 29. KPI — eLMIS record accuracy: percentage of facilities at 100 percent accuracy across facilities
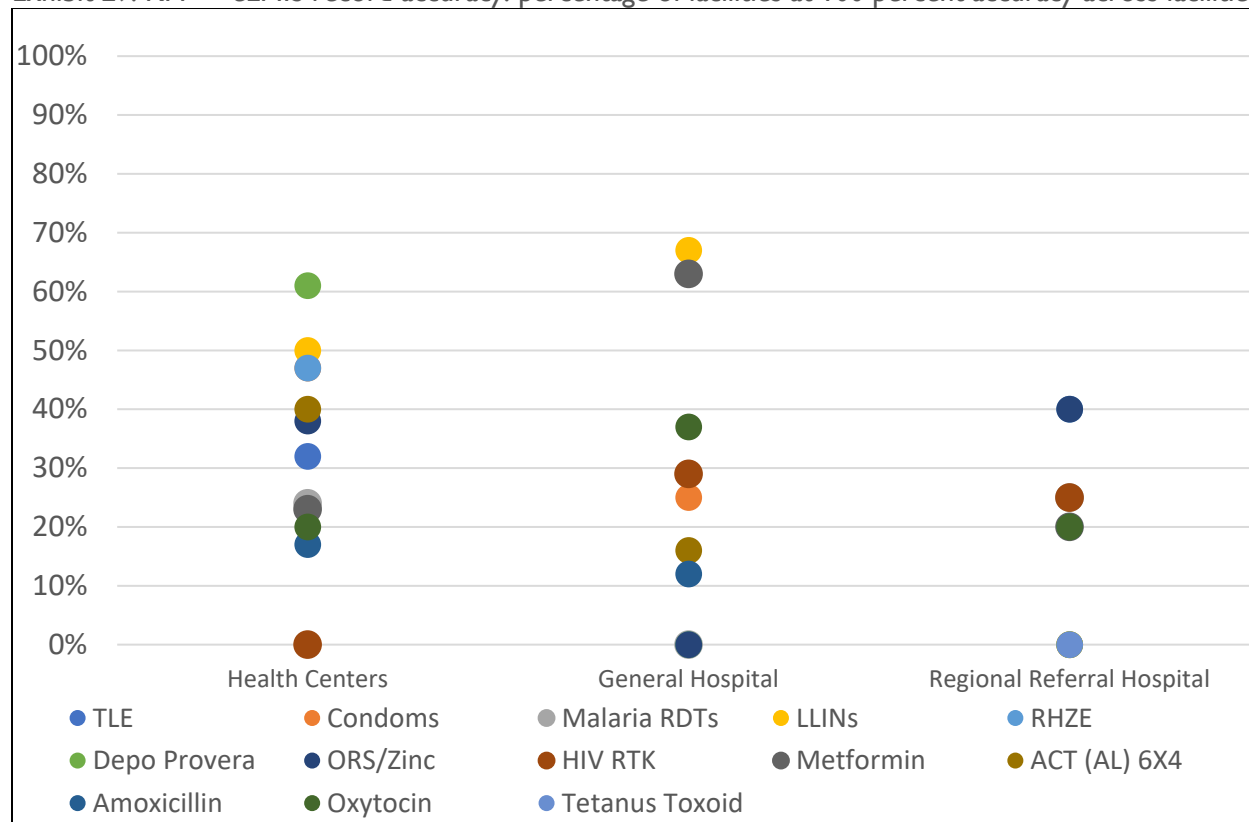
Summary of results and discussion

The CMM scores indicate a wide range of scores across the health system. RRHs and GHs score around 50 percent, with HCs scoring 39 percent. As the primary central warehouses for public sector health commodities, NMS and JMS scored close to 80 percent, at 77 percent and 79 percent, respectively. This is encouraging, as it suggests that both entities have the maturity capability that is appropriate for being at the top of the supply chain. However, exhibit 28 indicates a wide variance among tracer products for being SATP; 29–86 percent SATP for NMS and 0–43 percent for JMS.

Across all levels of service engaged in warehousing, HCs scored the lowest, at 38 percent. A further look at HCs finds that the KPIs corroborate the low score observed for the CMM module. Stockout rates were 22 percent for any commodity on the day of visit, with 55 percent of HCs having 100 percent accuracy of stockcards and 33 percent having 100 percent accuracy of eLMIS records (of those that have one). For GHs the CMM module score was 47 percent, with 11 percent having a stockout of any commodity on the day of visit.

At RRHs, a CMM score of 50 percent was achieved with 11 percent of RRHs having a stockout of any commodity on the day of visit. Also concerning is that only 19 percent of RRHs had 100 percent eLMIS record accuracy, and 41 percent of RRHs had 100 percent stockcard accuracy. RRHs also had

commodities stocked according to plan only 24 percent of the time, on average, with 9 percent of the 182-day period measured with a stockout.

Exhibit 30. Warehousing and storage KPI score by level (average score with some ranges)

Indicator	HCs	GHs	RRHs	NMS	JMS
n=	83	16	7	I	I
Stocked according to plan (tracer commodities)	25 percent (13–36 percent)	23 percent (5–61 percent)	24 percent (7–45 percent)	60 percent	33 percent
Stockout on day of assessment	22 percent	II percent	II percent	0 percent	0 percent
Stockout for 182-day period: percent of days out of stock in previous six months	12 percent	6 percent	9 percent	---	---
Average number of days per month with stockout, given that there was a stockout	6.4	4.3	6.3	---	---
Stockcard accuracy (percentage of facilities at 100 percent)	55 percent	65 percent	41 percent	----	----
eLMIS record accuracy	33 percent	21 percent	19 percent	97 percent (87–144 percent)	119 percent (94–138 percent)
Emergency orders as a percent of total orders	0 percent	3 percent	I percent	3.40 percent	----
Percentage of facilities that have temperature logs	68 percent	66 percent	85 percent	100 percent	100 percent
Percentage of time with temperature excursion	2 percent	0 percent	I percent	2 percent	6 percent

A dash implies that the indicator was not collected at that level, whereas a zero implies the true value of that indicator is zero.

The observed low maturity scores and poor indicator performance for selected tracer commodities suggests the need for significant improvements in warehousing and storage. SATP levels that are consistently below 60 percent and as low as 23 percent indicate poor inventory management and stock management practices at all levels of the supply chain system. While JMS and NMS have high overall warehousing and distribution scores (almost 80 percent), they have poor performance for SATP with 33 percent and 60 percent, respectively. This suggests that further examination is needed to understand if maximum and minimum stock thresholds are set appropriately or if an operational issue is limiting

performance. In examining the eLMIS record accuracy for NMS and JMS, both have strong performance with stock accuracy, further indicating that the problem may be around minimum/maximum policies, but further investigation is required to understand the root cause.

Most concerns are at the HC level, where poor stockcard accuracy (55 percent), poor eLMIS accuracy (33 percent), and poor SATP metrics (25 percent) are all contributing to the consistent stockout rates. A total 22 percent of all HCs were stocked out of at least one tracer item on the day of the visit. Also, over a 182-day period, HCs were stocked out of at least one tracer product 12 percent of the time. Looking at the CMM score, this poor performance is corroborated with only 48 percent of basic items in place for warehousing and storage, leaving much room for improvement. Key gaps in these basic items are 41 percent of HCs lacking any secondary source for consistent power supply and only 12 percent of health centers having controlled access and/or a lockable container for high-value products and controlled substances. Also, only 68 percent of HCs have temperature monitoring logs in place.

Recommendations

- Strengthen inventory management and control through training, supportive supervision, mentoring, and data quality reviews at all health system levels. Health centers especially need to strengthen systems for record-keeping practices for stockcards and eLMIS records, SOPs for high-value products and controlled substances, and equipment and training for temperature monitoring.

- Identify whether the poor SATP at the central level is due to inaccurate stock-level recommendations or an inability to adhere to them operationally. This will require further root-cause investigation.

- Conduct a root-cause analysis to determine why the stockouts become worse the further down the supply chain tiers the facility is. Also, provide training on completing various LMIS forms (e.g., stockcards, inventory control cards, and other record-keeping and reporting forms) across all supply chain tiers.

- Provide training on paper LMIS and eLMIS across all supply chain tiers to ensure sites accurately record and report logistics data for making informed decisions on quantities to resupply, quantify, and procure.

- Conduct an equipment and records assessment to determine the requirements for cold chain backup, monitoring, and tracking and raise funds to equip HCs with inverters and solar equipment. This should include regular supply of monitoring and tracking tools.

- Create a separate space and conduct an optimization assessment to accommodate planned stock levels. Based on observations, and not specifically through the assessment tools, enumerators noted this need, as it affects facilities' ability to stock according to plan.

Distribution

The distribution section seeks to ensure that distribution plans are structured and monitored to ultimately achieve on-time distribution of health commodities to service delivery points. Exhibits 31 and 32 show distribution results. Major areas that were factored into the scoring for this CMM module are existence of a distribution plan, consideration of appropriate factors for optimizing distributions, appropriate policies and procedures, active recording and monitoring of cost and transit data, and appropriate mechanisms to ensure safety and quality of products during transit.

Exhibit 31. Distribution CMM score per level of achievement by level
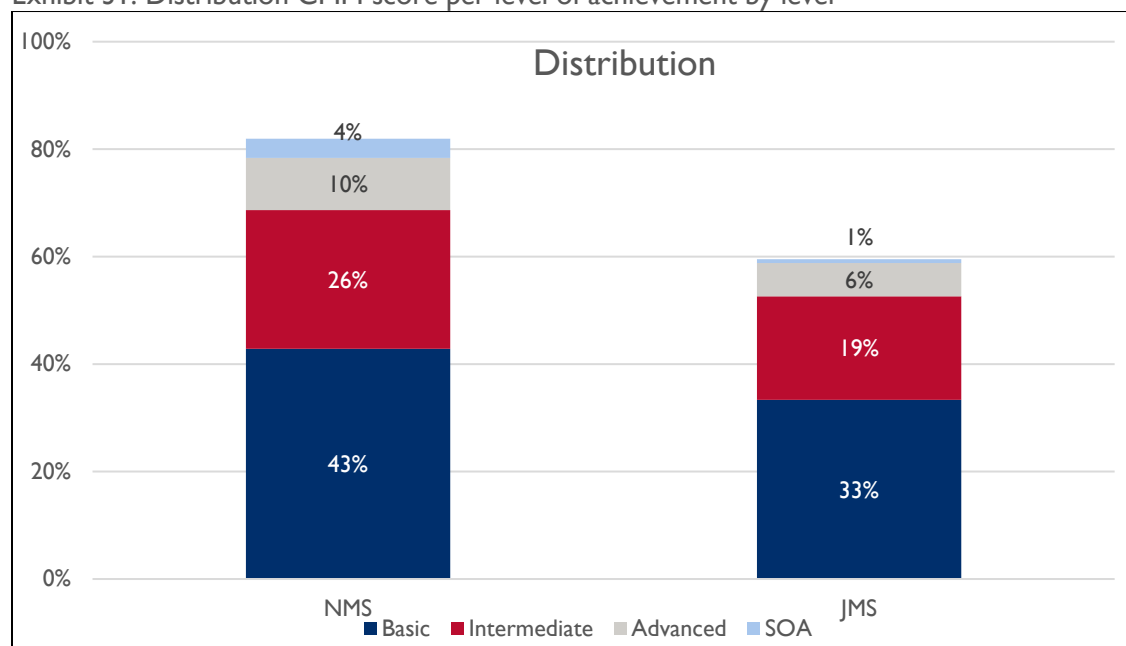
Maximum score for Basic is 50 percent; for Intermediate, 30 percent; for Advanced, 15 percent; for State of the Art, 5 percent. For instance, if the Basic portion is 45 percent, it should be interpreted as 45/50. See Exhibit 9 for more detail on CMM scores.

Exhibit 32. KPI 13, On-time order rate

Indicator: OTD rate	HCs	GHs	RRHs
All orders	22 percent	53 percent	75 percent
Routine orders	21 percent	53 percent	75 percent
Emergency orders	N/A	6 percent	8 percent

Note: OTD is defined as +/–0 days of agreed delivery date.

Summary of results and discussion

With the central responsibility of procuring, warehousing, and distributing pharmaceutical products to all public health facilities, the NMS composite score above 80 percent is a positive achievement. NMS

achieved higher marks in each scoring category, where JMS scored 60 percent in total. Contributors to this low score are a lack of data management system for capture transport data, a lack of KPIs for monitoring transportation activities, and a lack of key vehicle or product considerations during route planning. Supplying the lion's share of pharmaceutical products, an 82 percent score suggests that NMS can deliver on its responsibility to support Uganda's public health sector. It has most of the appropriate policies and procedures in place to support this function. However, a review of OTD data from NMS customers, the facilities, finds some performance gaps. Overall, NMS delivers on time to health facilities just 22 percent of the time with significantly better performance at GHs (53 percent) and RRHs (75 percent). OTD is measured as the exact promised delivery date, with no buffer or multiday delivery window.

NMS operates under an approved distribution plan that captures downstream distribution and operations in a data management system. Most disease programs or partners integrate distributions where possible. NMS has in place a daily, real-time system for capturing and maintaining transportation data. Further, distribution routes are reviewed annually, considering truck capacity and geographic location. NMS has SOPs available for distribution, which cover all relevant areas except redistribution. NMS uses radio frequency identification (RFID) tags as a security measure along with GPS, barcode scanning, unannounced inspections, and partnerships with local policy precincts. While the GOU covers 100 percent of the distribution budget, NMS has used total cost data and specific interventions to target transportation cost reduction.

JMS publishes an approved distribution plan and communicates schedules to facilities. The distribution routes are preplanned with routes reviewed biannually. While routing at JMS does not consider truck capacity or product volumes, distribution is integrated whenever possible. Policies are in place at JMS that cover distribution and include cold chain, transport of expired drugs, security, storage during transport, and documentation, and outbound shipments stocks are reconciled with proofs of delivery. For security purposes, JMS has requirements in place for trucks and personnel and an established process for documenting loss incidents. For security management, JMS uses integrated audit procedures at beginning/end, along with barcode scanning, and performs unannounced inspections.

Recommendations

- Review JMS distribution practices and launch an improvement to systematically capture data on distributions and use this information in route planning (geography), as well as truck capabilities (truck capacity, weight of products, and product volumetrics).

- Set more realistic delivery windows (+/–3 days) and continue to track OTD rates at lower-level facilities to understand the true level of performance that NMS has in delivering throughout the supply chain (MOH). This will allow for performance benchmarking and the ability to create a plan to reach satisfactory performance in a smaller window.

- Consider truck capacity, product volume, and product weight, when planning distribution routes (JMS).

LMIS

The LMIS section seeks to ensure the right tools, SOPs, policies, and guides are in place to enable a site to order the required product and report stock status, on time. Exhibits 33–36 show LMIS results. Major areas that were factored into the scoring for this CMM module are evidence of standardized LMIS tools and practices used consistently throughout the system, harmonized reporting practices, regular reporting intervals, performance monitoring on quality of reporting, and appropriate equipment and support to perform the function at all facilities.

Exhibit 33. LMIS CMM score per level of achievement by level
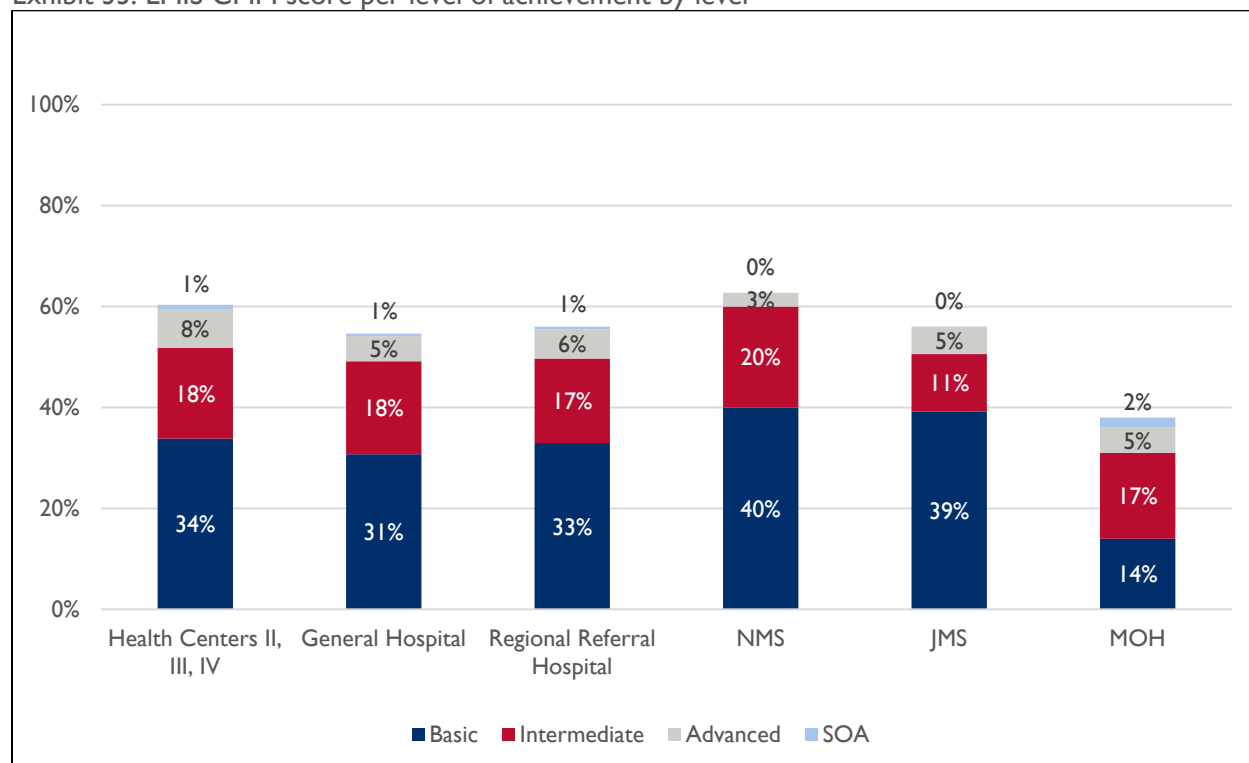
Maximum score for Basic is 50 percent; for Intermediate, 30 percent; for Advanced, 15 percent; for State of the Art, 5 percent. For instance, if the Basic portion is 45 percent, it should be interpreted as 45/50. See Exhibit 9 for more detail on CMM scores.

Exhibit 34. LMIS CMM score by facility type

Facility type	Average percent	Facility type	Average percent
HCs	60 percent (36–89 percent)	GHs	55 percent (39–69 percent)
RRHs	56 percent (40–77 percent)	JMS	56 percent
MOH	37 percent	NMS	63 percent

Exhibit 35. Selected LMIS indicators by level

| Indicator	HCs	GHs	RRHs
n=	83	16	7
eLMIS record accuracy: percent of facilities at 100 percent accuracy	33 percent	21 percent	19 percent
Average deviation from 100 percent accuracy across facilities	126 percent	154 percent	1,648 percent

Exhibit 36. KPI: eLMIS record accuracy: Percentage of facilities at 100 percent accuracy across facilities
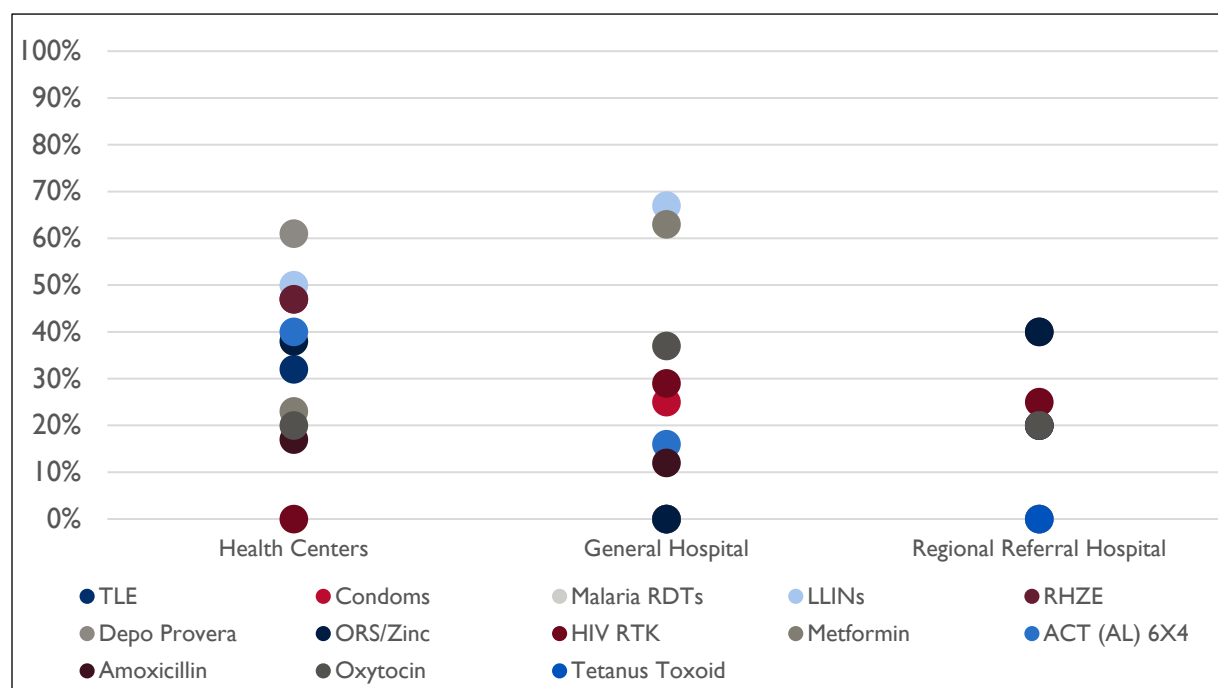
Summary of results and discussion

Virtually all entities have a foundational grasp of LMIS, with scores converging around 60 percent, except for the MOH at 38 percent. The MOH's lower score may be partially explained by its operating structure, as the recipient of data from all other entities. Many basic-level scoring points were lost at the MOH for a lack of information being recorded in the paper LMIS — almost no dimensions are captured. Although eLMIS integrates more data points, adjustments, loss/expiry, issues/receipts, and expiry dates are still missing from the ministry's data capture. Further, the MOH does not track KPIs for timeliness, completeness, or accuracy of reports submitted. The fact that the GOU has minimal funding in its budget for LMIS also impacts systems implementation and the ability of facilities down the supply chain to incorporate more robust systems. NMS had the highest composite score at 63 percent, and HCs I–IV were a close second at 61 percent.

At the lower-level facilities, HCs, GHs, and RRHs scored 60 percent, 55 percent, and 56 percent, respectively. A look at the associated KPIs finds corroboration for their suboptimal scores. For the KPI eLMIS record accuracy, average deviation from 100 percent accuracy, HCs, GHs, and RRHs scored 33 percent, 21 percent, and 19 percent, respectively.

Exhibit 37. KPI: eLMIS record accuracy — average deviation from 100 percent accuracy across facilities
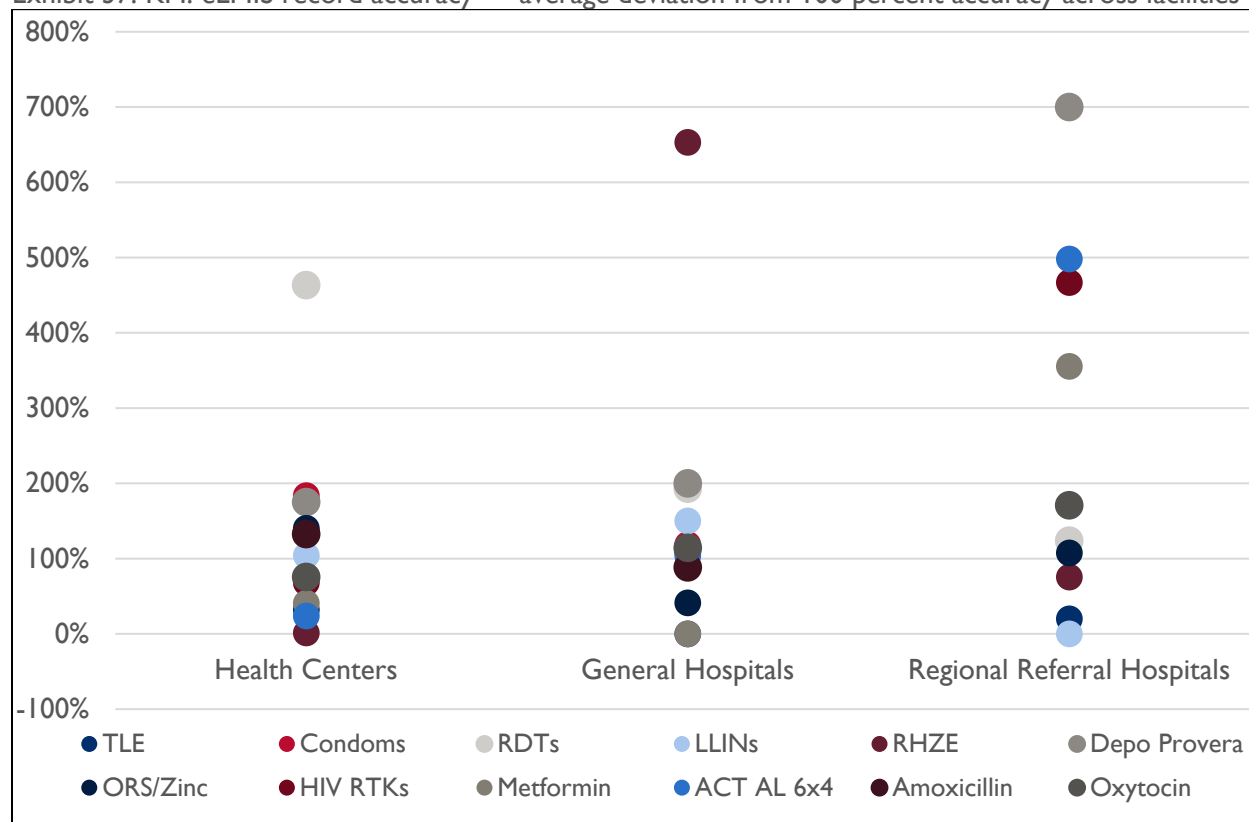
Note that for ease of display, two large outliers for RRHs have been omitted in the exhibit: 13,262 percent for amoxicillin and 2,249 percent for condoms.

All the important building blocks are at various levels of completeness in holistically integrating LMIS across the health system. JMS, NMS, and the MOH use paper-based and electronic LMIS. In all, 100 percent of GHs have an LMIS in place with 16 percent strictly using eLMIS; 45 percent are still paper based, and 39 percent use a mixture of both. Of those GHs using paper, 71 percent reported that data loss, data analysis, and data sharing are all challenges faced with a nonelectronic system. Inventory management tools are standardized across JMS, NMS, and the MOH's supply chain, and a formal mechanism is in place to report technical issues with LMIS and a help desk entity to address questions. NMS and the MOH also have a technical working group for LMIS. NMS and JMS have SOPs in place for paper-based LMIS and eLMIS. The MOH has established eLMIS SOPs but updates them only every three years. LMIS data at NMS are used to inform ordering and reporting, forecasting and supply planning, procurement, reverse logistics, inventory management, and budgeting. Items missing from reports include redistribution and waste management.

The MOH has harmonized reporting frequency across system levels, aligning all vertical programs to the same reporting cycles. NMS also commented that nearly all vertical programs have the same monthly reporting cycle in Uganda. JMS has streamlined commodity reports down to just one to three per month and tracks the completeness and timeliness of reporting by lower-level facilities. For data quality assessments (DQAs), 100 percent of GHs conduct DQAs, mixing implementers with the MOH, regional warehouse staff, and internal staff. At NMS, DQAs are conducted at the central, district, and HC levels. Half of HCs have their own staff conducting DQAs.

Internet connectivity and lack of skilled staff and/or insufficient resources to train staff were uniformly cited as barriers to eLMIS uptake across the MOH, JMS, NMS, and GHs. Only 37 percent of GHs say they have strong internet connectivity that always works. The MOH and NMS noted data loss or downtime from central systems failure as challenges. The MOH included data analysis challenges, while NMS referenced the availability of computers as a barrier to implementing eLMIS. JMS and NMS indicated data integrity issues, and JMS cited lack of time as one of its biggest challenges. This lack of time stems from JMS having to enter paper-based LMIS reports on behalf of HCs that are unable to enter the data themselves. This challenge needs to be addressed by strengthening systems at the facilities.

Additional focus is needed at the RRH level on eLMIS operations and data quality. Having scored sub optimally on the CMM and performed poorly on the eLMIS accuracy indicator, this function is not getting enough attention at the RRH level. Accurate and consistent record keeping will ensure these hospitals have the proper medicines to treat the sickest patients.

Recommendations

- Review MOH LMIS KPIs to assess accuracy and timeliness and transition to eLMIS in earnest. As performance improves with regular eLMIS use, retire the paper-based LMIS.

- Review LMIS operational capabilities across all entities, followed by appropriate data quality and LMIS SOP training, particularly at RRHs.

- Conduct supportive supervision for eLMIS staff after training to ensure retention of knowledge and improved eLMIS metrics performance.

- Advocate to the GOU and other stakeholders for the need for additional LMIS funding and seek technical assistance to improve existing data capture.

Waste Management

The waste management section seeks to guarantee that national plans are being followed and that unusable products are quarantined and properly disposed of. Exhibits 38–40 show waste management results. Major areas that were factored into scoring for this CMM module are existence of an approved national waste management plan, existence of SOPs and guidelines for waste management in all facilities, active monitoring of waste management and removal, and complete records of waste management events.

Exhibit 38. Waste management CMM score per level of achievement by level
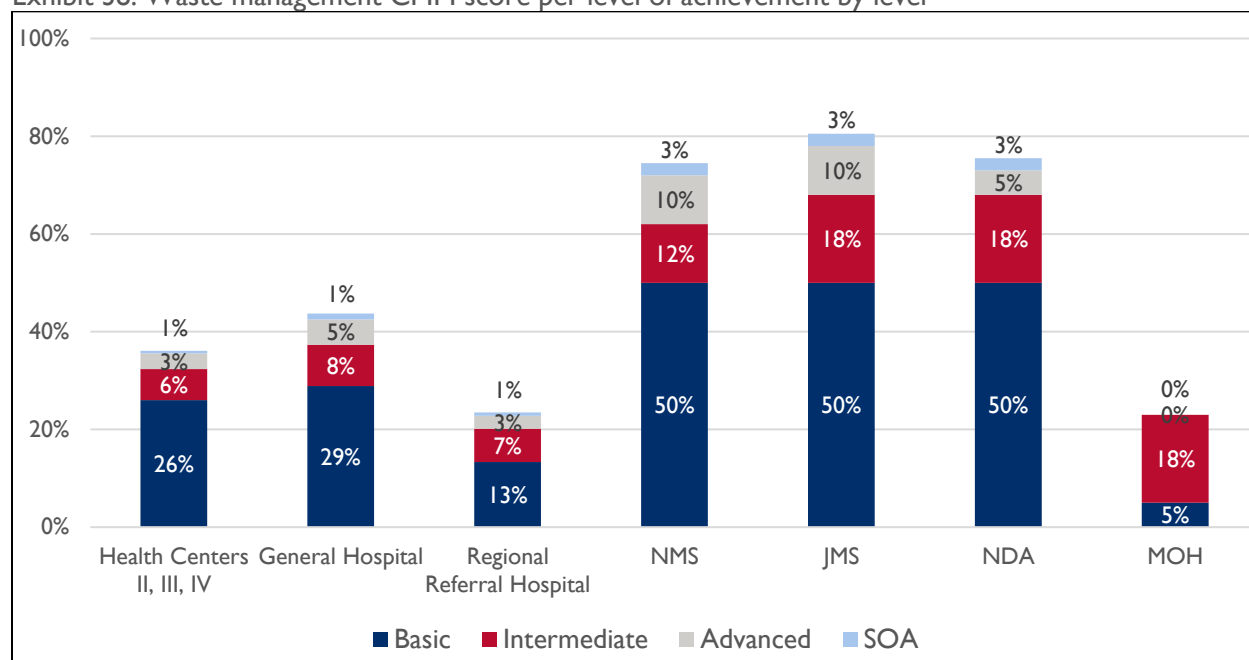
Maximum score for Basic is 50 percent; for Intermediate, 30 percent; for Advanced, 15 percent; for State of the Art, 5 percent. For instance, if the Basic portion is 45 percent, it should be interpreted as 45/50. See Exhibit 9 for more detail on CMM scores.

Exhibit 39. Wastage (damage, theft, and expiry) as a percentage of total stock available, by level
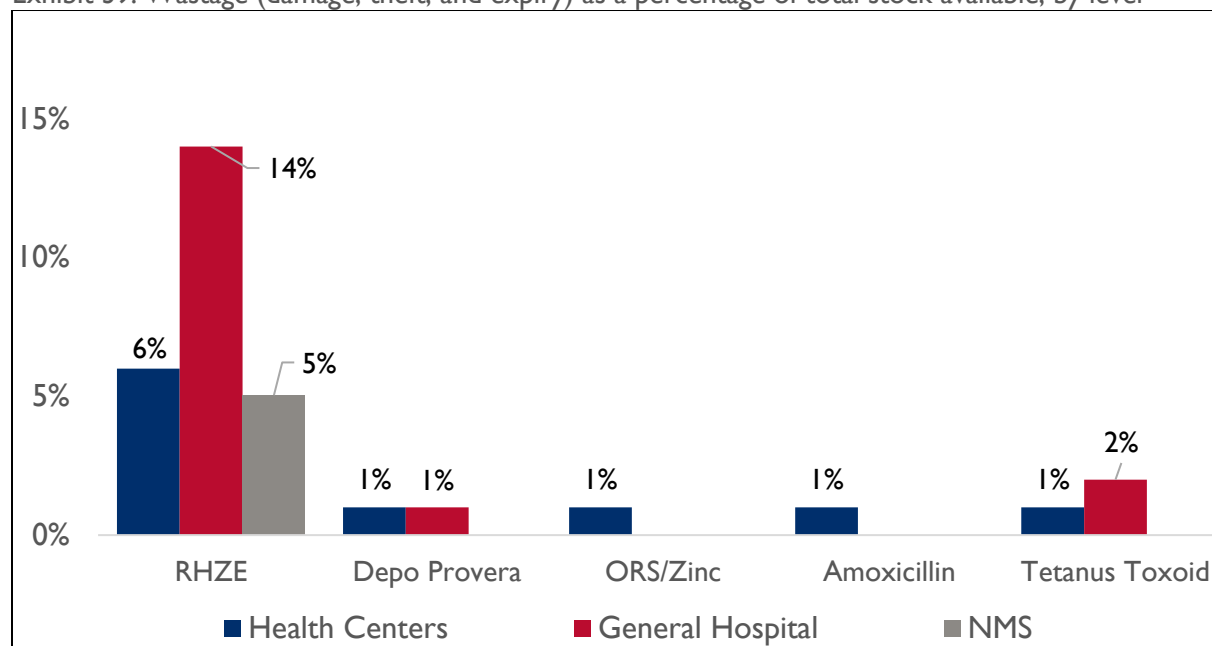
Exhibit 40. Key capability gaps, waste management

Indicator	Percent of facilities achieved	Possible solutions
GH level		
Percentage of sites that document and authorize waste disposal	41 percent	Conduct trainings with updated SOPs to institutionalize waste management processes
RRH level		
Approved waste management SOPs available on day of visit	13 percent	Update and distribute SOPs to all GHs
Annual internal audits performed at the facility	40 percent	Conduct trainings with updated SOPs to institutionalize waste management processes

Summary of results and discussion

The waste management overall maturity scores range from 23 percent at the RRHs to 81 percent at JMS. Maturity scores are the lowest at the lower-level facilities and hospitals and highest at NMS, JMS, and the NDA. Looking at this result in depth, NMS, JMS, and the NDA all had 100 percent of the basic items in place, while none of the lower-level facilities had anywhere near this level of basic scores. While HCs and hospitals did not have high composite scores, 82 percent of HCs reported that unusable pharmaceutical products are stored separately. Also, 87 percent of GHs and 60 percent of RRHs indicated that the basic principles for proper waste management are there and can be expanded upon, particularly in documenting waste practices, as only 20 percent of HCs authorize and document their disposal events.

A look at the related KPIs for this module finds an alarming level of wastage for the first-line tuberculosis drug RHZE. As much as 14 percent (as a percentage of total stock on hand) of RHZE was allowed to expire at GHs. Different packaging formats for a shipment of RHZE and a lack of sensitization training

possibly contributed to this stock situation. This suggests that better training is required for health workers and more care is needed during dispensing to avoid expiration, along with clear SOPs and guidelines to deal with this large quantity of unusable pharmaceuticals at GHs. Exhibit 40 indicates that GHs have poor waste management practices in general, with few having approved SOPs and documentation of disposal events. Addressing this gap should be a priority at this level of the supply chain.

Established SOPs and guidelines for waste management vary across facilities. Overall, coordinated waste management guidelines and associated implementation below the central level seem to be lacking. The CMM indicated a concerning absence of waste management protocol at the MOH. While an MOH unit is responsible for managing waste, national guidelines do not exist, and the MOH does not operate under approved guidelines. A total 35 percent of GHs and 42 percent of HCs had SOPs available for waste management; 27 percent of these GHs indicated SOPs are updated annually, and 30 percent responded SOPs are either not updated or the respondent was unclear on the frequency. Of the 13 percent of RRHs with waste management SOPs, the documents have never been updated. The NDA, JMS, and NMS, on the other hand, do have waste management protocols in place. NDA's national waste management guidelines include procedures for general waste, hazardous waste, infectious waste, and unusable medical pharmaceutical product (UMPP). SOPs for waste management at JMS are available and updated every two years, while NMS updates its waste management SOPs annually, or more often.

The NDA and JMS use best waste management practices, through regular KPI collection, internal and external audits, and onsite monitoring, which is integrated into their respective LMIS. A total 27 percent of RRHs also integrate waste management into their LMIS. While 79 percent of GHs do onsite monitoring of waste management practices, only 35 percent conduct internal or external audits. Only 13 percent of HCs have external audits for waste management. The MOH does not use software to track waste management; rather, it monitors through internal audit and collection of KPIs. The MOH does identify and track corrective actions; however, the process was not articulated by interviewees.

For UMPP, the NMS waste management process involves inertization or solidification, followed by landfill disposal of treated waste residues or engaging a third-party certified waste management company to pick up, transport, and dispose. At JMS, UMPP is taken to a higher-level government of Uganda facility or also handled by third-party disposal pick-up service. Disposal processes at both central-level warehouses are appropriately authorized and documented. At the GHs, 45 percent choose onsite incineration for expired product, while 57 percent transport to a higher-level facility and 11 percent use the local landfill. For HCs, 65 percent reported transporting their unusable medical pharmaceutical products to a higher-level warehouse.

Recommendations

- Review waste management capabilities and processes for removal at lower-level HCs.

- Establish and publish clear waste management guidelines and SOPs for the MOH, as well as best practices for storing unusable and expired pharmaceutical products.

- Pay special attention to the lower-level HCs by setting up a waste management system.

- Update and redistribute SOPs for waste management practices and provide supportive training at all types of hospitals nationwide.

Procurement and Customs Clearance

The procurement and customs clearance section seeks to determine that procurements are done transparently and in accordance with best practices. Exhibits 41 and 42 show procurement and customs clearance results. Major areas that were factored into the scoring for this CMM module are transparent, auditable procurement systems governed by policies and procedures, active management of vendor performance, and well-functioning customs clearance processes. This module was designed with public-sector procurement systems in mind.

Exhibit 41. Procurement CMM score per level of achievement by level
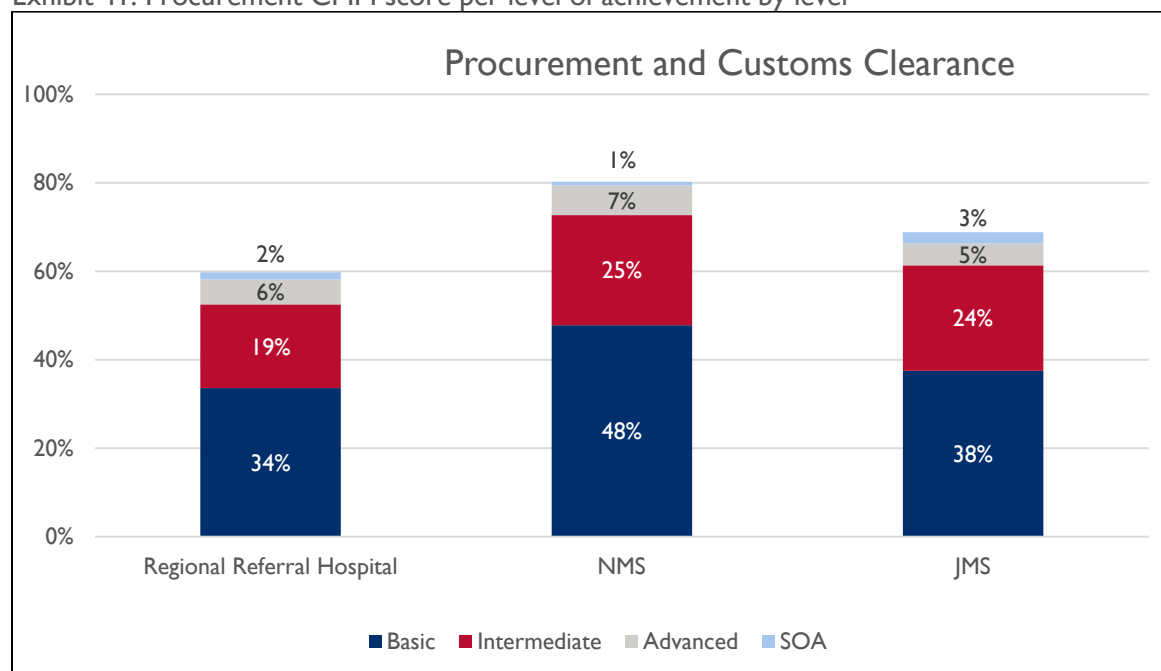
Maximum score for Basic is 50 percent; for Intermediate, 30 percent; for Advanced, 15 percent; for State of the Art, 5 percent. For instance, if the Basic portion is 45 percent, it should be interpreted as 45/50. See Exhibit 9 for more detail on CMM scores.

Exhibit 42. Procurement, select KPIs

Indicators	NMS	JMS
Percentage of products procured that are on the Essential Medicines List (NEML)	84 percent	88 percent
Percent of international reference price paid (average of five tracer products)	83 percent	61 percent
Emergency orders as a percentage of total procurements	3.4 percent	---
Direct orders as a percentage of total procurements	---	1.32 percent

Summary of results and discussion

Procurement and Customs Clearance activities are conducted at RRHs, JMS, and NMS, which earned composite scores of 61 percent, 70 percent, and 81 percent, respectively. The overall maturity score for procurement is high at NMS, above the ideal 80 percent threshold, close to meeting the basic and intermediate maximum scores.

NMS performs all customs clearance in-house and reported that it typically takes three days to one week to get products out of the port of entry. During sourcing and bidding at NMS and JMS, standard treatment guidelines (STGs), the EML, and medical supplies list are consulted, and NMS further integrates forecasts. While 100 percent of RRHs reference EMLs during sourcing and procurement, only 56 percent reference forecasts. JMS has a documented process is in place for identifying vendors, including an approved vendor list, which is appropriately managed by a database, and 100 percent of JMS procurements require vendor competition for tenders. In all, 100 percent of RRHs use price in their tender evaluation, and 78 percent use past performance and lead time. For the procurement process, 67 percent of RRHs use an electronic procurement and have staff trained to use the systems.

The GOU and development partners split the budget for procurement operations at NMS, which has internal procurement control mechanisms established for value thresholds, formally enforced order and approval protocols, contracts committee, separation of roles, and legal review. JMS also has similar procurement controls in place for authorized personnel, value thresholds, formally enforced order and approval mechanisms, contracts committee, separation of roles, and legal review. For 100 percent of RRHs, procurements are approved by authorized personnel.

NMS and JMS have strong performance on the selected procurement metrics. Both entities buy drugs well below the international reference price, with NMS and JMS scoring 83 percent and 61 percent, respectively, for five selected tracer products for which reference data could be obtained. Also, both entities adhere to the National EML with strong consistency, procuring 84 percent and 88 percent, respectively, of their products from it.

NMS and JMS have formal ethics governance bodies. NMS conducts external audits annually, using audit findings to create improvement plans. The procurement ethics commission at JMS conducts reviews annually or more often, while 100 percent of RRHs have formal external audits of the procurement system scheduled annually, or more often. SOPs are available for procurement and are updated every two years at JMS. Only 56 percent of RRHs have procurement guidelines, and none are updated more often than every three years. Nonuniformity in using SOPs, particularly at RRHs but generally across the procurement entities, can create a situation of nonstandardized procurement processes and workflows, leading to potential inefficiencies within the system and potential procurement bottlenecks.

Recommendations

- Initiate separate reviews at the RRHs to determine why they have scored low in procurement and customs clearance capabilities. These entities will likely need further technical assistance.

- Introduce through the GOU and MOH additional internal controls such as internal procurement audits to reduce risks at NMS.

- Develop SOPs, make them available at all procurement levels, and train and monitor RRH procurement staff on internal audits compliance issues.

- Strengthen value-for-money analysis coupled with benchmarking and price negotiations to obtain more savings that can be used to buy additional commodities.

By Level of Service: Overall CMM and KPI Results

Assessment results were also analyzed by looking at the data from the perspective of the various service levels. The following provides key data results, followed by key capability achievements and key capability gaps (if the gaps and achievements findings were meaningful).

HCs II–IV

Exhibit 43. Health center CMM score by module (average score and range) (n=33)

Module	Average percent
Human Resources	48 percent (12–73 percent)
Logistics Management Information System	60 percent (36–89 percent)
Quality and Pharmacovigilance	18 percent (0–64 percent)
Warehousing and Storage	38 percent (26–59 percent)
Waste Management	36 percent (4–75 percent)

Exhibit 44. HCs II–IV level of achievement by functional area
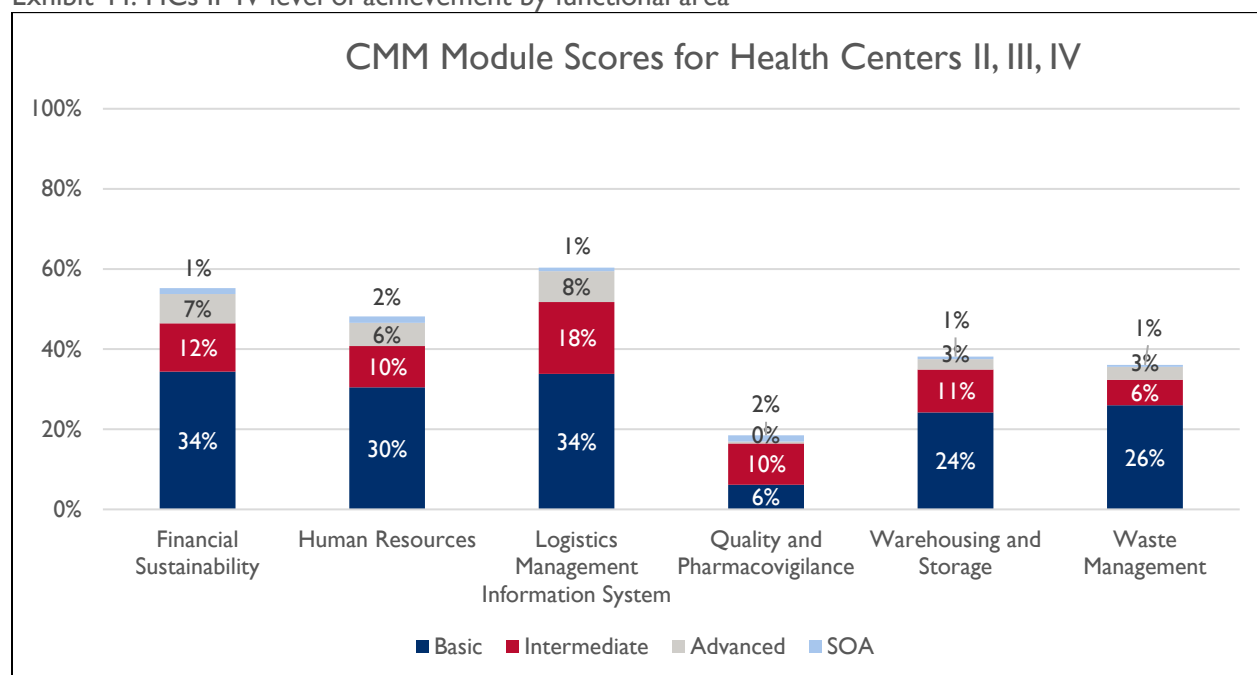
CMM Module Scores for Health Centers II, III, IV

Maximum score for Basic is 50 percent; for Intermediate, 30 percent; for Advanced, 15 percent; for State of the Art, 5 percent. For instance, if the Basic portion is 45 percent, it should be interpreted as 45/50. See Exhibit 9 for more detail on CMM scores.

Exhibit 45. Select key capability achievements, HCs II–14

Indicator	Percent achieved
Percentage of facilities with at least some supply chain staff receiving supportive supervision visits within the last year	81 percent

Exhibit 46. Select key capability gaps, HCs II–IV

Indicator	Percent achieved	Possible solutions
Percentage of facilities that stop issuance of a product based on an ADR	15 percent	Implement sensitization trainings to reinforce the importance of issuing safe products and proper ADR reporting
Percentage of facilities that had a budget shortfall for health commodities	42 percent	Advocate for larger budgets at the central government level to ensure proper funding for facilities

Exhibit 47. Select KPI results, HCs II–IV

Indicator	Result
Average no. of days per month with stockouts (overall for tracer commodities)	6.4 (2.1–13.9)
Percent of tracer commodities, out-of-stock on day of visit (overall)	22 percent (8–46 percent)
Percent of facilities SATP (overall for tracer commodities)	25 percent (13–36 percent)
Percent of facilities with 100 percent stockcard accuracy	55 percent (34–81 percent)

Summary of results and discussion

Overall composite maturity scores for the health facilities were generally below desired levels with a range of 18–60 percent; QPV scored the lowest (18 percent) and LMIS the highest (60 percent). While the composite LMIS score is 60 percent, nearly all HCs II–IV (91 percent) use a paper-based LMIS system for reporting, ordering, and recording supplies, which may contribute to the 55 percent average stockcard accuracy. While Uganda's health-care delivery model engages public and private participants, the MOH sets policy and strategic direction while the Ministry of Local Government (MOLG) engages in service delivery. Given this decentralized approach, the two biggest challenges identified by health facilities in last-mile delivery are uncertainty of delivery arrival and partial fulfillment of quantities requested. Upon receipt of inbound shipments, the most common actions HCs take are checks on quantity, remaining shelf life, and ordering forms. Nearly all (97 percent) maintain paper forms as proof of delivery, and 98 percent of facilities use a first expired, first out (FEFO) inventory management approach.

A review of warehousing and inventory management KPIs finds that HCs experienced an average of 6.4 days of stockout per month, translating to about one week per month where HCs had less than adequate inventory to offer patients. About 22 percent of tracer commodities were stocked out on the day of the assessment. KPI results revealed that just over half of the facilities (55 percent) maintained stockcards with 100 percent accuracy, with a range of 34–81 percent across facilities. Also related to patient product delivery, the top three barriers reported by SDPs to HR capacity are finances, workload, and training materials, which contributes to the 48 percent composite HR score across HCs II–IV. The low maturity scores across all capabilities negatively impact adequate service delivery at the HCs.

This is evidenced by the low average scores of KPIs on stockouts at HCs. It indicates a need to attend to all the supply chain areas at this facility level to ensure improvement in capability and performance.

Recommendations

- Address budget gaps. A total 64 percent of HCs have at least 51 percent of their budget covered by the government or cost recovery, with half of those facilities fully covering their operations with cost recovery. Although 92 percent of SDPs reported preparing budgets annually or more often, the gap of 49 percent budget coverage must be addressed for health facilities to move forward to improved financial management.

- Initiate improvements to reduce the number of days out of stock of the tracer commodities and the percentage of commodities that have stocked out within six months. Further analyze to understand the adverse impacts on patient care and service delivery.

- Conduct further analysis to identify how the FEFO practice relates to poor KPI stock data at the HCs, noting that the central-level facilities maintain commodity minimum-maximum inventory thresholds of two and eight months. Since SDPs report receiving commodities about to expire, focus more attention on the central-level distributers.

- Develop a comprehensive supply chain management policy, along with staff capacity building for all supply chain staff at all service levels. These initiatives will help increase supply chain skills and competencies. Give special attention to forecasting, pharmacovigilance, and national treatment guidelines.

General Hospitals

Exhibits 48–50 show results for general hospitals.

Exhibit 48. GH CMM score by module (average score and range) (n=17)

Module	Average percent
Financial Sustainability	65 percent (13–82 percent)
Human Resources	60 percent (12–73 percent)
LMIS	55 percent (36–89 percent)
Quality and Pharmacovigilance	21 percent (0–64 percent)
Warehousing and Storage	47 percent (29–61 percent)
Waste Management	44 percent (4–75 percent)

Exhibit 49. GH achievements by functional area
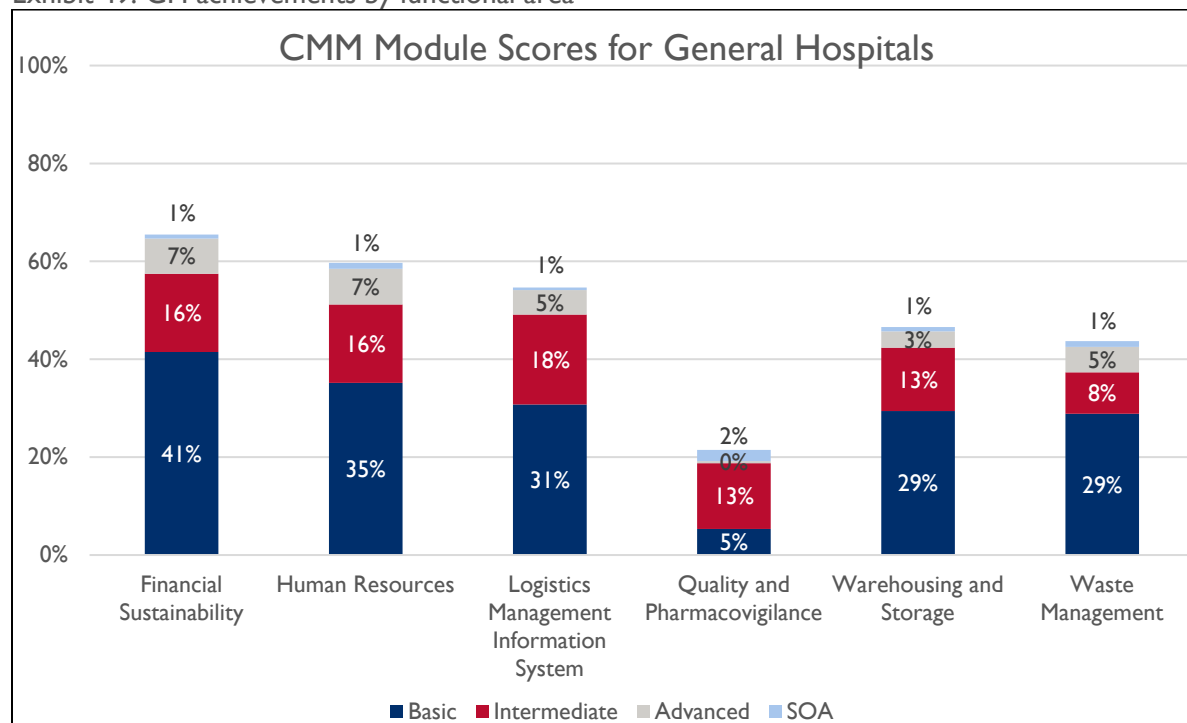
Maximum score for Basic is 50 percent; for Intermediate, 30 percent; for Advanced, 15 percent; for State of the Art, 5 percent. For instance, if the Basic portion is 45 percent, it should be interpreted as 45/50. See Exhibit 9 for more detail on CMM scores.

Exhibit 50. Select KPI results, GHs

Indicator	Result
Average no. of days per month with stockouts (overall for tracer commodities)	4.3
Percent of tracer commodities, out-of-stock on day of visit (overall)	11 percent
Stockout days for 182-day period (Nov. '17 to April '18)	9.8 days
Percent of facilities with 100 percent stockcard accuracy	65 percent
Percent of facilities with 100 percent eLMIS record accuracy	21 percent
Percent of emergency orders, out of all orders	3 percent

Exhibit 51. Select key capability achievements and gaps, GHs

Indicator	Result
Achievements	
Percentage of facilities that store expired products separately from usable product	87 percent
Percentage of facilities that have at least some supply chain staff receive supportive supervision within the last year	100 percent
Gaps	
Percentage of facilities conducting internal data quality assessments	27 percent
Potential solutions	
Update and implement updated DQA policy in coordination with appropriate training opportunities and tools	

Summary of results and discussion

Overall maturity scores at the GHs ranged from 21 percent to 65 percent. Quality and pharmacovigilance (21 percent) had the lowest score, and financial sustainability (65 percent), followed by human resources (60 percent), had the highest composite scores, although still below preferred levels. For GHs, 67 percent have tools available for pharmacovigilance, but 46 percent, or less than half, have action-oriented protocols based on PV results. Further, a look at possible action steps to take for an adverse drug reaction finds that only 21 percent of GHs identified halting issue of products after a reported adverse drug event (ADE), and only 46 percent identified notifying the NDA.

On a positive note, 100 percent of GHs default to best practices, having reported checking all inbound shipments for quantity and shelf life remaining. Further, 100 percent of GHs notify the warehouse or supplier when an order has an issue, and 97 percent fill out a discrepancy form. GHs reported challenges including partial deliveries (63 percent) and receipt of near-expiry drugs (41 percent), although it was not specified which commodities. Considering this challenge, 100 percent adhere to FEFO requirements. In all, 100 percent of GHs have an LMIS, but only 16 percent are fully electronic; 45 percent are still paper based, and 39 percent use a mix of both. Unsurprisingly, the lack of internet connectivity was cited by 100

percent of GHs as a barrier to using eLMIS, while 85 percent say insufficient staff capacity poses an additional challenge.

KPI stock indicators at the GH level reveal positive differences when compared with HCs II–IV. The average number of days per month with stockouts over all tracer commodities was 4.3. Over a six-month period, 9.8 stockout days were recorded. A total 65 percent of facilities maintain 100 percent stockcard accuracy, and on the day of the facility visit, enumerators recorded 11 percent of tracer commodities out-of-stock over all GHs. Further, the 3 percent emergency orders out of all orders placed metric may be misleading. Many facilities rely on a kit system for ordering commodities, with specific quantities requested by each district, and generally do not have the resources available to pay for the cost of placing an additional order.

Waste and stock management raise additional concerns. GHs had 14 percent of their total RHZE (first-line tuberculosis medication) supplies rendered unusable from expiry, damage, or theft. Considering the current state of waste management practices at GHs, these medicines could be disposed of in a way that would be unsafe for the hospital and surrounding community.

Recommendations

- Create SOPs for quality and pharmacovigilance, including actions to be taken in an ADR, and key notification points of contact at the NDA to ensure the information is being relayed and proper measures are taken.

- Operationalize PV, guided by appropriate policies from which strict guidelines and SOPs are developed to influence activities, such as ADR procedure and reporting protocol. Once these policies are operationalized at the central level, GHs should develop appropriate SOPs for the system.

- Strengthen inventory management and control through training, supportive supervision, mentoring, and data quality reviews.

- Investigate what caused such a large wastage of RHZE, develop and implement appropriate policies to avoid such waste in the future, and implement an appropriate waste management plan to safely dispose of the expired products.

RRHs

Exhibits 52–55 show results for RRHs.

Exhibit 52. RRH CMM score by module (average score and range) (n=6)

Module	Average percent
Financial Sustainability	66 percent (51–79 percent)
Forecasting and Supply Planning	35 percent (26–44 percent)
Human Resources	47 percent (23–62 percent)
LMIS	56 percent (40–77 percent)
Policy and Governance	20 percent (6–83 percent)
Procurement and Customs Clearance	60 percent (39–75 percent)
Quality and Pharmacovigilance	24 percent (4–45 percent)
Strategic Planning and Management	27 percent (0–60 percent)
Warehousing and Storage	50 percent (44–55 percent)

Exhibit 53. RRH of achievement by functional area
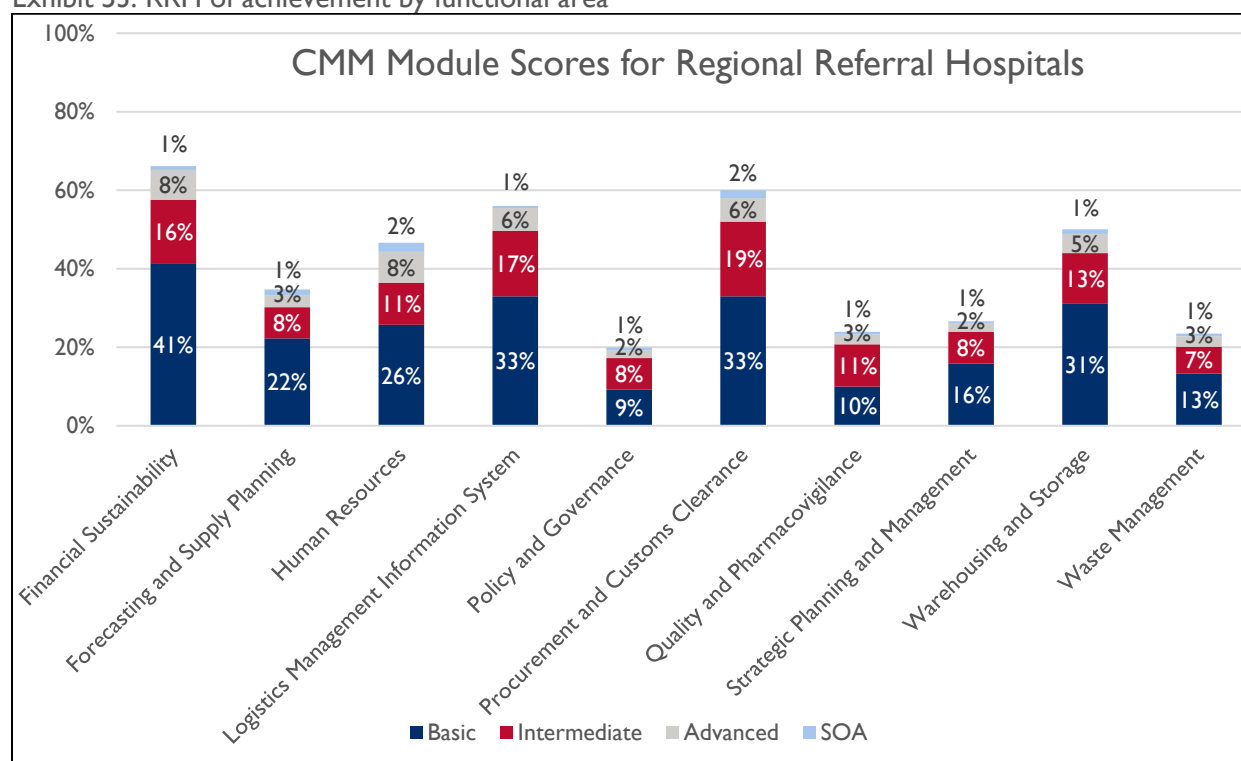
Maximum score for Basic is 50 percent; for Intermediate, 30 percent; for Advanced, 15 percent; for State of the Art, 5 percent. For instance, if the Basic portion is 45 percent, it should be interpreted as 45/50. See Exhibit 9 for more detail on CMM scores.

Exhibit 54. Select key capability achievements and gaps, RRHs

Indicator	Percent achieved
Achievements	
Percentage of facilities that have annual external audits of the procurement system	100 percent
Gaps	
Percentage of facilities conducting internal data quality assessments	13 percent
Percentage of facilities that collect KPI data on waste management	0 percent

Possible solutions

- Implement updated DQA policy in coordination with appropriate training opportunities and tools

Develop and implement sensitization training around the importance of continual, active monitoring of waste management practices and performance

Exhibit 55. Select KPI results for RRHs

Indicator	Result
Average no. of days per month with stockouts (overall for tracer commodities)	6.3
Percent of tracer commodities, out-of-stock on day of visit (overall)	11 percent (0–31 percent)
Stockout days for a 182-day period (Nov. '17 to April '18)	16.1
Percent of facilities with 100 percent stockcard accuracy	41 percent
Percent of facilities with 100 percent eLMIS record accuracy	19 percent
Percent of emergency orders, out of all orders	1 percent

Summary of results and discussion

The RRHs did not score above 80 percent in any of the modules in which they were assessed. The highest score was for financial sustainability, at 66 percent, followed by procurement and clearance system (60 percent), and LMIS at 56 percent. They scored the lowest in policy and governance (20 percent), waste management (23 percent), and quality and pharmacovigilance (24 percent). Similar results were reflected in the KPIs; respondents at the RRHs reported an average of 6.3 days per month of stockouts for the selected tracer commodities. On the day of the assessment, an average of 11 percent of the tracer commodities were stocked out at the RRHs, and for 16.1 days over the course of six months before the assessment. Less than half (41 percent) of the RRHs accurately maintained stockcards, one of the key forms for tracking movement of stock and proper inventory management. Furthermore, only 19 percent of the RRHs assessed maintained 100 percent eLMIS accuracy. Accurate reporting through eLMIS is critical

to ensure correct quantities of health commodities available at the sites are reported to the higher level, and similarly, correct quantities are resupplied to the RRHs. Only 1 percent of the total orders from the RRHs were emergency orders.

All (100 percent) RRHs identified the GOU as the source of funding for supply chain operations. Similarly, all RRHs prepare and update their budgets annually or more often. However, 40 percent of RRH staff interviewed noted a budget shortfall for the purchase of commodities in the last year, which can have a detrimental impact on the RRHs' ability to procure lifesaving commodities and serve their patient population. Of the total respondents from the RRHs, only 40 percent have a copy of the approved NPSSP, and even fewer (27 percent) have formally documented management policies or guidelines for their supply chain system. Only 13 percent of RRHs had M&E components in their strategic plans, and even more concerning, none of them (0 percent) reported having LMIS as part of their strategic plan. Only 13 percent of RRHs claim that strategic supply chain reforms identified in their plans are being implemented, and 67 percent of RRHs report supply chain risks are never assessed for their facility. These results could possibly explain overall low CMM scores at the RRHs. Further root-cause analysis can help identify reasons for poor performance at the RRHs.

RRHs received a composite score of 47 percent in human resources; none of the RRH respondents reported having a staff recruitment policy for supply chain positions, and only 33 percent noted a general recruitment policy that is applied to supply chain positions. None of the RRHs identified the following supply chain functions as part of the personnel job descriptions: forecasting and quantification, procurement, storage and inventory management, LMIS, ordering and reporting, waste management, and quality and pharmacovigilance. However, 87 percent of RRHs noted receiving training on SOPs as part of their capacity-building programs. All the RRH respondents (100 percent) noted that finance was a critical barrier to supply chain management capacity-building programs. These results underpin the poor results in human resources — without funding for supply chain positions, a staff recruitment policy, or inclusion of essential supply chain functions in staff job descriptions, staff are unlikely to perform routine supply chain functions effectively.

RRHs received one of the lowest scores (24 percent) for quality and pharmacovigilance. The results show that only 13 percent of RRHs have SOPS for product quality assurance/quality control available; furthermore, only 27 percent of RRHs have action protocols based on pharmacovigilance results, indicating that results from the quality checks and action protocols are often ignored and can lead to dispensing of poor-quality medicines and adverse drug reactions.

Although 100 percent of RRHs assessed reported forecasting their health commodity requirements and using consumption data for forecasting, only 13 percent involve the MOH forecasting and supply planning unit and only 20 percent involve the NMS.

RRHs received the second-highest score in procurement and customs clearance (60 percent). To highlight some of their achievements, all (100 percent) RRHs get their procurements approved by authorized personnel, all RRHs reported having formal external audits of the procurement system take place annually or more often and referencing EMLs during sourcing and procurement. However, a little over half (56 percent) reference their annual forecasts for their procurements. Conducting forecasting exercises but not using the data for making procurement decisions undermines the forecasting and quantification process and can likely result in inaccurate quantities procured.

Over half (60 percent) of the RRHs have warehousing and inventory management SOPs available; all RRHs receive a distribution schedule in advance from the issuing warehouse or supplier, informing the RRH staff of an upcoming delivery. However, in complying with proper storage guidelines, none of the RRHs (0 percent) had spill kits available; only 13 percent had a fire extinguisher, and less than half (47 percent) have an insulated and leak-free ceiling in their storerooms. These small changes can help ensure that health commodities are stored properly and maintain their quality and integrity.

Maintaining accurate records for stock keeping, reporting, and ordering resupplies is the backbone of good inventory management. All RRHs use either a paper-based LMIS or an eLMIS for stock management. An estimated 67 percent of the RRHs reported using eLMIS and paper-based LMIS, and 33 percent reported using only a paper-based LMIS. All (100 percent) of the RRHs also reported using LMIS data for informing M&E activities, reporting and ordering, and managing inventory. However, 80 percent of RRHs identified not having sufficient staff and data quality/data entry errors as challenges to using paper-based systems. Similarly, 80 percent of RRH staff interviewed also identified poor internet connectivity and lack of time due to other tasks as challenges to using the eLMIS. Use of multiple forms and registers creates an additional layer of work on already overstretched staff and leads to further system inefficiencies; over half (60 percent) of RRHs maintain anywhere from four to six different types of dispensing registers. RRHs scored only 23 percent for the waste management module. Only 13 percent of RRHs have SOPs available for waste management, which have never been updated, thereby providing no guidance and posing a serious challenge for RRHs staff in using safe and effective waste management practices. However, despite the lack of SOPs, 87 percent of RRHs send their waste to a higher-level government facility for disposal.

Recommendations

- Regional referral hospitals should put in place practices to monitor their own performance internally on a more regular basis.

- Conduct a deep-dive analysis to identify the root cause impacting policy and governance, waste management, and quality and pharmacovigilance.

- Standardize training to improve inventory management at the RRH level, which should include training on proper stock-keeping records and reports and for ensuring accuracy in LMIS reporting.

DHOs

Exhibits 56 and 57 show results for DHOs.

Exhibit 56. DHO CMM score by module (average core and range) (n=1)

Module	Average percent	Module	Average percent
Policy and Governance	25 percent	Human Resources	47 percent

Exhibit 57. DHO achievement by functional area
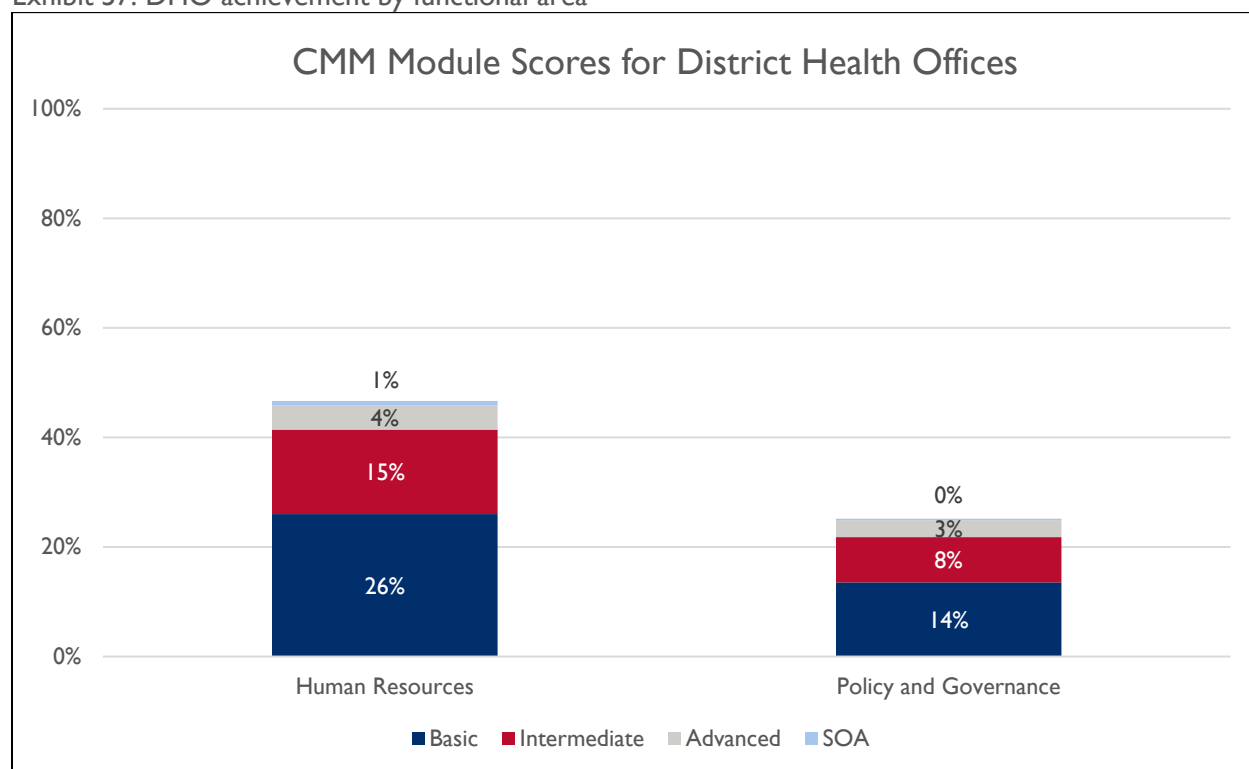
Maximum score for Basic is 50 percent; for Intermediate, 30 percent; for Advanced, 15 percent; for State of the Art, 5 percent. For instance, if the Basic portion is 45 percent, it should be interpreted as 45/50. See Exhibit 9 for more detail on CMM scores.

Summary of results and discussion

Since the DHO is an administrative unit at the district level, and not an SDP where services are rendered, only human resources and policy and governance modules are relevant. The DHO received a poor composite score of 25 percent for policy and governance. It received 14 percent for the basic elements. Only 13 percent of DHOs know if there is a publicly available list of registered health commodities, and only 25 percent of DHOs know if there are formally documented management guidelines for the supply chain system. However, 90 percent of DHOs did have STGs available. Nevertheless, the DHOs are not responsible for creating policies, but rather implement nationally established guidelines and policies. Most

of the questions in the module focus on availability of National Medicines Policy, frequency of revision of the policies, and inclusion of the various supply chain components in the policy. As the results reflect, many of these questions were not applicable to the DHO level in Uganda.

DHO also received a low capability score for human resources (46 percent). Only 29 percent of the DHOs have a generic staff recruitment policy, with no provisions or considerations for recruiting supply chain staff; the remaining 71 percent have no recruitment policy whatsoever in place. Almost all (91 percent) of the DHOs have a budget line item for supply chain personnel included in their government budget, with 43 percent having their entire budget requirement covered by the GOU budget, and 27 percent, with little of their budget covered by the GOU. Although 91 percent of DHOs received training on ordering and reporting, only 33 percent attended training that covered changes in national policy. Three-quarters of DHOs (73 percent) reported receiving a supportive supervision visit from the MOH, but only 33 percent have guidelines that include supervision visits for supply chain personnel. Proportion of staff participation in capacity-building programs varies widely; about a quarter of DHOs reported that more than half of their staff participated in capacity-building activities, while another third reported that 25 percent or fewer percentage of their staff participated in capacity building.

Recommendations

- Ensure widespread dissemination and implementation of the National Medicines Policy and STGs across all districts in Uganda. This can be achieved through sensitization workshops where staff are trained on the key components of the National Medicines Guidelines and the STGs.

- Develop a comprehensive human resource strategy based on an in-depth analysis for recruitment, training, and retention of supply chain staff across all supply chain levels.

- Provide technical assistance to DHOs to help improve the district budget planning, execution, and monitoring process to bolsters advocacy to GOU and efficient use of budget allocations.

- Ensure funding (or explore options for funding) for routine supportive supervision visits from the MOH to the DHOs.

Medical Bureaus

Exhibits 58 and 59 show results for medical bureaus.

Exhibit 58. Medical bureau CMM score by module (average score) (n=2)

Module	Average percent	Module	Average percent
Strategic Planning and Management	79 percent	Human Resources	55 percent

Exhibit 59. Medical bureau achievement by functional area
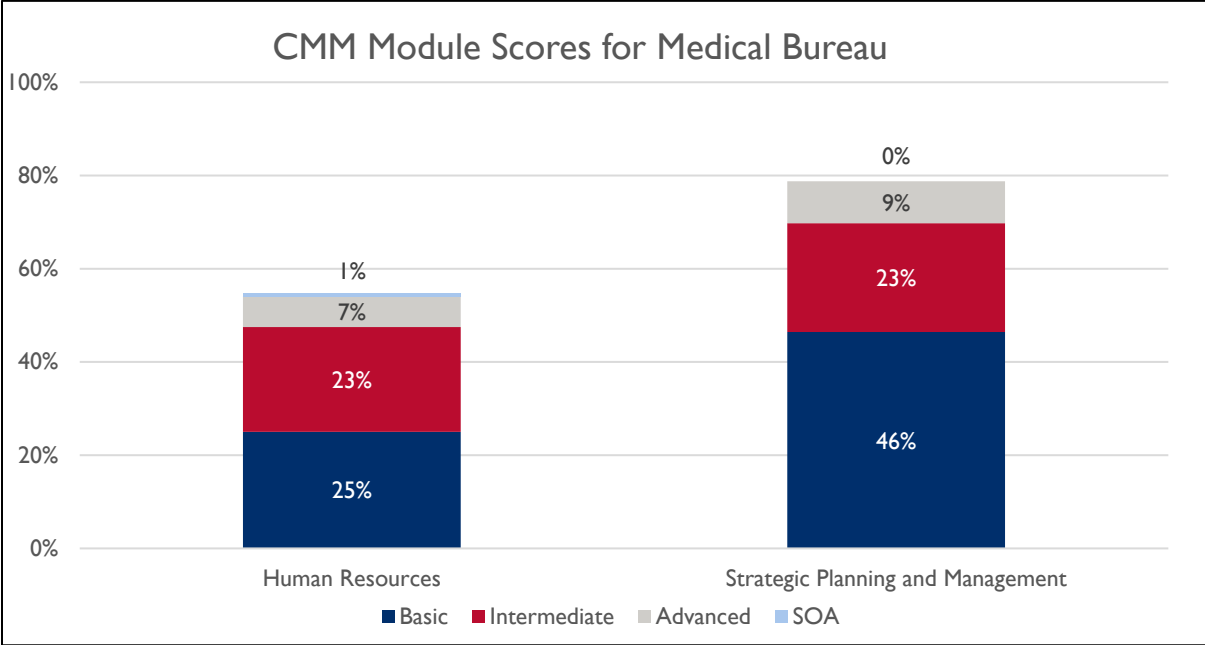
CMM Module Scores for Medical Bureau

Maximum score for Basic is 50 percent; for Intermediate, 30 percent; for Advanced, 15 percent; for State of the Art, 5 percent. For instance, if the Basic portion is 45 percent, it should be interpreted as 45/50. See Exhibit 9 for more detail on CMM scores.

Summary of results and discussion

Only human resources and strategic planning and management were assessed at the medical bureaus. They received an average score of 56 percent for human resources and a high score of 78 percent for strategic planning and management. The medical bureaus are registered faith-based nongovernmental organizations with the mandate of providing health services to the underserved population of Uganda. JMS was formed as a joint venture between the Uganda Catholic Medical Bureau and the Uganda Protestant Medical Bureau to ensure availability of quality medicines, and as such, they do not focus specifically on strengthening in-country supply chains.

JMS has since become an independent entity. Therefore, many of the questions in the human resources module were not applicable, as they pertain to human resources focused specifically on public health supply chains. For example, while the medical bureaus do have a medicine management supervisor on

staff, they do not have a separate recruitment or performance evaluation process for supply chain staff; all their staff follow the broader human resources policies. Similarly, for strategic planning, no supply chain strategy documents are specific to the bureaus. Understandably so, they have referenced JMS supply chain strategy documents when answering questions for strategic planning modules. However, they do have a formal strategy for engaging in public-private partnerships.

Recommendations

- Implement capacity-building efforts specifically on supply chain systems strengthening to build bureau staff capacity.

National Drug Authority

Exhibits 60 and 61 show results for the NDA.

Exhibit 60. NDA CMM score by module (n=1)

Module	Average percent
Policy and Governance	26 percent
Quality and Pharmacovigilance	57 percent
Strategic Planning and Management	87 percent
Waste Management	76 percent

Exhibit 61. NDA of achievement by functional area
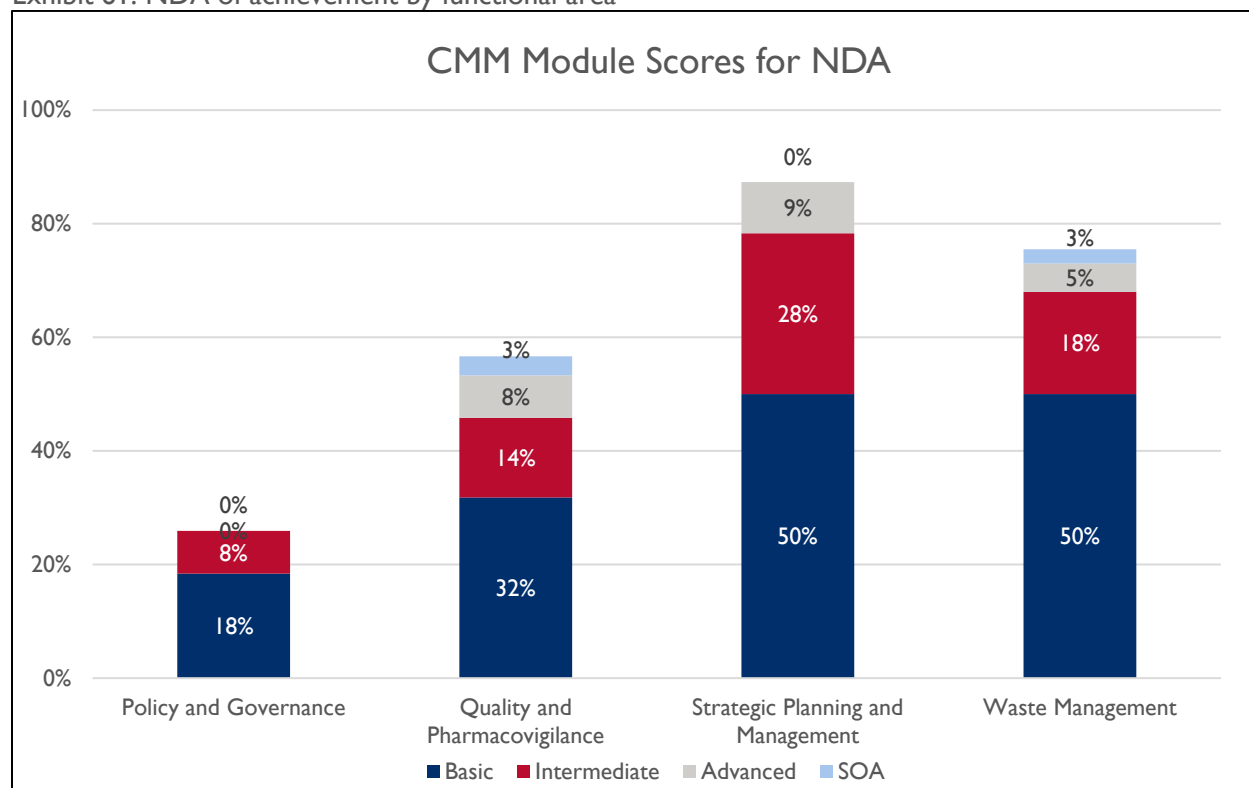
Maximum score for Basic is 50 percent; for Intermediate, 30 percent; for Advanced, 15 percent; for State of the Art, 5 percent. For instance, if the Basic portion is 45 percent, it should be interpreted as 45/50. See Exhibit 9 for more detail on CMM scores.

Summary of results and discussion

The overall scores for NDA ranged from 26 percent for policy and governance to 87 percent for strategic planning and management. The low score for policy and governance is because many of the questions in this section were not applicable to the NDA.

The central-level assessment team noted these observations during the interview. NDA is not the responsible entity for establishing supply chain policies and guidance. This mandate is the responsibility of the MOH. No formally documented guidelines or policies are in place for any of the supply chain functions at the NDA, nor a formal, high-level committee that provides oversight and governance for the supply chain.

NDA scored 57 percent for quality and pharmacovigilance, with 32 percent of the 50 percent of the basic elements in place. Some of the accomplishments of the NDA include: 1) a formal product quality assurance strategy and QA approval guidelines are in place and 2) QA testing is conducted, either at an in-house lab or at an outsourced private sector lab. However, it takes about two weeks to a month to receive the results. SOPs for QA were not available on the day of the visit, but NDA staff interviewed stated a renewal of the guidelines every three years.

NDA received the impressive score of 87 percent in strategic planning and management, meeting all the basic requirements. Score contributions include: 1) having the national pharmaceutical sector strategic plan, 2) availability of a supply chain operational plan, which is monitored quarterly, and 3) a formal strategy for engaging with the private sector to improve supply chain performance. NDA also received a relatively high score of 76 percent for waste management, with a maximum possible score of 50 percent from the basic elements. NDA has in place approved national waste management guidelines and SOPs that are updated every three years. Waste management practices are monitored through regular KPI collection, internal/external audits, and onsite monitoring.

Recommendations

The NDA should:

- Capitalize on the opportunity presented by the unsatisfactory level of PV reporting at the facility level. Revise guidelines, currently updated every three years, and provide refresher training to facilities on reporting ADRs and other PV information.

- Update guidelines and conduct sensitization trainings to help reinforce the importance of safe disposal of expired pharmaceuticals and good pharmaceutical waste management at health facilities.

- Develop formal guidelines to ensure the NDA's supply chain responsibilities are codified.

Ministry of Health

Exhibits 62 and 63 show results for the MOH.

Exhibit 62. MOH achievement by functional area
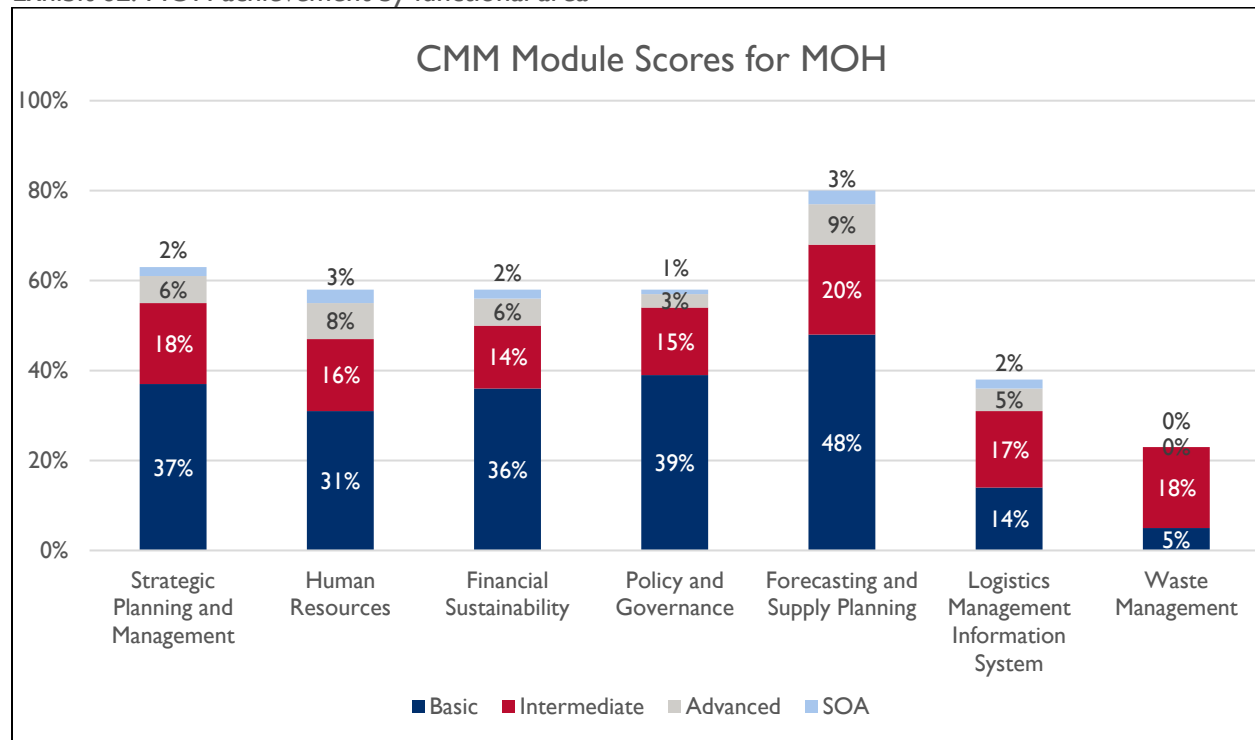
CMM Module Scores for MOH

Maximum score for Basic is 50 percent; for Intermediate, 30 percent; for Advanced, 15 percent; for State of the Art, 5 percent. For instance, if the Basic portion is 45 percent, it should be interpreted as 45/50. See Exhibit 9 for more detail on CMM scores.

Exhibit 63. MOH CMM score by module (n=1)

Module	Score percent
Strategic Planning and Management	66 percent
Human Resources	56 percent
Financial Sustainability	56 percent
Policy and Governance	57 percent
Forecasting and Supply Planning	77 percent
Logistics Management Information System	37 percent
Waste Management	23 percent

Summary of results and discussion

CMM performance at the MOH ranged from 23 percent for waste management to 77 percent for FASP. The basic-level score for FASP was 48 percent, while for strategic planning, human resources, financial sustainability, and governance, it ranged anywhere from low to high 30s. LMIS scored poorly for the basic level (14 percent) and overall (37 percent). Waste management had the lowest basic-level score of only 5 percent, but with an intermediate score of 18 percent out of the possible 30 percent. A reason for the low scores for waste management is that developing guidelines for waste management is not considered the responsibility of the MOH. Other gaps identified in waste management include lack of national guidelines, lack of SOPs, and whether they were updated was unclear, and no software program is used to track waste management. However, waste management is monitored by an internal audit and collection of KPIs.

Commodities and supply chain operations are funded by the development partners and the GOU. However, the GOU only partially funds supply chain operations; budget shortfalls are addressed through budget cuts, internal reallocation of funds, and funding donor in-kind donations from development partners. The MOH has a National Medicines Policy, updated every five years, that includes the supply chain. It also has the approved NPSSP, and a supply chain implementation plan, which is monitored quarterly. An oversight governing body is in place for the supply chain whose members are exclusively appointed by the central government. STGs are available and revised every three years. Although a formal process for registering new drugs exists, it can take more than a year to complete registration.

The MOH has a performance monitoring plan in place, and it is regularly reviewed by the oversight board. Respondents identified some of the supply chain risks, which include finance, operations, and technology. Although HR received a composite score of 56 percent, the MOH does have an HR workforce plan in place, and all positions at the MOH level are have some level of funding allocated through the GOU. A generic recruitment policy is in place. Some of the positions funded and staffed at the MOH for completing supply chain functions include FASP, distribution, and product selection. Most of the staff (51–99 percent) reported receiving some type of supply chain training in the past year. Barriers to attending SCM training at the MOH include staff workload, lack of skilled trainers, lack of interest, and lack of time.

The MOH uses the paper-based LMIS and eLMIS for recording, reporting, and ordering commodities. Reporting has been harmonized across various levels and programs. Paper reports are submitted monthly, while the eLMIS reports are done weekly. However, using the eLMIS reports presents challenges, which include internet connectivity, central system failure, lack of skilled staff, data loss, and data analysis. Though the MOH uses an eLMIS, it does not capture some of the key logistics data including adjustments, losses and expiries, issues and receipts, and expiry dates. Furthermore, paper-based LMIS captures only a few of the key logistics data required for decision making. SOPs for the eLMIS are available but are updated every three years. The MOH does not track KPIs for timeliness, completeness, or accuracy of reports submitted. The GOU has minimal funding in the budget for LMIS.

With a 77 percent composite score, the MOH scored the highest for FASP. Achievements include the dedicated QPPU, which leads the forecasting exercise and also includes other stakeholders, such as other MOH staff, NMS staff, development partners, vertical disease program representatives, consultants, and lower-level facility staff in completing one-, two-, or three-year forecasts; forecasting and supply planning are conducted using all available and relevant data; supply plans are built and monitored monthly; and

forecast accuracy is assessed each year. Standard forecasting software is used for the forecasting and supply planning exercise. The MOH receives technical support through staff secondments. The MOH should review staffing structures to ensure this support is sustainable internally when the secondments cease.

Recommendations

The MOH should:

- Conduct a root-cause analysis to better understand the underlying reasons for poor scores and lack of appropriate systems, guidelines, and SOPs for ensuring proper waste management at the MOH.

- Prioritize improving eLMIS accessibility and usability. This can include increased investments in technology infrastructure, staff training on eLMIS, and additional staff to support data quality and analysis.

- Include in its budget specific line items for improvements/enhancements in eLMIS and paper-based LMIS. Assess original eLMIS and paper-based LMIS to identify missing logistics data points from the paper-based LMIS and the eLMIS.

- Explore innovative financing mechanisms to sustain its operations. This may include collaborating with other private sector partners as part of public-private partnerships. Conversely, the MOH should assess its operations and highlight efficiency gaps; these gaps should inform strategies for leaner operations, cost savings, and enhanced financial sustainability.

- Have as a main priority a comprehensive human resources and workforce development strategy for recruiting, training, and retaining supply chain personnel at all health system levels.

- Support the MOH in reviewing the health sector supply chain management structure with a view of strengthening commodity management at all levels.

National Medical Stores

Exhibits 64–67 show results for NMS.

Exhibit 64. NMS central warehouse achievement by functional area
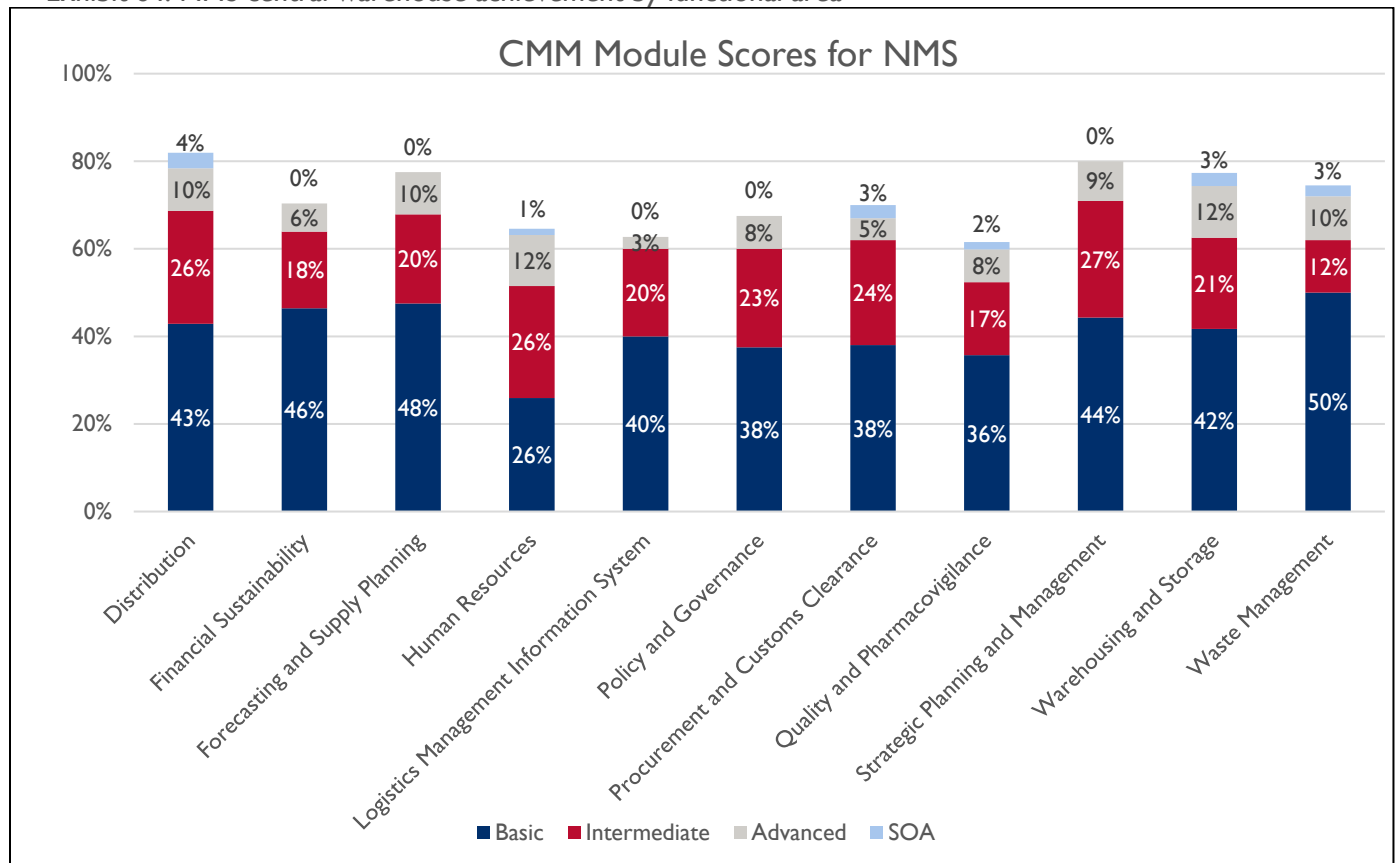
CMM Module Scores for NMS

Functional Area	Basic	Intermediate	Advanced	SOA
Distribution	43%	26%	10%	4%
Financial Sustainability	46%	18%	6%	0%
Forecasting and Supply Planning	48%	20%	10%	0%
Human Resources	26%	26%	12%	1%
Logistics Management Information System	40%	20%	3%	0%
Policy and Governance	38%	23%	8%	0%
Procurement and Customs Clearance	38%	24%	5%	3%
Quality and Pharmacovigilance	36%	17%	8%	2%
Strategic Planning and Management	44%	27%	9%	0%
Warehousing and Storage	42%	21%	12%	3%
Waste Management	50%	12%	10%	3%

Maximum score for Basic is 50 percent; for Intermediate, 30 percent; for Advanced, 15 percent; for State of the Art, 5 percent. For instance, if the Basic portion is 45 percent, it should be interpreted as 45/50. See Exhibit 9 for more detail on CMM scores.

Exhibit 65. Select KPI results of NMS

Indicators	NMS
Percent of international reference price paid (average of five tracer products)	83 percent
Average supply plan accuracy	100 percent
Forecast accuracy	94 percent
eLMIS record accuracy	97 percent
Percent of time experiencing temperature excursion in 182-day period	5.99 percent
Percent of products procured that are on the NEML	84 percent
Average turnaround time for downstream order	20.95 days
Vendor OTD rate (+/–0 days of promised delivery date)	3 percent
Downstream facilities submitting a full report	97 percent
Downstream facilities submitting a full report, on time	94 percent
Stockout for any tracer commodities on the day of the visit	0 percent
SATP	60 percent

Exhibit 66. Source of funds for operations and products for NMS

Source	Percent
Government of Uganda	26 percent
Global Fund	32 percent
Gavi and other vaccine donors	18 percent
U.S. government	1 percent
Vector Control/MOH	16 percent
Other donors	6 percent

Exhibit 67. NMS months of stock on day of visit

NMS Months of Stock on Hand on Day of Visit

Bars (months of stock):
- TLE: 1.47
- Male Condoms: 0.19
- Malaria RDTs: 2.89
- LLINs: 0.00
- RHZE: 3.69
- ORS + Zinc: 6.57
- Tetanus: 0.55
- Oxytocin: 0.25
- AL 6x4: 7.19
- Amoxicillin: 1.86
- Metformin: 4.07
- HIV RTK: 1.64

Max Stock Level: 8.00
Min Stock Level: 2.00
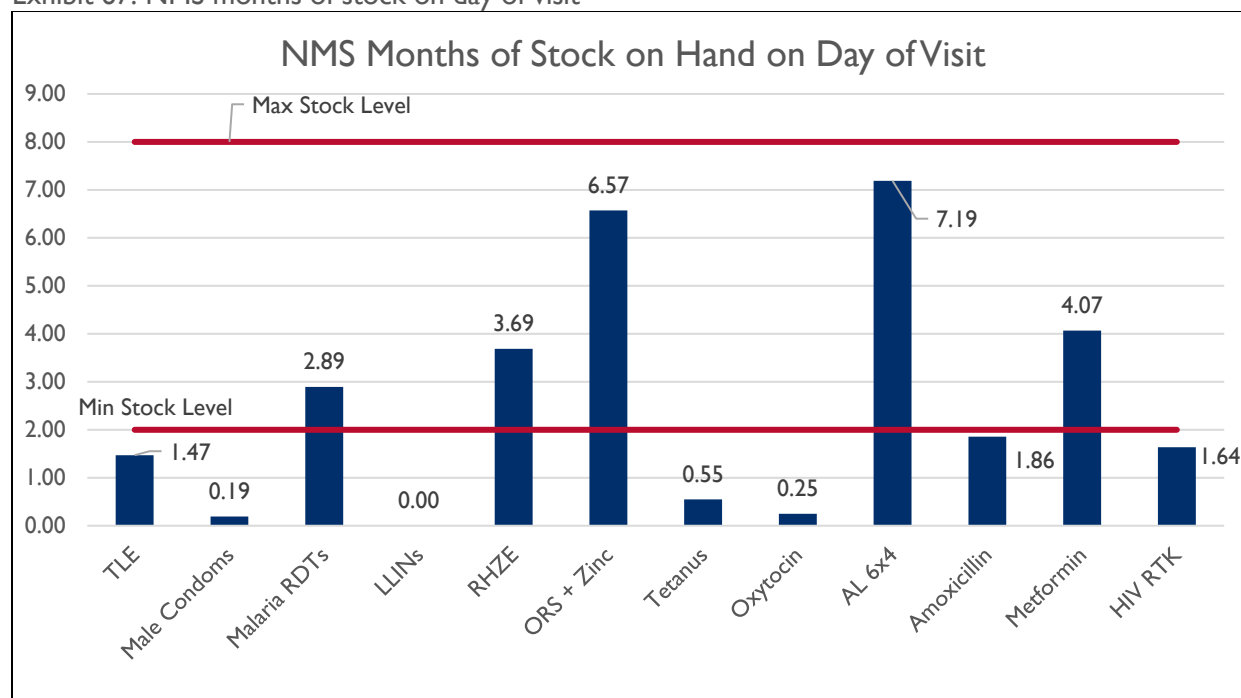
Summary of results and discussion

NMS scored the highest in distribution (82 percent), followed by strategic planning and management (80 percent). Meanwhile, it scored the lowest in quality and pharmacovigilance (62 percent), followed by LMIS (63 percent). In waste management, NMS scored the maximum for basic elements, at 50 percent.

The individual questions within each supply chain module highlight many NMS achievements. For example, NMS has a strategic plan with all the critical components of supply chain management, including HR, M&E, warehousing, LMIS, finance, and policy and governance. The only exception was waste management, which was not included in the plan — the omission of waste management considerations is a theme throughout the Ugandan health commodity supply chain. The strategic plan is updated every three years. NMS also has a supply chain implementation plan, which is monitored annually. Based on results of the plan, the following actions are taken: mobilizing finances and resources, promoting supply chain efficiencies, improving supply chain management and leadership, and enhancing partnerships and collaborations. While SOPs and guidelines at NMS are formally documented, one gap identified is missing some of the key components of supply chain management sections, including the LMIS, financing, and human resources. Also, there is a lack of civil society organizations and regional/local government personnel on the governance body.

NMS received a composite score of 65 percent in HR, with only 26 percent for the basic elements; however, it received 26 percent of 30 percent for intermediate, and 12 percent of the possible 15 percent for advanced. Some of the reasons for a high intermediate and advanced score are existence of an HR

plan, with budget for supply chain personnel; 100 percent of the supply chain positions funded through the GOU; and existence of job descriptions for all supply chain staff that include all the relevant supply chain components except for waste management. Staff receive training; however, capacity-building programs offered by development partners and other stakeholders are not aligned with those offered by NMS. The GOU budget or facility revenue/cost recovery contributes 100 percent to the recurring human resource costs.

In financial sustainability, most of the basic elements are in place (46 percent). The government budget or facility revenue/cost recovery contributes only some of the total supply chain operations budget. Last year, NMS reported a budget shortfall for supply chain operations. NMS prepares its budget annually and relies on the GOU, donors, and in-kind donor support to fill funding gaps. In quality and pharmacovigilance, a key achievement noted is that 100 percent of Certificates of Analysis and Certificates of Conformance are recorded for medicines received from international and domestic sources.

NMS has in place 48 percent of all the basic elements for FASP. The KPI results further validate the CMM results: the results show an average of 100 percent supply plan accuracy and 87 percent forecast accuracy rate. The QPPU at the MOH leads the forecasting efforts annually for NMS in collaboration with other MOH staff, including representatives from the vertical disease program, NMS, development partners, and other supply chain staff from warehouses and SDPs. All data sources (morbidity, consumption, demographic, and service statistics) are used, and the supply plan is shared with external partners. Logistics data including stock on hand, consumption, shipment, financial cycles, and lead times are considered when completing the forecast. For procurement and customs clearance, some of the achievements include the presence of all internal controls, procurement documents for bidding and sourcing, and a formal ethics governance body to ensure effective procurement. Customs clearance is all done in-house; it typically takes three days to a week to get products out of the port of entry. NMS checks all commodities for quality, shelf life, and carton and pallet count, and ensures relevant documentation is in in place. It also practices FEFO when issuing commodities.

In the six months before the assessment, NMS experienced a temperature excursion only about 6 percent of the time (see Exhibit 65 above). An accomplishment for warehousing is the use of a warehouse management system (WMS), used to track and manage inventory. Exhibit 67 and the KPI results above show five out of the 10 commodities stored at NMS were stocked below the established minimum-maximum inventory control level; none were stocked above the maximum, and no stockouts were noted on the day of the visit. However, oxytocin, tetanus, and male condoms had a half month or less of stock on hand.

With a composite score of 82 percent for distribution, NMS is above the benchmark in performance of 80 percent and has many of the advanced and SOA elements in place. NMS has an approved distribution plan, and distribution routes are reviewed annually. The GOU covers 100 percent of the distribution budget. Distribution SOPs are also available. Distribution is integrated across various programs and partners to streamline and make more efficient use of transportation. The truck capacity and geographic location are considered when planning distribution routes. Transportation data are captured daily or in real time. RFID tags are used as a security measure as well as GPS, barcode scanning, unannounced inspections, and partnerships with local policy precincts. While NMS has a strong distribution system in place, 33 percent of health centers, 41 percent of general hospitals, and 67 percent of regional referral

hospitals identified delivery of near-expiry commodities as a challenge faced in last-mile delivery of commodities. This challenge should be carefully investigated to understand the effect of current distribution practices.

NMS received one of the lowest scores in the LMIS module (63 percent). Although the SOPs for the paper-based and eLMIS are available and both are used, many challenges impede the use of the eLMIS, including internet connectivity, system failure, availability of computers, limited staff skilled in eLMIS, data quality or data entry errors. LMIS data are used to inform ordering and reporting, FASP, procurement, reverse logistics, inventory management, and budgeting. For waste management, NMS updates its SOPs annually, and all disposals are authorized, documented, and completed according to established procedure. UMPP is disposed of by inertization or solidification followed by disposing of treated waste residues by landfill or through contracting with a certified third-party waste management company in charge of pick-up and disposal.

Recommendations

NMS should:

- Conduct a root-cause analysis to understand the impacts of the minimum and maximum stock-on-hand ranges. Conduct additional investigations to see if there are potentially more appropriate thresholds to set by product.

- Align development partner capacity-building efforts for supply chain staff with those of the MOH.

- Investigate more innovative financing mechanisms with the private sector to address the budget shortfall for supply chain operations at NMS. The current approach to fill the gaps with a mix of government, development partner, and in-kind support is not sustainable long term.

- Conduct a root-cause analysis to understand what impact NMS warehousing and distribution practices has on service delivery points reporting delivery of near-expiry drugs and recommend appropriate changes to adjust practices.

- Revise and incorporate the missing components of the supply chain functions into their SOPs. These include LMIS, financing, and human resources.

- Explore solutions to address the challenges faced with the use of the eLMIS. These can include provision of computers for staff using the eLMIS; capacity building, including on-the-job training for staff requiring training; and instituting quality checks to ensure data accuracy.

- Conduct a thorough review of the quality and pharmacovigilance and develop an improvement plan to increase NMS's score from 63 percent to at least 80 percent.

Joint Medical Stores

Exhibits 68–72 show results for JMS.

Exhibit 68. JMS CMM score by module

Module	Score percent
Distribution	60 percent
Financial Sustainability	81 percent
Forecasting and Supply Planning	57 percent
Human Resources	72 percent
LMIS	56 percent
Policy and Governance	64 percent
Procurement and Customs Clearance	81 percent
Quality and Pharmacovigilance	92 percent
Strategic Planning and Management	68 percent
Warehousing and Storage	79 percent
Waste Management	81 percent

Exhibit 69. JMS levels of achievement by functional area
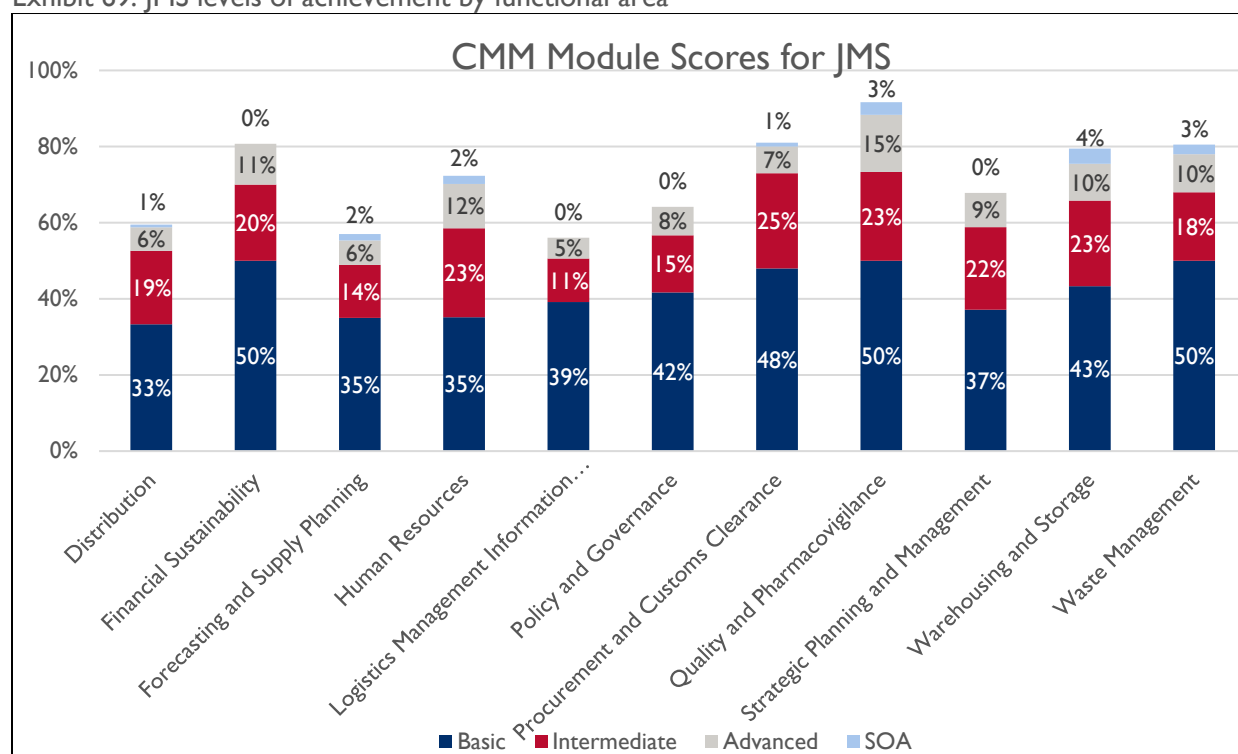
CMM Module Scores for JMS

Legend: Basic, Intermediate, Advanced, SOA

Functional Area	Basic	Intermediate	Advanced	SOA
Distribution	33%	19%	6%	1%
Financial Sustainability	50%	20%	11%	0%
Forecasting and Supply Planning	35%	14%	6%	2%
Human Resources	35%	23%	12%	2%
Logistics Management Information...	39%	11%	5%	0%
Policy and Governance	42%	15%	8%	0%
Procurement and Customs Clearance	48%	25%	7%	1%
Quality and Pharmacovigilance	50%	23%	15%	3%
Strategic Planning and Management	37%	22%	9%	0%
Warehousing and Storage	43%	23%	10%	4%
Waste Management	50%	18%	10%	3%

Maximum score for Basic is 50 percent; for Intermediate, 30 percent; for Advanced, 15 percent; for State of the Art, 5 percent. For instance, if the Basic portion is 45 percent, it should be interpreted as 45/50. See Exhibit 9 for more detail on CMM scores.

Exhibit 70. Select KPI results for JMS

Indicators	Percent
Percent of international reference price paid (average of five tracer products)	61 percent
Average supply plan accuracy	88 percent
eLMIS record accuracy	119 percent
Forecast accuracy	96 percent
Percent of time experiencing temperature excursion in a 182-day period	0.12 percent
Percent of products procured that are on the NEML	88 percent
Average turnaround time for downstream order	16.35 days
Vendor OTD rate (+/– 0 days of promised delivery date)	0 percent
Downstream facilities submitting a full report	68 percent
Downstream facilities submitting a full report, on time	58 percent
Stockout for any tracer commodities on the day of the visit	0 percent
SATP	33 percent

Exhibit 71. Source of funds for operations and products for JMS

Source	Percent
U.S. government	68 percent
Cost Recovery JMS	27 percent
Global Fund The AIDS Support Organization	2 percent
Government of Uganda	2 percent

Exhibit 72. JMS months of stock on hand on the day of the visit
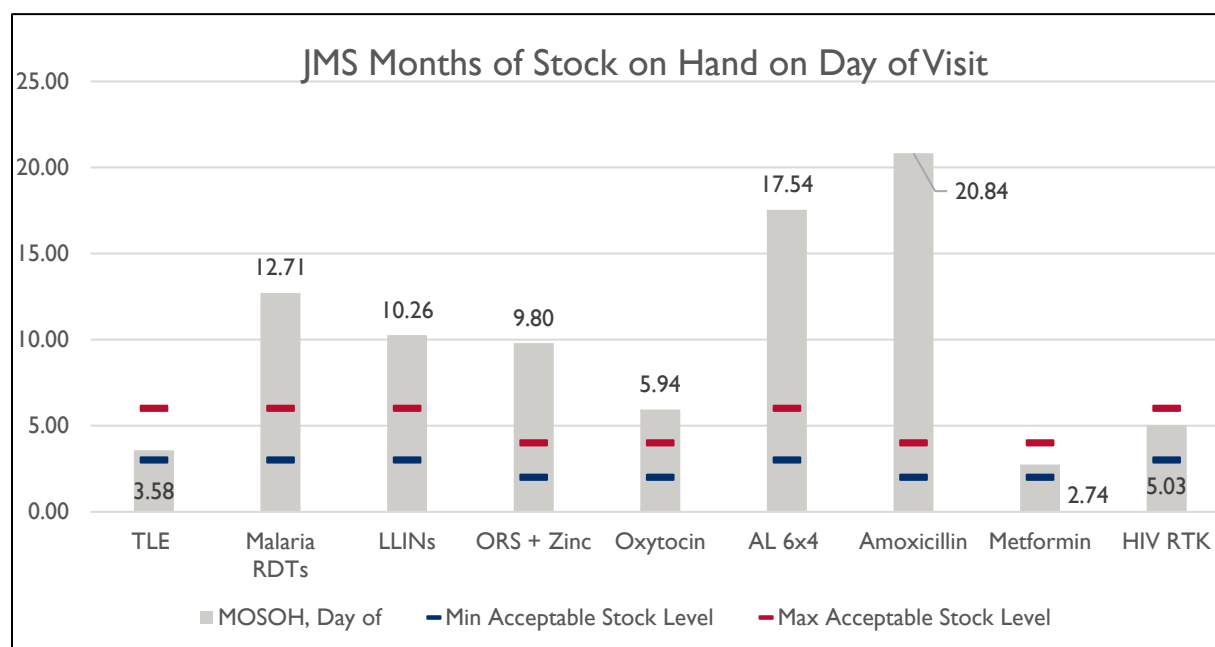
Summary of results and discussion

JMS scored above 80 percent in four modules: financial sustainability, procurement and customs clearance, quality and pharmacovigilance, and waste management. Overall, most scores ranged between 57 percent (FASP) and 92 percent (quality and pharmacovigilance).

JMS has an approved national pharmaceutical sector strategic plan, updated annually, that includes all relevant supply chain components except quality assurance, quality control, and waste management. JMS also prepares an annual supply chain operational plan. For financial sustainability, JMS has all the basic elements in place, with a maximum possible score of 50 percent. Cost recovery and facility revenue contribute to most (51–99 percent) of the total supply chain operations budget. Since JMS is privately owned, it has its own governance body, comprised of shareholders. None of the supply chain positions receive funding from the government budget, either at the national or subnational level. A general

recruitment policy is in place that is applied to supply chain positions, but it is not specific to the supply chain.

JMS leads its own annual forecasting exercise for essential medicines and health supplies, using only consumption data that factor wastage and missed demand. Before procuring, JMS uses forecasts to inform ordering and mobilize resources from outside entities, but no formal process is in place to update supply plans, and changes are not communicated to downstream facilities. Also, it does not seek input from the MOH, other programs, or development partners — a practice that can likely result in inaccurate or incomplete forecasts as evidenced from the results in the KPI scores in Exhibit 71 above. JMS scored an 88 percent supply plan accuracy, indicating that 88 percent of the time, JMS procures the quantities as stated in its supply plans. For forecasting accuracy, JMS scored 96 percent, signifying that its forecasts are relatively in line with its anticipated need. This result is discordant with the months of stock data in Exhibit 70 and the KPI indicators above, which show that 67 percent of the tracer commodities are stocked either below or above their maximum inventory control parameters of two and eight months, respectively. Although none of the tracer commodities were stocked out on the day of visit, results of Exhibit 72 show that most of the tracer commodities are overstocked, with up to 21 months of stock for amoxicillin and 17.5 months of stock on hand (MOSOH) for AL 6x4.

For warehousing and inventory management, JMS had a composite score of 79 percent. With its primary mandate to store and manage inventory of health commodities, JMS has established SOPs that are used for efficient inventory management; it also meets all the basic requirements for appropriate storage, including availability of pallets, vents, proper cold chain maintenance, and regular temperature monitoring. JMS uses a WMS to track and manage inventory. Although JMS has an approved distribution plan, with pre-planned routes, it does not consider truck capacity, product volumes, or geographic locations. As a security measure, JMS uses integrated audit procedures, which include barcode scanning and unannounced inspections. JMS scored the lowest in the LMIS module (56 percent), even though it has a robust WMS, which is used to track and manage inventory. However, it doesn't seem to translate to the use of LMIS or the eLMIS. Insufficient use of eLMIS or LMIS might be one reason for the forecast accuracy score of 96 percent.

JMS uses a paper-based LMIS and an eLMIS, with SOPs in place that are updated annually. LMIS tools are standardized across the various supply chain levels, which track completeness and timeliness of reporting by lower-level facilities. The biggest challenges to eLMIS use are Internet connectivity, lack of time, insufficient human resources, and data quality.

A key accomplishment at JMS is the existence of formally documented policies that cover all essential areas of the supply chain, with one major exception of FASP — a critical gap in its policies. Some other notable accomplishments include putting in place quality control and quality assurance mechanisms, which include conducting quarterly or testing pharmaceutical products more often at accredited laboratories and recording Certificates of Analysis and Certificates of Conformance for all medicines received from domestic and international sources. Also, procurement at JMS is done based on established control mechanisms and documented processes as outlined in the SOPs. Proper waste management is prioritized at JMS; SOPs are updated every two years, the waste disposal process is well documented and integrated into the WMS, and any UMPP is stored separately.

Recommendations

- Because the low score in forecasting and supply management may be driven partly by the low score in LMIS, conduct a deep-dive analysis to identify root-cause issues followed by an improvement plan, including training JMS supply chain staff in proper LMIS use.

- Review procurement and stock management practices, as several commodities had more than one year of stock on hand over the maximum acceptable stock level. Conduct a root-cause analysis to understand how to adjust procurement, storage, and distribution practices to avoid this situation in the future.

- Ensure JMS includes various stakeholders and partners when conducting its forecasting and supply planning exercises. Include key logistics data from different partners in building forecasting assumptions to avoid procuring more than needed and to prevent overstocks and expiries.

- Because there is a possible connection resulting in low scores for policy and governance and strategic planning and management, conduct a high-level review of JMS strategy design and policy adherence to ensure these items are improved.

Areas for Further Investigation

Central-Level Stock Thresholds

In visits to the central level, the team found that NMS and JMS had stock levels far outside of the established minimum and maximum levels. For example, JMS had more 20 MOSOH of amoxicillin and 17.54 MOSOH of the ACT AL 6x4. Root-cause analysis is needed to understand how this is occurring. NMS has established minimum and maximum levels that are uniform across all products. However, since each product has a unique demand profile, understanding and applying appropriate thresholds would increase efficiency and reduce waste. A wide range of MOSOH at the central level could be leading to the issues observed downstream, where HCs report receiving commodities about to expire. Further analysis should be conducted on how to strengthen application of the FEFO practice to improve poor KPI stock data at the HCs. Root-cause analysis is required to disentangle the effects of NMS's obligatory six-month minimum and maximum levels and overstocking commodities that had adequate shelf life, but no demand. This obligatory stocking-level policy could potentially be having an impact on a broad range of issues downstream.

RRHs

As the most advanced service delivery facility, RRHs are performing worse than lower-level counterparts, from a supply chain perspective. They typically performed the worst across all areas (KPIs and CMMs). Capacity improvements and investment are needed in eLMIS, waste management, quality assurance and pharmacovigilance, stock management, and human resources. With eLMIS and stock management, of the RRHs:

- 13 percent had strategic plans with M&E components in them

- None (0 percent) reported having LMIS as part of their strategic plan

- 19 percent had 100 percent eLMIS record accuracy

- 41 percent had 100 percent stockcard accuracy

RRHs also had commodities SATP only 24 percent of the time, on average, with 9 percent of the 182-day period measured with a stockout. With 27 percent of positions vacant at RRHs and the lowest human resource CMM score of any facility type, RRHs have significant room for improvement in recruiting, managing, and supporting supply chain staff in these facilities. Root-cause analysis of these issues would help in understanding how best to improve performance.

Human Resources

A consistent finding, below the central level, is insufficient staffing levels for supply chain. Across Uganda, RRHs, GHs, and HCs have concerning levels of vacancy. There is an urgent and pressing need to lobby GOU to ensure that these positions are funded, and supply chain–specific recruitment policies are developed and used to hire and retain staff in these important positions. These concerns also influence the workloads of central-level entities. For example, JMS must hand-compile consumption and stock management reports from lower-tier facilities, as the HCs are simply unable to enter the LMIS data themselves. This creates a twofold problem: HCs seem less understaffed than they are, and JMS staff have less time to focus on high-level supply chain issues. A recommitment to ensuring adequate staffing at public and PNFP sites will be critical to realizing any sustained improvements to the Ugandan PHSC.

Waste Management

Overall, a focus on waste management and how it affects Uganda's supply chain is lacking. While waste management CMM scores were high at the central level, they were poor at service delivery points. Gaps for waste management at the central level that could help catalyze a cascade of effects downstream include:
- Determining which entity is responsible for health-care waste management
- Including waste management in the National Supply Chain Strategic Plan
- Updating waste management SOPs disseminated nationally along with implementing a regional training strategy
- Updating waste management tools and incorporating a review of waste management practices in supportive supervision visits to all service delivery levels

These activities could bolster the clarity of expectations and the efficacy of operations throughout the supply chain in waste management. General hospitals may have challenges in appropriately managing the significant stocks of expired first-line tuberculosis drugs, a finding captured as a KPI. This concern needs to be addressed to develop a plan for safe and effective removal of these products.

LMIS

Throughout the analysis of data from the assessment, LMIS has continued to appear as a weaker area that is potentially affecting other parts of the supply chain system. The CMM module facility averages indicate a large range of capability (34–63 percent) and even greater variation within each facility type. Low CMM scores, coupled with poor KPI performance, suggest issues that require a root-cause analysis (and potentially internal audits) with LMIS in the supply chain. Consistent use of LMIS at all supply chain levels is key to making informed resupply, forecasting, and procurement decisions, the importance and benefit of which cannot be understated.

Summary of Findings and Recommendations

The assessment shows a complete, point-in-time snapshot of the Ugandan PHSC. Where CMM and performance scores are low, this report identifies items that contribute to these scores. However, it is not the mandate of the NSCA 2.0 to identify the underlying causes of the deficiencies. Where this report identifies gaps, a deeper dive is recommended, focused on interpreting the root cause so that targeted operational improvement programs can be developed to address these gaps. Any comparisons between KPIs and CMM scores are reported simply as findings of measurement tools applied thoughtfully to a purpose-specific context. The assessment has sought to maximize collaborative efforts at every step to leverage investment around one transformational plan, helping guide the Ugandan PHSC forward to strong, sustained performance and resilience.

KPI Findings

Stockouts and poor stock management have been documented throughout the system; more than 90 percent of SDPs have experienced a stockout of tracer products in the last six months and no entity, not even central-level entities, has been SATP more than 60 percent of the time in the same period. Encouragingly, central-level entities had no stockouts on the day of the visit and only 11 percent of either hospital type had any type of stockout on the day of the visit. There is a concern that the wide range of acceptable MOSOH at NMS and the high levels of MOSOH of several tracer products with low demand at JMS indicate that stock management practices need to be reviewed and adjusted at both entities. Wastage rates overall were low, with most facilities indicating less than 1 percent of any tracer stock deemed unusable. The notable outlier was RHZE, which had 14 percent wastage in general hospitals, 6 percent at health centers, and 5 percent at NMS. To address the immediate issue, a reverse logistics waste removal plan must be developed. To avoid such occurrences in the future, a careful review of stock management practices for TB commodities should be conducted

For LMIS, record accuracy is poor across the board with no lower-level facility type having 100 percent stockcard accuracy at more than 65 percent of facilities and 100 percent eLMIS record accuracy at more than 33 percent of facilities. Strengthening data collection procedures and data quality reviews is critical, with an emphasis on improving SOPs and training responsible staff.

CMM Findings

Overall, CMM scores at central-level entities were much higher than at lower-level facilities. While this may have been anticipated, it only increases the importance of providing technical assistance and support at the downstream facilities to ensure drugs reach the intended recipients. The best-performing functional areas of the CMM (in no particular order) were:
- Strategic Planning and Management
- Financial Sustainability
- Forecasting and Supply Planning

- Distribution

These are positive findings, as they indicate that the leadership at the top of the supply chain has vision and sets strategic priorities beyond the near term. This will be a strength moving forward as improvement plans are drafted. Development of strategic plans with comprehensive inclusion of key supply chain areas and consistent monitoring were common throughout central-level entities. The only notable exception was strategic plans at RRHs. Looking at financial sustainability, there was also encouraging news. While many facilities do experience a budget shortfall, they have strong financial management skills; developing of annual budgets with regular monitoring, quantifying supply chain–related financial need, and having the flexibility within budgets to address shortfalls.

Underperforming areas of the CMM (in no particular order) were:
- Policy and Governance
- LMIS
- Waste Management
- Quality and Pharmacovigilance
- Human Resources

Waste management does not have a national strategy, and guidelines are not consistent and ubiquitous throughout the system. Applications of waste management SOPs are poor, and documentation of waste disposal events is inconsistent. This can lead to UMPP clogging up storage space and holding back the system from strong performance. Special emphasis should be placed on ensuring the waste makes it out of the system as safely and efficiently as possible. A focus on implementing FEFO dispensing practices will also help to ensure the wastage does not continue to build up.

Pharmacovigilance CMM scores were particularly low in service delivery facility types. A concerning finding was how few facilities could identify possible solutions in the occurrence of an ADR, such as notifying the NDA or stopping issuance of products. Only 15 percent of health centers and 21 percent of general hospitals identified stopping issuance of products as a possible action to take in response to an ADR. Also, only 28 percent of HCs and 46 percent of GHs identified notifying the NDA as a possible action step. Disseminating PV SOPs and policies is an important and low-cost action item that should be implemented soon.

Human Resources CMM scores, while not the lowest, still provided important findings that need to be addressed. No lower-level facility type has HR strategies that specifically consider supply chain positions. Supply chain skills and competencies are also poorly represented on job descriptions throughout the system. Policies for recruiting and retaining supply chain staff are crucial to fill the numerous supply chain vacancies that were found throughout the system.

The Global Fund has indicated that it is prepared to follow up on some areas of the downstream supply chain where performance can be improved. It has a structured and systematic method for supply chain transformation, and this NSCA 2.0 has provided the data and analysis needed to establish where root-cause deep dives will pinpoint the items that will contribute the most significant potential for improvement.

Conclusions

Under the leadership of the MOH, USAID, The Global Fund, and GHSC-PSM the NSCA 2.0 was implemented in Uganda with the intention to:

- Measure PHSC performance and capability

- Analyze the overall PHSC operational capacity and performance, identifying bottlenecks and opportunities for improvement

- Identify focus areas of opportunity for MOH planning and stakeholder coordination to inform development of transformational plan(s) to guide future system strengthening investments

Overall, a general trend indicates stronger capability in the central levels, particularly the stores, and weaker capability scores as the health commodities proceed downstream through to the hospitals and health facilities. Exhibit 10a clearly shows that most low CMM scores are observed at the RRHs and health facilities. This may be the result of an initial plan to fix upstream activities first and then work down the tiers. However, more MOH and GOU attention and root-cause analysis must be performed at the lower levels where most Ugandans are accessing services.

There is cause not only to focus on maintaining and improving the central level but also to drive forward with a well-structured program to raise the capabilities of the hospitals and especially the health centers.

National health product supply chain transformation requires strong ownership from the MOH and is also enhanced with the support of the MOPFED and the MOLG. A partnership between the GOU and key financiers, which also include the private sector, can be a powerful instrument in strengthening Uganda's public health supply chain. It is recommended that a steering committee be formed with these parties.

A natural next step would be to move the data collection and output analysis to a full understanding of the current state by follow-up root-cause investigation. When this is completed, the steering committee may consider the appropriate activities, costs, timing, and benefits associated with the improvement projects recommended. These projects would require continuous monitoring to ensure that deliverables are achieved on time and within budget while also ensuring the objectives are achieved.

With the findings and recommendations of this report, a clear list of priorities for investigation and potential investment emerges. With careful root-cause analysis and thoughtful planning and investment, the potential is great to transform aspects of the Ugandan public health supply chain into a more robust and well-functioning system.
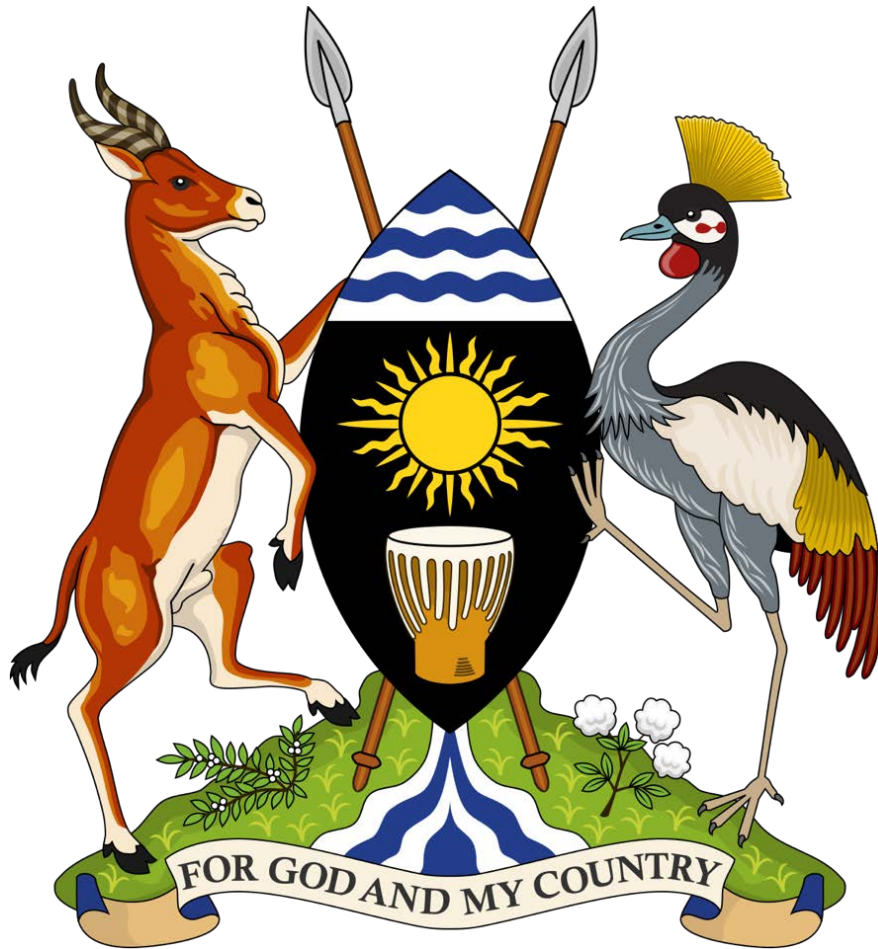
Uganda National Supply Chain Assessment: Annexes

Uganda NSCA – May 2018: List of Facilities & Districts visited

Facility	District	Facility	District	Facility	District
Kampala DHO & DVS	Kampala	Moyo DHO & DVS	Moyo	Buyende DHO	Buyende
Katwe Police Center II	Kampala	Gbalala Health Centre II	Moyo	Buyende DVS @ Kidera HC IV	Buyende
Kiswa Health Centre III	Kampala	Itula Health Centre III	Moyo	Kakooge Health Centre II	Buyende
Kisenyi Health Center IV	Kampala	Obongi Health Centre IV	Moyo	Buyende Health Centre III	Buyende
Murchision Bay Prison General Hospital	Kampala	Moyo General Hospital	Moyo	Luuka DHO	Luuka
China Uganda Friendship (Naguru) Regional Referral Hospital	Kampala	Bundibugyo DHO	Bundibugyo	Luuka DVS @ Kiyunga HC IV	Luuka
Kiruddu Regional Referral Hospital	Kampala	Bundibugyo DVS @ Bundibugyo Hosp	Bundibugyo	Nantamali Health Centre II	Luuka
Joint Medical Stores	Kampala	Kayenje Health Centre II	Bundibugyo	Bukanga Health Centre III	Luuka
National Medical Stores	Wakiso	Ntandi Health Center III	Bundibugyo	Kiyunga Health Centre IV	Luuka
Luwero DHO & DVS	Luwero	Kikyo Health Centre IV	Bundibugyo	Ntungamo DHO & DVS	Ntungamo
Bukolwa Health Centre II	Luwero	Bundibugyo General Hospital	Bundibugyo	Kigaaga Health Centre II	Ntungamo
Butuntumula Health Centre III	Luwero	Kamukumbi Health Centre II	Kasese	Ngoma Health Centre III	Ntungamo
Nyimbwa Health Centre IV	Luwero	Kinyabwamba Health Centre III	Kasese	Rwashamaire Health Centre IV	Ntungamo
Bombo General Military General Hospital	Luwero	Kisoro DHO & DVS	Kisoro	Itojo General Hospital	Ntungamo
Wakiso DHO & DVS	Wakiso	Gasovu Health Centre II	Kisoro	KitooroLuyembe HC	Lwengo
Kasenge Health Centre II	Wakiso	Kagano Health Centre III	Kisoro	Kyazanga Health Centre IV	Lwengo
Nsangi Health Centre III	Wakiso	Chahafi Health Centre IV	Kisoro	Hoima DHO & DVS	Hoima
Namayumba Health Centre IV	Wakiso	St Francis Mutolere Hospital PHC	Kisoro	Buhuka Health Centre II	Hoima
Saidina Abubakar Islamic Hospital	Wakiso	Kasese DHO & DVS	Kasese	Buhimba Health Centre III	Hoima
Agago DHO @ Agago HOSP	Agago	Bwera General Hospital	Kasese	Kikuube Health Centre IV	Hoima
Agago DVS @ Kalongo Hosp	Agago	Rubirizi DHO	Rubirizi	Hoima Regional Referral Hospital	Hoima
Ogwang Kamolo Health Centre II	Agago	Rubirizi DSV @ Rugazi HC IV	Rubirizi	Kibaale DHO & DVS	Kibaale
Lira Palwo Health Centre III	Agago	Mushumba Health Centre II	Rubirizi	Matale Health Centre II	Kibaale
Pader DHO & DVS	Pader	Katunguru Health Centre III	Rubirizi	Kyebando Health Centre III	Kibaale
Paibwor Health Centre II	Pader	Rugazi Health Centre IV	Rubirizi	Kibaale Health Centre IV	Kibaale
Puranga Health Centre III	Pader	Moroto DHO & DVS	Moroto	Bulambuli DHO	Bulambuli
Pajule Health Centre IV	Pader	Lotirir Health Centre II	Moroto	Bulambuli DVS @ Muyembe HC IV	Bulambuli
Oyam DHO & DVS	Oyam	Army Barracks Health Centre III	Moroto	Bunangaka Health Centre II	Bulambuli
Acimi Health Centre II	Oyam	Moroto Regional Referral Hospital	Moroto	Buluganya Health Centre III	Bulambuli
Minakulu (PNFP) Health Centre III	Oyam	Soroti DHO & DVS	Soroti	Nakaloke Health Centre II	Mbale
Nakasongola DHO & DVS	Nakasongola	Soroti Regional Referral Hospital	Soroti	SALEM KOLONYI HEALTH CENTREMBA	Mbale
Nakasongola Military General Hospital	Nakasongola	Agirigiroi Health Centre II	Soroti	Mbale Regional Referral Hospital	Mbale
Kisaalizi Health Centre II	Nakasongola	Tiriri Health Centre IV	Soroti	Lwengo DHO	Lwengo
Nakayonza Health Centre III	Nakasongola	Soroti Health Centre III	Soroti	Lwengo DVS @ Lwengo HC IV	Lwengo
Nakasongola Health Centre IV	Nakasongola	Bududa DHO & DVS	Budduda	Nanywa Health Centre III	Lwengo
Arua DHO & DVS	Arua	Namaitsu COUHealth Centre II	Bududa	Rakai DHO & DVS	Rakai
Ogoko Health Centre II	Arua	Bukibokolo Health Centre III	Bududa	Kifamba Health Centre III	Rakai
EdiofeHealth Centre III	Arua	Bududa General Hospital	Bududa	Kayonza Kacheera Health Centre II	Rakai
Omugo Health Centre IV	Arua	Mbale DHO & DVS	Mbale	Rakai General Hospital	Rakai
KULUVA HOSP DELEGTD STFF	Arua	Gangama O.L. Fatima	Mbale	Kabale DHO & DVS	Kabale
Arua Regional Referral Hospital	Arua	CURE CHILDRENS' HOSPITAL MBALE	Mbale	Kanjobe Health Centre II	Kabale
Koboko DHO	Koboko	Busia DHO & DVS	Busia	Buhara Health Centre III	Kabale
Koboko DVS @ Koboko HC IV	Koboko	Mundindi Health Centre II	Busia	Maziba Health Centre IV	Kabale
Koboko Police Health Centre II	Koboko	Lunyo Health Centre III	Busia	Kabale Regional Referral Hospital	Kabale
Ayipe Health Centre III	Koboko	DABANI HOSPITAL	Busia	Rukungiri DHO & DVS	Rukungiri
Koboko General Hospital	Koboko	Tororo DHO & DVS	Tororo	Karuhembe Health Centre II	Rukungiri
Kiruhura DHO	Kiruhura	St John's Kayoro HC II	Tororo	Rwengiri HC III	Rukungiri
Kiruhura DVS @ Kiruhura HC IV	Kiruhura	Kwapa Health Centre III	Tororo	Kebisoni Health Centre IV	Rukungiri
Rwanyangwe Health Centre II	Kiruhura	Mukuju Health Centre IV	Tororo	Karoli Lwanga Hospital Nyakibale	Rukungiri
Burunga Health Centre III	Kiruhura	Tororo General Hospital	Tororo		
Kazo HC Health Centre IV	Kiruhura				

Uganda NSCA Enumerator List- May 2018		
Name	**Profession**	**District**
Aguma Daniel	Pharmacist	Lira
Angole Ruben	Stores Assistant	Bundibugyo
Atim Mary Gorret	Pharmacist	Soroti
Bwayo Isaac	Clinical Officer	Tororo
Byarugaba Shadrach	Clinical Officer	Hoima
Dennis Nankoola	Pharmacist	Mubende
Gamusi Robert	Nurse	Kaberamaido
Genza Charles	Clinical Officer	Luwero
Inyalio Julius	Stores Assistant	Kumi
Irama Denish Mark	Nurse	Adjumani
Kabonero Timothy	Pharmacist	Masaka
Kaswa Herbert	Clinical Officer	Kamuli
Kisambu Jedi	Clinical Officer	Mayuge
Laban Kittata	Pharmacist	Mityana
Lugobe Sam	Clinical Officer	Nakasongola
Magezi Mugerwa James	Nurse	Kagadi
Manzi Mbabazi Gerald	Pharmacist	Mbarara
Margaret Abigaba	Senior Pharmacist	Hoima
Mark Onzima	Principal Dispenser	Arua
Mugisha Valentine	Clinical Officer	Rukungiri
Muliro Martin	Clinical Officer	Mayuge
Munyamahoro Leonard	Nurse	Kiruhura
Muwawu John	Clinical Officer	Kyotera
Oboi Francis	Pharmacist	Soroti
Okello Kenneth	Clinical Officer	Moyo
Olum William	Senior Pharmacist	Jinja
Omac Francis	Nurse	Amudat
Onigo Charles Mawadri	Pharmacist	Adjumani
Oselle Julius	Medical Officer	Bukedea
Oumo David	Principal Dispenser	Moroto
Padda Ben	Clinical Officer	Nakasongola
Peter Buzaare	Pharmacist	Mbarara
Rodney Tabaruka	Pharmacist	Jinja
Sande Alex	Senior Pharmacist	Mbale
Steven Owor	Pharmacist	Arua
Tabaro Gedeon	Clinical Officer	Bukomansimbi
Vicky Nyombi	Senior Pharmacist	Kampala
Walijjo Moses	Pharmacist	Kyotera
Yona Tumwine	Clinical Officer	Jinja
Ziraguma Simon	Clinical Officer	Kabale

KPI data collection form for data collected at SDPs, referral hospitals, and warehouses

Some of these data are collected at central warehouses, but data that are collected ONLY at the central level are not included in this document. Areas highlighted in yellow will need to be updated for the specific context of each assessment.

Contents

Site information

District/Location:

Facility Name:

Facility Identifier:

Facility Type:

Facility Level:

Stock Data

KPI Table 1

Level to Implement: For SDP, referral hospital, and warehouse levels.

Explain that you will need to:
1. Access electronic LMIS records for the tracer commodities, if this facility has an electronic LMIS system,
2. Count a set of tracer commodities on the shelf, and
3. See the paper stock (bin) cards for the tracer commodities.

The first table includes questions on minimum and maximum stock levels, which should be asked to the person responsible for managing stocks.

To be prepared to complete the "Historical Stock Data" section, before you start, request stock cards for each tracer commodity for the months of <mark>MONTH1-MONTH6</mark>. You'll use these stock cards to collect historic data in addition to the electronic LMIS system (if available).

For each of the tracer commodities, answer the following questions:

Question 1.1 assesses whether the facility you are visiting 'manages' the commodity in question. There may be situations where a facility does not stock a particular commodity. For example, if a health center does not offer TB services, then it will not stock Rifampicin/Isoniazid; because, the facility does not 'manage' Rifampicin/Isoniazid, you would select 'No' as the answer to the question "1.1 Is this product managed by this facility?". If the facility has carried the product in the last 6 months, then you should answer 'yes'.

Commodity	1.1 Is this product managed by this facility?	1.2a Is there an established minimum stock level for this product at this facility? *Measured in months. Ask the staff if a minimum stock level is set for the relevant product in this facility.*	1.2b What is the established minimum stock level of this product? *Measured in months. You should record this answer in terms of the number of months. You should NOT record this answer in terms of the number of pills, boxes, ampules, tests, etc. Ask the staff what the minimum stock level is for their facility. Record their answer, even if the answer is not in alignment with national standards.*	1.a2c Is there an established maximum stock level for this product at this facility? *Measured in months. Ask the staff if a maximum stock level is set for the relevant product in this facility.*	1.2d What is the established maximum stock level of this product? *Measured in months. You should record this answer in terms of the number of months. You should NOT record this answer in terms of the number of pills, boxes, ampules, tests, etc. Ask the staff what the minimum stock level is for their facility. Record their answer, even if the answer is not in alignment with national standards.*
Tracer commodity 1:	Yes No↓	Yes No	_____	Yes No	_____
Tracer commodity 2:	Yes No↓	Yes No	_____	Yes No	_____
Tracer commodity 3:	Yes No↓	Yes No	_____	Yes No	_____
Tracer commodity 4:	Yes No↓	Yes No	_____	Yes No	_____
Tracer commodity 5:	Yes No↓	Yes No	_____	Yes No	_____
Tracer commodity 6:	Yes No↓	Yes No	_____	Yes No	_____
Tracer commodity 7:	Yes No↓	Yes No	_____	Yes No	_____
Tracer commodity 8:	Yes No↓	Yes No	_____	Yes No	_____
Tracer commodity 9:	Yes No↓	Yes No	_____	Yes No	_____

Tracer commodity 10:	Yes No	Yes No	_____	Yes No	_____
			# between zero and 24		# between zero and 24

For each of the tracer commodities, answer the following questions:
This assesses whether the staff of the facility (or you) are able to access the electronic LMIS system on the day you are visiting the facility, and, in the case that you are able to access the electronic LMIS system, there exists a record for this facility for this product. You must be able to both access the electronic LMIS AND find the record for the product in order to answer 'Yes' to question 1.3.

Commodity	1.3 Is the electronic LMIS record available for this product?	1.3b What is the stock on hand recorded in the electronic LMIS system for this product? *Enter the amount listed for the store room only. Do NOT enter the amount on hand for the entire facility. To answer this question, record the current balance in the electronic LMIS. This should reflect the latest entry.*	1.3c Is the date on the last modification of the electronic LMIS record today?	1.3d Enter the unit 1.3b is listed in *(pack of 100, bottle of 1,000, etc.)*	1.3d Enter the date of the last electronic LMIS modification: *Enter the date that the data point reported in question 1.3b was entered into the electronic LMIS system. This question will be used to assess whether or not the electronic LMIS system is up to date.*
Tracer commodity 1:	Yes No↓	_____	Yes No		___ / ___ / ___
Tracer commodity 2:	Yes No↓	_____	Yes No		___ / ___ / ___
Tracer commodity 3:	Yes No↓	_____	Yes No		___ / ___ / ___
Tracer commodity 4:	Yes No↓	_____	Yes No		___ / ___ / ___
Tracer commodity 5:	Yes No↓	_____	Yes No		___ / ___ / ___
Tracer commodity 6:	Yes No↓	_____	Yes No		___ / ___ / ___
Tracer commodity 7:	Yes No↓	_____	Yes No		___ / ___ / ___
Tracer commodity 8:	Yes No↓	_____	Yes No		___ / ___ / ___
Tracer commodity 9:	Yes No↓	_____	Yes No		___ / ___ / ___
Tracer commodity 10:	Yes No	_____	Yes No		___ / ___ / ___
		#			MM/DD/YY

Commodity	1.4 Count the stock in the storeroom. What is the quantity in stock? *Please go to the store room (if you are not there already) and count the number of the product that are in the store room on the day you visit the facility for this assessment. Ensure with the staff that you have located all the areas in the stores where the product is currently being stored. Enter the amount listed for the store room only. Do NOT enter the amount on hand for the entire facility.*	Enter the unit for this number: *[Update this list as necessary before the start of data collection; each tracer commodity may only need one or two units]*			If another unit, please specify here:
Tracer commodity 1:	_____	☐ Box of XX	☐ Each	☐ Other	_____
Tracer commodity 2:	_____	☐ Box of XX	☐ Each	☐ Other	_____
Tracer commodity 3:	_____	☐ Vial	☐ Other		_____
Tracer commodity 4:	_____	☐ Sachet	☐ Other		_____
Tracer commodity 5:	_____	☐ Test	☐ Other		_____
Tracer commodity 6:	_____	☐ Ampule	☐ Other		_____
Tracer commodity 7:	_____	☐ Bottle of XXXX	☐ Each	☐ Other	_____
Tracer commodity 8:	_____	☐ Bottle of XXX	☐ Each	☐ Other	_____
Tracer commodity 9:	_____	☐ Etc.	☐ Other		_____
Tracer commodity 10:	_____	☐ Etc.	☐ Other		_____
	#				Text

For each of the tracer commodities, answer the following questions:

For each of the tracer commodities, answer the following questions:

Commodity	1.5a Is there a stock card available for this product? *This assesses whether the facility has a stock card (paper-based) stock card available on the day that you are visiting the facility.*	1.5b What is the average monthly consumption of this product? *Calculate based on the last 6 months that do not have a stock out. Add the total consumption across the number of months with no stock out, and divide the sum by the total number of months with no stock out. In this field, you should enter the average monthly consumption of the product. For Referral Hospitals and SDPs, you should report the average consumption (not just issues from the store room, if consumption data is available from the electronic LMIS or other source; if consumption data is not available, use issues from the store room).* *You can use the calculator on the tablet or on a cell phone to do this calculation.*	1.5c What is the stock on hand recorded on the stock card for this product? *To answer this question, record the current balance on the stock card. This should reflect the latest entry on the stock card.* *Use the same units as in Question 1.4*	1.5d Enter the date of the last entry on the stock card for this product:	1.5e Is the stock card up to date? *To answer this question, ask the store manager or person you are interviewing if the stock card is up to date*
Tracer commodity 1:	Yes No↓	_____	_____	_ / _ / _	Yes No Don't Know
Tracer commodity 2:	Yes No↓	_____	_____	_ / _ / _	Yes No Don't Know
Tracer commodity 3:	Yes No↓	_____	_____	_ / _ / _	Yes No Don't Know

Tracer commodity 4:	Yes No↓	_____	_____	_ / _ / _	Yes No Don't Know
Tracer commodity 5:	Yes No↓	_____	_____	_ / _ / _	Yes No Don't Know
Tracer commodity 6:	Yes No↓	_____	_____	_ / _ / _	Yes No Don't Know
Tracer commodity 7:	Yes No↓	_____	_____	_ / _ / _	Yes No Don't Know
Tracer commodity 8:	Yes No↓	_____	_____	_ / _ / _	Yes No Don't Know
Tracer commodity 9:	Yes No↓	_____	_____	_ / _ / _	Yes No Don't Know
Tracer commodity 10:	Yes No	_____	_____	_ / _ / _	Yes No Don't Know
		#	#	DD/MM/YY	Yes No Don't Know

Tracer commodity 1:	Product Name	COMMODITY 1	Product Dosage	Dose-TBD

To collect this data, use the paper stock cards. If the facility is NOT using stock cards, but is using electronic LMIS to manage stock, electronic LMIS data can be used instead. Assessment teams should look at all stock cards for each tracer commodity for the time period in question. Most tracer commodities will have their own stock card and, depending on the reporting period, multiple stock cards may encompass the whole timeframe.

First, assess whether or not data are available for a given month. For example, older stock cards may have been discarded and no longer be available or staff may have left the facility and nobody was present to keep the stock cards up to date. If this is the case for a given month, then the data are not available, and the answer to the first column/question should be 'No'. If the data are available on the stock card select 'Yes'.

Please fill in the following table for COMMODITY X FORMULATION from the stock card

	Month	Are data available for this month?	Initial stock	Issues (from Stores)	**Total from Expiry, Damaged, and Lost** *Report the total quantity of product that expired, was damaged or was lost ONLY during the month being reported on here. Enter zero if none.*	**If any expiry, damage, or loss, specify type and amount here:** *Enter the specific quantity lost to expiry, to damage, and to loss during ${month} here, for example: "expiry: 20 vials, damage: 5 vials, loss: 0 vials"*	Any Stock Out?	**If yes, # of days stocked out** *Start counting the day the zero stock was reported (i.e. the first day that ended with a zero balance); do not count the day the stock arrives (balance is no longer zero)*
1.6	Month 1	__YES __NO					__YES __NO	
1.7	Month 2	__YES __NO					__YES __NO	
1.8	Month 3	__YES __NO					__YES __NO	
1.9	Month 4	__YES __NO					__YES __NO	
1.10	Month 5	__YES __NO					__YES __NO	
1.11	Month 6	__YES __NO					__YES __NO	
		yes/no	#	#	#	#	yes/no	#

Tracer commodity 2:	Product Name	COMMODITY 2	Product Dosage	Dose-TBD

To collect this data, use the paper stock cards. If the facility is NOT using stock cards, but is using electronic LMIS to manage stock, electronic LMIS data can be used instead. Assessment teams should look at all stock cards for each tracer commodity for the time period in question. Most tracer commodities will have their own stock card and, depending on the reporting period, multiple stock cards may encompass the whole timeframe.

First, assess whether or not data are available for a given month. For example, older stock cards may have been discarded and no longer be available or staff may have left the facility and nobody was present to keep the stock cards up to date. If this is the case for a given month, then the data are not available, and the answer to the first column/question should be 'No'. If the data are available on the stock card select 'Yes'.

Please fill in the following table for COMMODITY X FORMULATION from the stock card

	Month	Are data available for this month?	Initial stock	Issues (from Stores)	Total from Expiry, Damaged, and Lost *Report the total quantity of product that expired, was damaged or was lost ONLY during the month being reported on here.* *Enter zero if none.*	If any expiry, damage, or loss, specify type and amount here: *Enter the specific quantity lost to expiry, to damage, and to loss during ${month} here, for example: "expiry: 20 vials, damage: 5 vials, loss: 0 vials"*	Any Stock Out?	If yes, # of days stocked out *Start counting the day the zero stock was reported (i.e. the first day that ended with a zero balance); do not count the day the stock arrives (balance is no longer zero)*
1.6	Month 1	__YES __NO					__YES __NO	
1.7	Month 2	__YES __NO					__YES __NO	
1.8	Month 3	__YES __NO					__YES __NO	
1.9	Month 4	__YES __NO					__YES __NO	
1.10	Month 5	__YES __NO					__YES __NO	
1.11	Month 6	__YES __NO					__YES __NO	
		yes/no	#	#	#	#	yes/no	#

Tracer commodity 3:	Product Name	COMMODITY 3	Product Dosage	Dose-TBD

To collect this data, use the paper stock cards. If the facility is NOT using stock cards, but is using electronic LMIS to manage stock, electronic LMIS data can be used instead. Assessment teams should look at all stock cards for each tracer commodity for the time period in question. Most tracer commodities will have their own stock card and, depending on the reporting period, multiple stock cards may encompass the whole timeframe.

First, assess whether or not data are available for a given month. For example, older stock cards may have been discarded and no longer be available or staff may have left the facility and nobody was present to keep the stock cards up to date. If this is the case for a given month, then the data are not available, and the answer to the first column/question should be 'No'. If the data are available on the stock card select 'Yes'.

Please fill in the following table for COMMODITY X FORMULATION from the stock card

	Month	Are data available for this month?	Initial stock	Issues (from Stores)	**Total from Expiry, Damaged, and Lost** *Report the total quantity of product that expired, was damaged or was lost ONLY during the month being reported on here.* *Enter zero if none.*	**If any expiry, damage, or loss, specify type and amount here:** *Enter the specific quantity lost to expiry, to damage, and to loss during ${month} here, for example: "expiry: 20 vials, damage: 5 vials, loss: 0 vials"*	Any Stock Out?	**If yes, # of days stocked out** *Start counting the day the zero stock was reported (i.e. the first day that ended with a zero balance); do not count the day the stock arrives (balance is no longer zero)*
1.6	Month 1	__YES __NO					__YES __NO	
1.7	Month 2	__YES __NO					__YES __NO	
1.8	Month 3	__YES __NO					__YES __NO	
1.9	Month 4	__YES __NO					__YES __NO	
1.10	Month 5	__YES __NO					__YES __NO	
1.11	Month 6	__YES __NO					__YES __NO	
		yes/no	#	#	#	#	yes/no	#

14

Tracer commodity 4:	Product Name	COMMODITY 4	Product Dosage	Dose-TBD

To collect this data, use the paper stock cards. If the facility is NOT using stock cards, but is using electronic LMIS to manage stock, electronic LMIS data can be used instead. Assessment teams should look at all stock cards for each tracer commodity for the time period in question. Most tracer commodities will have their own stock card and, depending on the reporting period, multiple stock cards may encompass the whole timeframe.

First, assess whether or not data are available for a given month. For example, older stock cards may have been discarded and no longer be available or staff may have left the facility and nobody was present to keep the stock cards up to date. If this is the case for a given month, then the data are not available, and the answer to the first column/question should be 'No'. If the data are available on the stock card select 'Yes'.

Please fill in the following table for COMMODITY X FORMULATION from the stock card

	Month	Are data available for this month?	Initial stock	Issues (from Stores)	**Total from Expiry, Damaged, and Lost** *Report the total quantity of product that expired, was damaged or was lost ONLY during the month being reported on here.* *Enter zero if none.*	**If any expiry, damage, or loss, specify type and amount here:** *Enter the specific quantity lost to expiry, to damage, and to loss during ${month} here, for example: "expiry: 20 vials, damage: 5 vials, loss: 0 vials"*	Any Stock Out?	**If yes, # of days stocked out** *Start counting the day the zero stock was reported (i.e. the first day that ended with a zero balance); do not count the day the stock arrives (balance is no longer zero)*
1.6	Month 1	___YES ___NO					___YES ___NO	
1.7	Month 2	___YES ___NO					___YES ___NO	
1.8	Month 3	___YES ___NO					___YES ___NO	
1.9	Month 4	___YES ___NO					___YES ___NO	
1.10	Month 5	___YES ___NO					___YES ___NO	
1.11	Month 6	___YES ___NO					___YES ___NO	
		yes/no	#	#	#	#	yes/no	#

Tracer commodity 5:	**Product Name**	COMMODITY 5	**Product Dosage**	Dose-TBD

To collect this data, use the paper stock cards. If the facility is NOT using stock cards, but is using electronic LMIS to manage stock, electronic LMIS data can be used instead. Assessment teams should look at all stock cards for each tracer commodity for the time period in question. Most tracer commodities will have their own stock card and, depending on the reporting period, multiple stock cards may encompass the whole timeframe.

First, assess whether or not data are available for a given month. For example, older stock cards may have been discarded and no longer be available or staff may have left the facility and nobody was present to keep the stock cards up to date. If this is the case for a given month, then the data are not available, and the answer to the first column/question should be 'No'. If the data are available on the stock card select 'Yes'.

Please fill in the following table for <mark>COMMODITY X FORMULATION</mark> *from the stock card*

	Month	Are data available for this month?	Initial stock	Issues (from Stores)	Total from Expiry, Damaged, and Lost *Report the total quantity of product that expired, was damaged or was lost ONLY during the month being reported on here.* *Enter zero if none.*	If any expiry, damage, or loss, specify type and amount here: *Enter the specific quantity lost to expiry, to damage, and to loss during ${month} here, for example: "expiry: 20 vials, damage: 5 vials, loss: 0 vials"*	Any Stock Out?	If yes, # of days stocked out *Start counting the day the zero stock was reported (i.e. the first day that ended with a zero balance); do not count the day the stock arrives (balance is no longer zero)*
1.6	Month 1	__YES __NO					__YES __NO	
1.7	Month 2	__YES __NO					__YES __NO	
1.8	Month 3	__YES __NO					__YES __NO	
1.9	Month 4	__YES __NO					__YES __NO	
1.10	Month 5	__YES __NO					__YES __NO	
1.11	Month 6	__YES __NO					__YES __NO	
		yes/no	#	#	#	#	yes/no	#

| Tracer commodity 6: | Product Name | COMMODITY 6 | Product Dosage | Dose-TBD |

To collect this data, use the paper stock cards. If the facility is NOT using stock cards, but is using electronic LMIS to manage stock, electronic LMIS data can be used instead. Assessment teams should look at all stock cards for each tracer commodity for the time period in question. Most tracer commodities will have their own stock card and, depending on the reporting period, multiple stock cards may encompass the whole timeframe.

First, assess whether or not data are available for a given month. For example, older stock cards may have been discarded and no longer be available or staff may have left the facility and nobody was present to keep the stock cards up to date. If this is the case for a given month, then the data are not available, and the answer to the first column/question should be 'No'. If the data are available on the stock card select 'Yes'.

Please fill in the following table for COMMODITY X FORMULATION from the stock card

	Month	Are data available for this month?	Initial stock	Issues (from Stores)	Total from Expiry, Damaged, and Lost *Report the total quantity of product that expired, was damaged or was lost ONLY during the month being reported on here.* *Enter zero if none.*	If any expiry, damage, or loss, specify type and amount here: *Enter the specific quantity lost to expiry, to damage, and to loss during ${month} here, for example: "expiry: 20 vials, damage: 5 vials, loss: 0 vials"*	Any Stock Out?	If yes, # of days stocked out *Start counting the day the zero stock was reported (i.e. the first day that ended with a zero balance); do not count the day the stock arrives (balance is no longer zero)*
1.6	Month 1	__YES __NO					__YES __NO	
1.7	Month 2	__YES __NO					__YES __NO	
1.8	Month 3	__YES __NO					__YES __NO	
1.9	Month 4	__YES __NO					__YES __NO	
1.10	Month 5	__YES __NO					__YES __NO	
1.11	Month 6	__YES __NO					__YES __NO	
		yes/no	#	#	#	#	yes/no	#

Tracer commodity 7:	Product Name	COMMODITY 7	Product Dosage	Dose-TBD

To collect this data, use the paper stock cards. If the facility is NOT using stock cards, but is using electronic LMIS to manage stock, electronic LMIS data can be used instead. Assessment teams should look at all stock cards for each tracer commodity for the time period in question. Most tracer commodities will have their own stock card and, depending on the reporting period, multiple stock cards may encompass the whole timeframe.

First, assess whether or not data are available for a given month. For example, older stock cards may have been discarded and no longer be available or staff may have left the facility and nobody was present to keep the stock cards up to date. If this is the case for a given month, then the data are not available, and the answer to the first column/question should be 'No'. If the data are available on the stock card select 'Yes'.

Please fill in the following table for COMMODITY X FORMULATION from the stock card

	Month	Are data available for this month?	Initial stock	Issues (from Stores)	Total from Expiry, Damaged, and Lost *Report the total quantity of product that expired, was damaged or was lost ONLY during the month being reported on here.* *Enter zero if none.*	If any expiry, damage, or loss, specify type and amount here: *Enter the specific quantity lost to expiry, to damage, and to loss during ${month} here, for example: "expiry: 20 vials, damage: 5 vials, loss: 0 vials"*	Any Stock Out?	If yes, # of days stocked out *Start counting the day the zero stock was reported (i.e. the first day that ended with a zero balance); do not count the day the stock arrives (balance is no longer zero)*
1.6	Month 1	__YES __NO					__YES __NO	
1.7	Month 2	__YES __NO					__YES __NO	
1.8	Month 3	__YES __NO					__YES __NO	
1.9	Month 4	__YES __NO					__YES __NO	
1.10	Month 5	__YES __NO					__YES __NO	
1.11	Month 6	__YES __NO					__YES __NO	
		yes/no	#	#	#	#	yes/no	#

Tracer commodity 8:	Product Name	COMMODITY 8	Product Dosage	Dose-TBD

To collect this data, use the paper stock cards. If the facility is NOT using stock cards, but is using electronic LMIS to manage stock, electronic LMIS data can be used instead. Assessment teams should look at all stock cards for each tracer commodity for the time period in question. Most tracer commodities will have their own stock card and, depending on the reporting period, multiple stock cards may encompass the whole timeframe.

First, assess whether or not data are available for a given month. For example, older stock cards may have been discarded and no longer be available or staff may have left the facility and nobody was present to keep the stock cards up to date. If this is the case for a given month, then the data are not available, and the answer to the first column/question should be 'No'. If the data are available on the stock card select 'Yes'.

Please fill in the following table for COMMODITY X FORMULATION from the stock card

	Month	Are data available for this month?	Initial stock	Issues (from Stores)	**Total from Expiry, Damaged, and Lost** *Report the total quantity of product that expired, was damaged or was lost ONLY during the month being reported on here.* *Enter zero if none.*	**If any expiry, damage, or loss, specify type and amount here:** *Enter the specific quantity lost to expiry, to damage, and to loss during ${month} here, for example: "expiry: 20 vials, damage: 5 vials, loss: 0 vials"*	Any Stock Out?	**If yes, # of days stocked out** *Start counting the day the zero stock was reported (i.e. the first day that ended with a zero balance); do not count the day the stock arrives (balance is no longer zero)*
1.6	Month 1	__YES __NO					__YES __NO	
1.7	Month 2	__YES __NO					__YES __NO	
1.8	Month 3	__YES __NO					__YES __NO	
1.9	Month 4	__YES __NO					__YES __NO	
1.10	Month 5	__YES __NO					__YES __NO	
1.11	Month 6	__YES __NO					__YES __NO	
		yes/no	#	#	#	#	yes/no	#

24

Tracer commodity 9:	Product Name	COMMODITY 9	Product Dosage	Dose-TBD

To collect this data, use the paper stock cards. If the facility is NOT using stock cards, but is using electronic LMIS to manage stock, electronic LMIS data can be used instead. Assessment teams should look at all stock cards for each tracer commodity for the time period in question. Most tracer commodities will have their own stock card and, depending on the reporting period, multiple stock cards may encompass the whole timeframe.

First, assess whether or not data are available for a given month. For example, older stock cards may have been discarded and no longer be available or staff may have left the facility and nobody was present to keep the stock cards up to date. If this is the case for a given month, then the data are not available, and the answer to the first column/question should be 'No'. If the data are available on the stock card select 'Yes'.

Please fill in the following table for COMMODITY X FORMULATION from the stock card

	Month	Are data available for this month?	Initial stock	Issues (from Stores)	**Total from Expiry, Damaged, and Lost** *Report the total quantity of product that expired, was damaged or was lost ONLY during the month being reported on here.* *Enter zero if none.*	**If any expiry, damage, or loss, specify type and amount here:** *Enter the specific quantity lost to expiry, to damage, and to loss during ${month} here, for example: "expiry: 20 vials, damage: 5 vials, loss: 0 vials"*	Any Stock Out?	**If yes, # of days stocked out** *Start counting the day the zero stock was reported (i.e. the first day that ended with a zero balance); do not count the day the stock arrives (balance is no longer zero)*
1.6	Month 1	__YES __NO					__YES __NO	
1.7	Month 2	__YES __NO					__YES __NO	
1.8	Month 3	__YES __NO					__YES __NO	
1.9	Month 4	__YES __NO					__YES __NO	
1.10	Month 5	__YES __NO					__YES __NO	
1.11	Month 6	__YES __NO					__YES __NO	
		yes/no	#	#	#	#	yes/no	#

Tracer commodity 10:	Product Name	COMMODITY 10	Product Dosage	Dose-TBD

To collect this data, use the paper stock cards. If the facility is NOT using stock cards, but is using electronic LMIS to manage stock, electronic LMIS data can be used instead. Assessment teams should look at all stock cards for each tracer commodity for the time period in question. Most tracer commodities will have their own stock card and, depending on the reporting period, multiple stock cards may encompass the whole timeframe.

First, assess whether or not data are available for a given month. For example, older stock cards may have been discarded and no longer be available or staff may have left the facility and nobody was present to keep the stock cards up to date. If this is the case for a given month, then the data are not available, and the answer to the first column/question should be 'No'. If the data are available on the stock card select 'Yes'.

Please fill in the following table for COMMODITY X FORMULATION from the stock card

	Month	Are data available for this month?	Initial stock *Enter the amount of stock available on the morning of the first day of the month. If that data is not available, enter the amount of stock available AFTER the LAST stock card entry during the previous month.*	Issues (from Stores)	Total from Expiry, Damaged, and Lost *Report the total quantity of product that expired, was damaged or was lost ONLY during the month being reported on here.* *Enter zero if none.*	If any expiry, damage, or loss, specify type and amount here: *Enter the specific quantity lost to expiry, to damage, and to loss during ${month} here, for example: "expiry: 20 vials, damage: 5 vials, loss: 0 vials"*	Any Stock Out?	If yes, # of days stocked out *Start counting the day the zero stock was reported (i.e. the first day that ended with a zero balance); do not count the day the stock arrives (balance is no longer zero)*
1.6	Month 1	__YES __NO					__YES __NO	
1.7	Month 2	__YES __NO					__YES __NO	
1.8	Month 3	__YES __NO					__YES __NO	
1.9	Month 4	__YES __NO					__YES __NO	
1.10	Month 5	__YES __NO					__YES __NO	
1.11	Month 6	__YES __NO					__YES __NO	
		yes/no	#	#	#	#	yes/no	#

Upstream order data

KPI Table 2

Level to Implement: SDP, referral hospital, and intermediate warehouses.

For each month, answer the following questions:
-The data should include only orders/deliveries with the ==<<Name of warehouse>>==
-You should only include all orders for which you have data in the last six months (at SDPs and referral hospitals, data for the last year); if more than 20 orders are available, take the last 20 orders.
-You should first try to get this data from the electronic LMIS; if that is unavailable, you may refer to paper-based order and delivery forms. Refer to signatures and stamps to look for the actual delivery date. Actual delivery dates may vary from the expected dates printed on delivery notes.

1a.	What is the agreed upon 'delivery window' for deliveries to this facility NOT to be considered late?	_____ *Days*	*Enter in number of days. A delivery window defines whether or not an order is on-time or late. For example, if the delivery window is 5 days, a delivery must arrive earlier than 5 days after the promised delivery date to be considered on time.*
1b.	How many deliveries do you have data available for?	_____ *# (Max 20)*	*This question asks how many deliveries there are data for in the last 6 months: ==month1== to ==month6== (or 1 year if at SDP or referral hospital)* *Deliveries may contain multiple orders: If ARV, Essential Medicines, Malaria, lab, etc. are considered separate orders, but are all delivered in an integrated fashion (e.g., 1 truck making 1 drop off), then this should be considered one delivery.* *Deliveries include both routine AND emergency deliveries. It is expected that there will have been ==6== routine deliveries; the number of emergency deliveries can vary between health facilities.*
2.1a	Does the facility routinely calculate on-time delivery as a KPI?	Y / N	*These questions assess whether or not the facility has compiled its own indicator for on time delivery. Thus, the intent of this question is to see if the facility is routinely collecting, compiling, and tracking these data.*

2.1b	Enter the on-time delivery figure that was calculated by the facility/entity (itself) for 20XX:	— . ———	*Use decimal point to enter percentages - for example enter 80% as 0.80.*
2.1c	How is the on-time delivery calculated?		*Enter the details of how the figure reported in question 2.1b was calculated. Please ask the facility staff to be specific; having them show you how it is calculated may help you to fully understand what processes they use. Be as specific as possible in this answer.*

Fill in one row for each order

	A **Was this a routine or emergency order?**	B **Is the order date available?**	C **Date the products were ordered:** *If (B) is yes; Based on electronic LMIS or order note*	D **Promised delivery date available?**	E **Promised delivery date**	F **Is the actual delivery date available?**	G **Actual delivery date** *If (F) is yes; Based on electronic LMIS or order note*
					If (D) is yes; Based on electronic LMIS or order note		
3.2	__Routine __Emergency	__YES __NO	___ / ___ / ___	__YES __NO	___ / ___ / ___	__YES __NO	___ / ___ / ___
3.3	__Routine __Emergency	__YES __NO	___ / ___ / ___	__YES __NO	___ / ___ / ___	__YES __NO	___ / ___ / ___
3.4	__Routine __Emergency	__YES __NO	___ / ___ / ___	__YES __NO	___ / ___ / ___	__YES __NO	___ / ___ / ___
3.5	__Routine __Emergency	__YES __NO	___ / ___ / ___	__YES __NO	___ / ___ / ___	__YES __NO	___ / ___ / ___
3.6	__Routine __Emergency	__YES __NO	___ / ___ / ___	__YES __NO	___ / ___ / ___	__YES __NO	___ / ___ / ___
3.7	__Routine __Emergency	__YES __NO	___ / ___ / ___	__YES __NO	___ / ___ / ___	__YES __NO	___ / ___ / ___

Fill in one row for each order

	A **Was this a routine or emergency order?**	B **Is the order date available?**	C **Date the products were ordered:**	D **Promised delivery date available?**	E **Promised delivery date**	F **Is the actual delivery date available?**	G **Actual delivery date**
3.8	__Routine __Emergency	__YES __NO	__ / __ / __	__YES __NO	__ / __ / __	__YES __NO	__ / __ / __
3.9	__Routine __Emergency	__YES __NO	__ / __ / __	__YES __NO	__ / __ / __	__YES __NO	__ / __ / __
3.10	__Routine __Emergency	__YES __NO	__ / __ / __	__YES __NO	__ / __ / __	__YES __NO	__ / __ / __
3.11	__Routine __Emergency	__YES __NO	__ / __ / __	__YES __NO	__ / __ / __	__YES __NO	__ / __ / __
3.12	__Routine __Emergency	__YES __NO	__ / __ / __	__YES __NO	__ / __ / __	__YES __NO	__ / __ / __
3.13	__Routine __Emergency	__YES __NO	__ / __ / __	__YES __NO	__ / __ / __	__YES __NO	__ / __ / __
3.14	__Routine __Emergency	__YES __NO	__ / __ / __	__YES __NO	__ / __ / __	__YES __NO	__ / __ / __
3.15	__Routine __Emergency	__YES __NO	__ / __ / __	__YES __NO	__ / __ / __	__YES __NO	__ / __ / __
3.16	__Routine __Emergency	__YES __NO	__ / __ / __	__YES __NO	__ / __ / __	__YES __NO	__ / __ / __
3.17	__Routine __Emergency	__YES __NO	__ / __ / __	__YES __NO	__ / __ / __	__YES __NO	__ / __ / __
3.18	__Routine __Emergency	__YES __NO	__ / __ / __	__YES __NO	__ / __ / __	__YES __NO	__ / __ / __

Fill in one row for each order

	A **Was this a routine or emergency order?**	B **Is the order date available?**	C **Date the products were ordered:**	D **Promised delivery date available?**	E **Promised delivery date**	F **Is the actual delivery date available?**	G **Actual delivery date**
3.19	__Routine __Emergency	__YES __NO	__ / __ / __	__YES __NO	__ / __ / __	__YES __NO	__ / __ / __
3.20	__Routine __Emergency	__YES __NO	__ / __ / __	__YES __NO	__ / __ / __	__YES __NO	__ / __ / __
3.21	__Routine __Emergency	__YES __NO	__ / __ / __	__YES __NO	__ / __ / __	__YES __NO	__ / __ / __
		Y / N	DD / MM / YY	Y / N	DD / MM / YY	Y / N	DD / MM / YY

Enter observations:

Downstream delivery

KPI Table 3

Level to Implement: warehouse levels

Downstream delivery data:

Please enter information below about deliveries to health facilities. These data are used to calculate order fill rate and order turnaround time.

Required data
•   Quantity ordered
•   Quantity issued
•   Date order received or accepted
•   Delivery date(s) to facility placing the order
•   Identifying information: product type, month of receipt or order

Data sources
Quantity ordered:

•   Historical data: orders or requisitions

Quantity issued:

•   Historical data: delivery notes (receiving or issuing facility). Other data sources such as picking/packing lists could be substituted but delivery notes at receiving facility are preferable.

Notes
•   Accepted order is the quantity that the warehouse has agreed represents a "correct" order from the facility, based on standard operating procedures. This takes account of the tendency by some facilities to over-order, or to request unrealistic quantities. The "Accepted Order" should NOT include adjustments based on limited availability of stock/rationing by the warehouse.
•   Data on both the order quantity and receipt quantity between each level of the supply chain being analyzed is required.
•   Capturing quantity ordered and quantity received for each product in an order is necessary.

- Ensure teams are collecting data in the same units (either units or packs).
- Provide a standard sampling methodology to select orders for analysis to ensure that this indicator is feasible to collect; per guidance this should be 10 orders at intermediate warehouses and 20 orders at central warehouses. Select at random over the assessment reporting period.

1 | **How many deliveries do you have data available for?**

#

Enter up to the last 10 orders (20 at central warehouses)

Over the period <mark>MONTH YEAR to MONTH YEAR</mark>. Only include routine orders.

Select up to 10 deliveries (20 at central warehouse) that the <mark>\<\<name\>\></mark> warehouse dispatched during the six months prior to the assessment. For each of these deliveries, analyze all associated orders.

DELIVERY 1:

	Order date available?	**Date order received from facility**	**Date delivery arrived at facility**	**Name the type of facility that made the order**	
2.1	__YES __NO Yes / No	__ __/__ __/__ __ Date	__ __/__ __/__ __ Date	__<mark>Health center</mark> __<mark>District hospital</mark> __<mark>Referral hospital</mark> __<mark>Intermediate warehouse</mark> __Other: _____ Text	

	Commodity *Enter up to 10 commodities individually. Write the names of the commodity here.*	A **Amount ordered** *This is the amount of the original request from the health facility.*	B **Did <mark><\<name\>> warehouse</mark> correct or change the quantity ordered during the order cycle?**	C **Reason for Correction**	D **Adjusted amount** *This is the TOTAL amount of the final order (it is NOT the +/- adjustment to the original order).*	E **Amount shipped** *This is the TOTAL amount shipped to the facility*	F **Unit (box, pill, vial, etc.)**
2.2	——————— -		__YES __NO	__Stock out __Insufficient stock __Incorrect calculations __Product nearing expiry __Surplus __Other			
2.3	——————— -		__YES __NO	__Stock out __Insufficient stock __Incorrect calculations __Product nearing expiry __Surplus __Other			
2.4	——————— -		__YES __NO	__Stock out __Insufficient stock __Incorrect calculations __Product nearing expiry			

			__Surplus __Other			
2.5	_____ -	__YES __NO	__Stock out __Insufficient stock __Incorrect calculations __Product nearing expiry __Surplus __Other			
2.6	_____ -	__YES __NO	__Stock out __Insufficient stock __Incorrect calculations __Product nearing expiry __Surplus __Other			
2.7	_____ -	__YES __NO	__Stock out __Insufficient stock __Incorrect calculations __Product nearing expiry __Surplus __Other			
2.8	_____ -	__YES __NO	__Stock out __Insufficient stock __Incorrect calculations __Product nearing expiry __Surplus __Other			

	Text	#	Y / N	Select One	#	#	Text
2.9	_____ -		__YES __NO	__Stock out __Insufficient stock __Incorrect calculations __Product nearing expiry __Surplus __Other			
2.10	_____ -		__YES __NO	__Stock out __Insufficient stock __Incorrect calculations __Product nearing expiry __Surplus __Other			
2.11	_____ -		__YES __NO	__Stock out __Insufficient stock __Incorrect calculations __Product nearing expiry __Surplus __Other			
	Text	#	Y / N	Select One	#	#	Text

Repeat table as necessary for each delivery.

Cost of warehouse and distribution operations

KPI Table 4

Level to Implement: warehouse level

Cost of warehouse operation compares the cost of the operation of the warehouse to the total value of the commodities managed by the warehouse during the period under review, and expresses the costs as percentage of turnover.
Cost of distribution operations compares the cost of the operation of distribution from the warehouse to hospitals and SDPs with the total value of the commodities distributed, and expresses the costs as percentage of turnover.

Required data
- Costs for warehouse operations, distribution, and the value of commodities delivered for the last (completed) fiscal year; data should reflect the entire year.

Data Sources
Operating costs:
- Audited accounts, or management accounts if audited are not available

Value of commodities managed:
- Historical data: opening and closing inventory balances from audited or management accounts, delivery notes or similar for all commodities received.
- Transport costs are not included as warehousing costs, but should be collected if the cost of distribution operations is included as a KPI in the analysis. These should be collected separately from warehousing costs.

Notes:
- These data should be readily available from the warehouse finance department in a single interview. It is recommended that the finance department be advised in advance so that they can have the data readily to hand.
- This is an aggregate measure for the total costs, and does not measure the cost of individual warehouse operations. If costs for *all warehouses* in a country can be collected centrally, this can be done. In many settings, this will not be available and these data should be collected at intermediate warehouses; during the analysis data will be aggregated into a single figure.

Ensure that all amounts are listed in the same currency.

Answer the following questions:

1.1 Enter the currency used for this table: [ ] Text

	Data / Variable	Are data available for 20<mark>XX</mark>?	Amount	Source of data (Audited accounts, management accounts, or budget) and notes on what is included

1.2	Warehouse operating costs
	Operating costs include all costs incurred by the warehouse with two exceptions:
	    1. The costs of/for health commodities & products.
	    2. The costs associated with transportation.
	Thus, warehouse operating costs should include facility maintenance, staff, utilities, etc. These costs should include amortized (annual equivalent) costs of equipment, furniture, buildings, etc.
	Data should reflect the last fiscal year (entire year).
		___YES ___NO		

			Y / N	#	Text
1.3	Transport operating costs *Transport operating costs should include fuel, vehicle maintenance, insurance, registration, etc. Transport operation costs should also include staff costs for drivers and other staff responsible for transport. These costs should also include amortized (annual equivalent) costs of vehicles. If distribution is outsourced (in whole or in part), include the costs of the contracts here.* *Data should reflect the last fiscal year (entire year).*	___YES ___NO		
1.4	Value of opening inventory balance (beginning of year 20XX)	___YES ___NO		
1.5	Value of closing inventory balance (end of year 20XX)	___YES ___NO		
1.6	Value of incoming deliveries	___YES ___NO		

Number and duration of temperature excursions (deviations) in cold storage facility

KPI Table 5

For SDP, referral hospital, and warehouse levels

This indicator measures the number of days in which there was a temperature excursion or percentage of time (in days) that the cold storage facility may not have kept commodities at the required temperature.

Data Sources
• Historical data from warehouse management records. Modern facilities will produce printouts of temperature excursions. For older equipment temperature compliance may rely on visual observation and manual record keeping.

Notes:
• If available it is desirable to collect the duration of individual incidents, as this will indicate the level of risk to commodity quality.
• Well-managed facilities will record each incident and investigate the cause and risk to commodities or corrective and preventive actions (CAPA).
• Sampling or use of tracer commodities is not appropriate for this measure. The review is of operation of the cold storage facility, irrespective of contents, and must cover the full period. A lack of records is a finding, as the warehouse cannot be assured of product quality

1.	**Are temperature logs kept at this pharmacy stores?**	__YES __NO Y / N	*If no, go to next KPI table*
1.1	**How many different temperature logs are at this pharmacy store?**	#	

Enter data for the first temperature log

Temperature log cards typically cover a one month period. Thus, if you are able to find the temperature log card for each of the months listed, and the data are complete on the temperature log card for that month, enter 'Yes', otherwise enter 'No'.

Days in which the cold storage facility did not maintain temperature defined as:

1. Heat excursion, when temperature was above 8°C for **more than 10 hours**

2. Freeze/cold excursion, when the temperature was below 2°C for more than one hour

Enter zero if there were no temperature excursions

	Month	**Are complete data available for this month?**		**Number of new excursions** *A 'new' excursion is after the log shows that temperature returned to 2-8℃*	**Number of days on which there was the temperature excursion**
1.2a	Month1	__YES __NO	If yes →		
1.2b	Month2	__YES __NO	If yes →		
1.2c	Month3	__YES __NO	If yes →		
1.2d	Month4	__YES __NO	If yes →		
1.2e	Month5	__YES __NO	If yes →		
1.2f	Month6	__YES __NO	If yes →		
		yes/no		#	#

Enter observations (e.g., were excursions heat or cold excursions or both?):

42

Enter data for the second temperature log

Temperature log cards typically cover a one month period. Thus, if you are able to find the temperature log card for each of the months listed, and the data are complete on the temperature log card for that month, enter 'Yes', otherwise enter 'No'.

Days in which the cold storage facility did not maintain temperature defined as:

*1. Heat excursion, when temperature was above 8°C for **more than 10 hours***

2. Freeze/cold excursion, when the temperature was below 2°C for more than one hour

Enter zero if there were no temperature excursions

	Month	**Are data available for this month?**		**Number of new excursions**	**Number of days on which there was the temperature excursion**
1.2a	Month1	__YES __NO	If yes →		
1.2b	Month2	__YES __NO	If yes →		
1.2c	Month3	__YES __NO	If yes →		
1.2d	Month4	__YES __NO	If yes →		
1.2e	Month5	__YES __NO	If yes →		
1.2f	Month6	__YES __NO	If yes →		
		yes/no		#	#

Enter observations (e.g., were excursions heat or cold excursions or both?):

Add additional sheets as needed

Staff turnover rate and Percentage of supply chain positions vacant

KPI Table 6

For SDP, referral hospital, and warehouse levels

Staff turnover measures the percentage of supply-chain-specific staff leaving their posts during the reporting period; this is the full calendar year before the assessment.
Percentage of supply chain positions vacant measures the percentage of post vacancies in the supply-chain.

Required data
- Number of supply chain employees vacating their posts
- Total number of supply chain employees
- Number of supply chain posts in the organization
- Total number of supply chain posts vacant

Data Sources
- Interview
- Human resources (HR) records

Notes:
- A simple interview with a health facility manager or HR department can be sufficient for data collection of this indicator.
- Validation of samples of the HR data with the facilities or operational units in question is recommended.
- It will first be necessary to agree which posts are considered supply chain positions with the management. This is subjective, but any manager for whom 100% of their job description is supply chain would definitely be included. In small facilities where supply chain is not a dominant activity, e.g. a rural health facility, a staff member or manager for whom over 50% of their activity is supply chain may be considered supply chain personnel.

Answer the following questions: *Posts refer to positions - whether they are filled or not.*

	Please list the supply chain positions in your facility: *Refer to notes above on which personnel should be considered supply chain positions.*	**Number of supply chain posts FILLED in the facility (Now)** *Enter the number of people currently working at the facility for each job title. This number reflects the number of people who would be working in the health facility if all the facility staff currently employed were present at their jobs on the day of the assessment.*	**Number of supply chain posts VACANT in the facility (Now)** *Enter the number of positions that currently do not have any staff filling the position. Thus, if three months ago, the facility had a Storage Assistant in place, but that Storage Assistant is no longer at the facility, then you should consider that as VACANT, and enter it in this column.*	*For staff turnover rate:* **Number of supply chain posts FILLED in the facility (Start of 20XX)** *Enter the number of people working in each position in January 20XX (from the calendar year before the assessment). These data are the same as Number of supply chain posts FILLED in the facility (Now), but should reflect the situation in January 20XX (rather than the day of the assessment).*	**Number of supply chain posts VACATED in the facility (during 20XX)** *Enter in this column the number of people that left employment at the facility during 20XX. The reason the person left is not relevant – they may have quit, been promoted, retired, etc. All of these should be entered in this column.*
1	Stores manager				
2	Stores assistant				
3	Data manager				
4	Pharmacists				
5	Assistant Pharmacists				
6	Driver				
7					
8					
	Text	#	#	#	#

Add additional sheets as necessary

Enter observations:

National
Supply Chain Assessment
V2.0

All Levels

Date of Visit:	[__|__] [__|__] [__|__|__|__] Day Month Year
Starting time:	[__|__] [__|__] am/pm (circle one) Hour Minutes
Finishing time	[__|__] [__|__] am/pm (circle one) Hour Minutes
Name(s) of Assessor(s)	

INTRODUCTION

This tool is to be used to conduct a National Supply Chain Assessment (NSCA) at the central level with an aim of assessing the overall capability maturity and performance of a health supply chain. The information obtained from the NSCA will enable supply chain managers and implementing partners to monitor whether program activities are achieving their expected outcomes and develop evidence-base strategic and operational plans.

Overall, the NSCA informs two key processes:

1. Evidence-Based Planning & Decision-Making:
   a. Informs country and donor decision-making, by identifying key supply chain areas that require systems strengthening
   b. Provides the evidence that stakeholders require to develop programmatic work plans by leveraging assessment results to prioritize health system strengthening investments to capitalize on efficiencies in an infrastructure and resource constrained environment
2. Performance Management:
   a. The tool can be used at points in time to determine baseline, midline, and end line assessments for supply chain capability maturity and performance
   b. The NSCA tools and associated data can serve to help build a foundation for routine performance management

This tool is part of the NSCA Capability Maturity Model (CMM) Diagnostic Tool that is used to assess the capability maturity of a supply chain at multiple levels – from the central level to service delivery points (SDP), and across functional areas and cross-cutting organizational elements.

SCOPE

The scope of this tool covers the following modules;
- Strategic Planning and Management
- Human resources
- Financial Sustainability
- Policy and Governance
- Quality and Pharmacovigilance
- Forecasting and supply planning
- Procurement and customs clearance
- Warehousing and Storage
- Distribution
- Logistics Management Information Systems
- Waste Management

Key informant interviews are used to populate a set of functional area-specific questionnaires, which are coupled with data on key performance indicators to link inputs to performance.

METHODOLOGY

The tool shall be used to assess the Ministry of Health. The team shall use a combination of interviews, observation and document review to collect data.

The capability and functionality assessment will employ mainly binary (yes/no) questions to enable comparability, ease data collection, and ease of implementation. However, some questions may require selection of multiple responses.

DATA COLLECTION

Data collection and interviews are being conducted by teams of 2 individuals. This team has been assigned to conduct visits to the Ministry of Health. This is a study for the entire logistics system, not the performance of an individual facility or office, so today´s visit is not an audit nor is it intended to serve as a tool for judging your performance as an individual.

The data collection team will Interview the Ministry of Health staff using this tool to collect relevant data. The assessment includes collection of data on the various domains of the supply chain.

Data collection teams are equipped with a Tablet PC to electronically collect and enter data. Data can be collected and entered offline and uploaded later. Data shall be secured and encrypted.

Do you have any questions before we proceed?

FACILITY DETAILS

Facility Name:	
GPS Reading:	**Latitude:** _____ ^{0}**S** **Longitude:** _____ ^{0}**E**
Ownership:	
Physical Address:	
Telephone (1):	
Telephone (2):	
Email Address:	
District:	
Province:	
Revisit required? If manager is busy or not present, please set up a time when the schedule permits.	**Date:** [__|__] [__|__] [__|__|__|__] Day Month Year **Time:** [__|__] [__|__] am/pm *(circle one)* Hour Minutes

RESPONDENT'S DETAILS

	Name	Position	Telephone Contact	Email Address
1				
2				
3				
4				
5				

MODULE 1:
STRATEGIC PLANNING AND MANAGEMENT

CENTRAL/MOH LEVEL: For this module, interview the head of the Ministry of Health department that is responsible for the overall management of the supply chain nationally, if available. If not, interview the deputy head or another person knowledgeable about overall national supply chain management.

CENTRAL OR INTERMEDIATE WAREHOUSE: For this module, interview the warehouse manager, if available. If not, interview the deputy warehouse manager or another person knowledgeable about overall supply chain management at the warehouse.

REFERRAL HOSPITAL: For this module, interview the hospital director, if available. If not, interview the deputy hospital director or another person knowledgeable about overall supply chain management at the facility.

SERVICE DELIVERY POINTS: Not Applicable.

Q#	QUESTIONS	RESPONSES		SKIPS
SPM-100: Strategic Plan				
SPM-101 Ask: MOH Warehouse Referral Hospital	Do you have an approved supply chain strategic plan? NOTE: At the level of the MOH, this would be a national supply chain strategic plan. For OTHER levels - Central or Intermediate Warehouse, or Referral Hospitals - the question is whether they have developed a strategic plan for their own site/facility, to support their specific supply chain needs. **[Verify with SPM-701]**	Yes		If "**Yes**", continue, Otherwise **go to next section [SPM-200]**
		No		
		I don't know		
SPM-102 Ask: MOH Warehouse	Does the supply chain strategic plan include the following areas? **[READ CHOICES – MULTIPLE RESPONSES ALLOWED]** **[VERIFY WITH SPM-702]**	Human Resource		
		LMIS		
		Finance		
		Policy and Governance		
		Forecasting & Quantification		
		Procurement		
		QA/QC		
		Distribution		
		Warehousing		
		Waste management		
		M&E		
		Coordination		
		Product Selection		
		None of the Above		
		I Don't Know		
SPM-103 Ask: Referral Hospital	Does the supply chain strategic plan include the following areas? **[READ CHOICES – MULTIPLE RESPONSES ALLOWED]**	Human Resources		
		LMIS		
		Finance		
		Forecasting & Quantification		
		Procurement/Ordering		

	[VERIFY WITH SPM-703]	Quality assurance / quality control		
		Warehousing/Storage		
		Waste management		
		Monitoring and Evaluation		
		None of the above		
		I don't know		
SPM-104 <u>Ask:</u> MOH Warehouse Referral Hospital	Has the Organization gone through an exercise to identify important stakeholders (stakeholder mapping)? NOTE: Mapping is part of the strategic planning process. The final mapping should be used in developing the strategic plan but does not have to be included in the same document. **[VERIFY WITH SPM-704]**	Yes		
		No		
		I don't know		
SPM-105 <u>Ask:</u> MOH Warehouse Referral Hospital	How often is the supply chain strategic plan newly developed or formally updated? NOTE: For answers in between the choices, round up. For example, if updates are done every 15, 18 or 21 months, select "Every 2 years"	Annually or more often		
		Every 2 years		
		Every 3 years		
		Every 4 years or less often		
		Never		
		I don't know		
SPM-106 <u>Ask:</u> MOH Warehouse Referral Hospital	Does the Supply Chain Strategic Plan contain contents and themes that are aligned with the National Health Sector Strategic Plan and/or Pharmaceutical Sector Strategic Plan? **[Verify with SPM-705]**	Yes		
		No		
		I don't know		
SPM-200: Supply Chain Implementation Plan				
SPM-201 <u>Ask:</u> MOH	Do you have a supply chain implementation plan? NOTE: An implementation plan is a detailed listing of activities, costs, expected difficulties, and	Yes		If **"Yes"**, continue; Otherwise, **go to next section [SPM-300]**
		No		
		I Don't Know		

Warehouse Referral Hospital	SPMhedules that are required to achieve supply chain objectives. It is often the "operational plan" that accompanies a strategic plan. **[Verify with SPM-706]**			
SPM-202 <u>Ask:</u> MOH Warehouse Referral Hospital	What is the timeframe of the supply chain implementation plan? NOTE: For answers in between the choices, round up. For example, if the timeframe is 15, 18 or 21 months, select "2 years"	1 year or less		
		2 years		
		3 years		
		4 or 5 years		
		More than 5 years		
		I don't know		
SPM-203 <u>Ask:</u> MOH Warehouse Referral Hospital	Is the supply chain implementation plan monitored? **[Verify with SPM-707]**	Yes		If **"Yes"**, continue; Otherwise, **go to next section [SPM-300]**
		No		
		I don't know		
SPM-204 <u>Ask:</u> MOH Warehouse Referral Hospital	How often is the supply chain implementation plan monitored?	Quarterly or more often		
		Bi-annually (twice per year)		
		Annually		
		Less frequently than annually		
		Never		
		I don't know		
SPM-205 <u>Ask:</u> MOH Warehouse Referral Hospital	What actions are taken based on the results from monitoring the implementation plan? **[MULTIPLE RESPONSES ALLOWED]**	Finance and resource mobilization		
		Promote efficiencies in the supply chain		
		Identification of additional human resources		
		Improve supply chain management and leadership		
		Improve partnerships and collaborations		

		Others (Please specify)		
		None		
		I don't know		

SPM-300: Strategy and/or Implementation Plan Components				
SPM-301 Ask: MOH Warehouse Referral Hospital	Which of the following elements are included in the supply chain strategic plan or implementation plan? **[MULTIPLE RESPONSES POSSIBLE]** **[Verify with SPM-708]**	Mission/Vision Statement		
		Long-term Goals/Objectives		Skip this section if the answer to SPM-101 AND SPM-201 were "No" or "I don't know" **To skip this section, go to [SPM-400]**
		Roles & responsibilities for specific internal units/positions		
		Stakeholder map		
		SWOT analysis		
		Strategic partnerships		
		Engagement with private sector		
		Specific activities		
		Funding required for each activity		
		Funding available for each activity		
		Milestones/Deliverables		
		None of the above		
		I don't know		
SPM-302 Ask: MOH Warehouse Referral Hospital	Does the strategic plan or implementation plan allocate clear roles and responsibilities to external stakeholders for specific supply chain activities? **[Verify with SPM-709]**	Yes		
		No		
		I don't know		
SPM-303 Ask: MOH	Does the strategic plan or implementation plan include actions to reform the supply chain design and system?	Yes		If **"Yes"**, continue; Otherwise, **go to [SPM-305]**
		No		
		I don't know		

Warehouse Referral Hospital	PROBE: For example, optimizing the distribution network, reducing the number of supply chain tiers, going to 3PL or 4PL (outsourced) systems for warehousing and distribution, etc. NOTE: These actions should represent significant reforms, not minor modifications such as changing min/max set points or frequency of delivery. **[Verify with SPM-710]**			
SPM-304 Ask: MOH Warehouse Referral Hospital	Are these supply chain design reforms being implemented? **[Verify with SPM-711]**	Yes		
		No		
		I don't know		
SPM-305 Ask: MOH Warehouse Referral Hospital SDP	Has the cost/budget to implement the strategy been estimated and included in either the strategic or implementation plan? **[Verify with SPM-712]**	Yes		If **"Yes"**, continue; Otherwise, **go to next section [SPM-400]**
		No		
		I don't know		
SPM-306 Ask: MOH Warehouse Referral Hospital	Considering the anticipated costs and available resources, have you documented any funding gaps? **[Verify with SPM-713]**	Yes		
		We have documented that there are no funding gaps		
		Funding gaps have not been documented		
		I don't know		
SPM-400: Monitoring Supply Chain Performance				
SPM-401		Yes		

	Is there a performance monitoring plan (PMP) or monitoring framework for tracking supply chain performance at this site/health system level? **[Verify with SPM-714]**	No		If **"Yes"**, continue; Otherwise, **go to next section [SPM-500]**
<u>Ask:</u> MOH Warehouse Referral Hospital		I don't know		
SPM-402 <u>Ask:</u> MOH Warehouse Referral Hospital	Is there a formal structure (e.g., Committee, Working Group) in place to monitor the supply chain performance at this site/health system level?	Yes		
		No		
		I don't know		
SPM-403 <u>Ask:</u> MOH Warehouse Referral Hospital	Which stakeholders participate in the review of the supply chain performance? NOTE: This question asks about which stakeholders specifically review performance at this site/organization **[MULTIPLE RESPONSES ALLOWED]**	Board of directors		
		Donors		
		Central level Staff (including but not limited to the Ministries of Health, Finance, Labor and others)		
		District/Regional/Provincial level staff		
		Implementing Partners		
		Others. Please specify:		
		None		
		I don't know		
SPM-404 <u>Ask:</u> MOH Warehouse Referral Hospital SDP	How often do these stakeholder groups meet to review this site's supply chain performance? NOTE: For answers in between the choices, round up. For example, if meetings are held every two months, select "Quarterly"	Monthly or more often		
		Quarterly		
		Bi-annually (twice per year)		
		Annually		
		Less frequently than annually		
		Never		
		I don't know		
SPM-500: Risk Management				
SPM-501	Is there a risk management and mitigation/prevention plan?	Yes		
		No		

Ask: MOH Warehouse Referral Hospital	**[Verify with SPM-715]**	I don't know		
SPM-502 Ask: MOH Warehouse Referral Hospital	How often are supply chain risks formally assessed? NOTE: For answers in between the choices, round up. For example, if risk assessments are done every 15, 18 or 21 months, select "Every 2 years"	Continuously		
		Quarterly or bi-annually (twice per year)		
		Annually		
		Every 2 years		
		Every 3 years or less often		
		Never		
		I don't know		
SPM-503 Ask: MOH Warehouse Referral Hospital	What are the top 3 types of risk experienced in the supply chain? Note: Examples of social risks may include reputational losses, human welfare and safety, working conditions, human rights violations **[MULTIPLE RESPONSES ALLOWED]**	Financial		
		Operational		
		Human Resources (e.g., Leadership & Turnover)		
		Economic (e.g., exchange rate)		
		Technology		
		Environmental		
		Political		
		Social Aspects		
		Legal		
		Donor Issues		
		Others (Please Specify)		
		None of the above		

		I don't know		

SPM-504 Ask: MOH Warehouse Referral Hospital	Do you have mitigation measures for any of the following risks? **[MULTIPLE RESPONSES ALLOWED]**	Inaccurate forecasting data		
		Non-competitive prices		
		Fraud		
		Prolonged delays in procurement process		
		Inaccurate ordering of commodities by facilities		
		Delay in submission of LMIS reports		
		Supply of inferior quality medicines		
		Loss of inbound and outbound goods in transit		
		Others (Please Specify)		
		No mitigation measures in place		
		I don't know		

SPM-600: Private Sector Partnerships				
SPM-601 Ask: MOH Warehouse	Does the current MOH and supply chain leadership identify coordination or engagement with private sector companies as a means of improving the supply chain?	Yes		
		No		
		I don't know		
SPM-602 Ask: MOH Warehouse	Has there been coordination or engagement with private sector companies to improve the supply chain in the last one year? **[Verify with SPM-716]**	Yes		If **"Yes"**, continue; Otherwise, **go to next section [SPM-700]**
		No		
		I don't know		
SPM-603 Ask: MOH Warehouse	Is there a formal or informal strategy or approach for utilizing public private partnerships to improve supply chain performance?	Formal (e.g., policy, official strategy, written agreements)		
		Informal (e.g., public statements, informal relationships, internal memos or discussions)		
		Formal and Informal		
		I don't know		

SPM-604 Ask: MOH Warehouse	In which of the following ways do public private partnerships help the government with supply chain management? **[MULTIPLE RESPONSES ALLOWED]**	Training or access to training materials		
		Coaching/Mentorship		
		Secondments		
		Other technical assistance		
		In kind provision of resources		
		Financial resources		
		Strengthen private sector health services (e.g., at retail outlets for commodities)		
		Information sharing (e.g., long term forecast)		
		National/community insurance SPMheme to pay for private services		
		Provision of specific supply chain services		
		3PL or 4PL (broad supply chain services)		
		Others (Please specify)		
		None		
		I don't know		
SPM-605 Ask: MOH Warehouse	Which supply chain functions does the public/private partnership focus on? **[MULTIPLE RESPONSES ALLOWED]**	LMIS		
		Waste Management		
		Quality Assurance		
		Pharmacovigilance		
		Warehousing and storage		
		Procurement		
		Supply Planning and Forecasting		
		Financing		
		Human Resources		
		Distribution		

		Other (Please specify)		
		None of these		
		I don't know		

SPM-700: PHYSICAL VERIFICATION: **Please ask to see physical copies of the following documents, and verify the questions above**
Q#	**VERIFICATION REQUIRED**	**RESPONSES**	**SKIPS**
SPM-701	Verify the existence of an approved supply chain strategic plan. **[VERIFIES SPM-101]**	Physically verified	1	**SKIP** this question if **SPM-101** is "No" or "I don't know"
		Could Not be physically verified	2	
SPM-702	Verify from the Supply chain strategic plan that the following areas are included **[VERIFIES SPM-102]**	Human Resource	1	**SKIP** this question if **SPM-102** is "None of the above" or "I don't know"
		LMIS	2	
		Finance	3	
		Policy and Governance	4	
		Forecasting & Quantification	5	
		Procurement	6	
		Quality Assurance/Quality Control	7	
		Distribution	8	
		Warehousing	9	
		Waste Management	10	
		Monitoring and Evaluation	11	
		Coordination	12	
		Product Selection	13	
		None of the Above	14	
SPM-703	Verify from the Supply chain strategic plan that the following areas are included **[VERIFIES SPM-103]**	Human Resource	1	**SKIP** this question if **SPM-103** is "None of the above" or "I don't know"
		LMIS	2	
		Finance	3	
		Policy and Governance	4	
		Forecasting & Quantification	5	
		Procurement	6	
		Quality Assurance/Quality Control	7	

		Distribution	8	
		Warehousing	9	
		Waste Management	10	
		Monitoring and Evaluation	11	
		Coordination	12	
		Product Selection	13	
		None of the Above	14	
SPM-704	Verify the existence of a stakeholder map. **[VERIFIES SPM-104]**	Physically verified	1	**SKIP** this question if **SPM-104** is **"No"** or **"I don't know"**
		Could Not be physically verified	2	
SPM-705	Verify that the Supply Chain Strategic Plan contains contents & themes that are aligned with the National Health Sector Strategic Plan and/or Pharmaceutical Sector Strategic Plan **[VERIFIES SPM-106]**	Physically verified	1	**SKIP** this question if **SPM-106** is **"No"** or **"I don't know"**
		Could Not be physically verified	2	
SPM-706	Verify whether the organization has a supply chain implementation plan in place **[VERIFIES SPM-201]**	Physically verified	1	**SKIP** this question if **SPM-201** is **"No"** or **"I don't know"**
		Could Not be physically verified	2	
SPM-707	Verify monitoring of the implementation plan, for example with meeting minutes or a progress report that documents progress with the implementation plan. **[VERIFIES SPM-203]**	Physically verified	1	**SKIP** this question if **SPM-203** is **"No"** or **"I don't know"**
		Could Not be physically verified	2	
SPM-708	Verify whether the following elements are included in the supply chain strategic plan or implementation plan. **[VERIFIES SPM-301]**	Timeframe	1	**SKIP** this question if **SPM-301** is **"None** of the above" or **"I don't know"**
		Mission/Vision Statement	2	
		Long-term Goals/Objectives	3	
		Roles & Responsibilities for specific internal units/positions	4	
		Stakeholder map	5	
		SWOT analysis	6	
		Strategic partnerships	7	
		Engagement with private sector	8	
		Specific activities	9	

		Funding required for each activity	10	
		Funding available for each activity	11	
		Milestones/Deliverables	12	
		None of the above	13	
SPM-709	Verify whether the strategic plan or implementation plan allocate clear roles and responsibilities to external stakeholders for specific supply chain activities. [VERIFIES SPM-302]	Physically verified	1	**SKIP** this question if **SPM-302** is **"No"** or **"I don't know"**
		Could Not be physically verified	2	
SPM-710	Verify whether the strategic plan or implementation plan include actions to significantly reform the supply chain design and system [VERIFIES SPM-303]	Physically verified	1	**SKIP** this question if **SPM-303** is **"No"** or **"I don't know"**
		Could Not be physically verified	2	
SPM-711	Verify that the supply chain design reforms deSPMribed above are being implemented, for example with meeting minutes or a progress report that documents progress with the reforms. [VERIFIES SPM-304]	Physically verified	1	**SKIP** this question if **SPM-304** is **"No"** or **"I don't know"**
		Could Not be physically verified	2	
SPM-712	Verify that the cost/budget to implement the strategy been estimated and included in either than strategic or implementation plan [VERIFIES SPM-305]	Physically verified	1	**SKIP** this question if **SPM-305** is **"No"** or **"I don't know"**
		Could Not be physically verified	2	
SPM-713	Verify that funding gaps, or the lack of funding gaps, for the strategic plan or implementation plan have been documented [VERIFIES SPM-306]	Physically verified	1	**SKIP** this question, if **SPM-306** is **"Funding gaps have not been documented"** or **"I don't know"**
		Could Not be physically verified	2	
SPM-714	Verify existence of a performance monitoring plan (PMP) or monitoring framework for tracking supply chain performance at this site/health system level [VERIFIES SPM-401]	Physically verified	1	**SKIP** this question if **SPM-401** is **"No"** or **"I don't know"**
		Could Not be physically verified	2	

SPM-715	Verify whether there is a risk management and mitigation/prevention plan **[VERIFIES SPM-501]**	Physically verified	1	**SKIP** this question if **SPM-501** is **"No"** or **"I don't know"**
		Could Not be physically verified	2	
SPM-716	Verify if there has been engagement between the Ministry of Health and private sector companies to improve the supply chain in the last one year **[VERIFIES SPM-602]**	Physically verified	1	**SKIP** this question if **SPM-602** is **"No"** or **"I don't know"**
		Could Not be physically verified	2	

ID1	Ending Time	End: [__|__] [__|__] am/pm Hour Minutes

Any notes about interview:

END OF MODULE 1 – STRATEGIC PLANNING AND MANAGEMENT

MODULE 2:
HUMAN RESOURCES

CENTRAL/MOH LEVEL: For this module, interview the head of the Ministry of Health department that is responsible for the overall management of the supply chain nationally OR the head of the MOH human resources department, if available. If not, interview the deputy head or another person knowledgeable about human resources management for supply chain personnel throughout the country.

CENTRAL OR INTERMEDIATE WAREHOUSE: For this module, interview the head of human resources for the warehouse, if available. If not, interview the warehouse manager or another person knowledgeable about human resources management in the warehouse.

REFERRAL HOSPITAL: For this module, interview the head of human resources for the hospital, if available. If not, interview the head of pharmacy or the storeroom, or another person knowledgeable about human resources management of supply chain personnel in the hospital.

SERVICE DELIVERY POINTS: For this module, interview the facility head if available. If not, interview the deputy facility head or another person knowledgeable about human resources management in the facility.

Q#	QUESTIONS	RESPONSES		SKIPS
HR-100: Workforce planning				
HR-101 Ask: MOH Warehouse Referral Hospital	Is there a human resource workforce plan that projects future needs for supply chain personnel at this site/health system level? NOTE: A human resource workforce plan projects the number of workers needed per cadre in the future, at least for the next year. For this question, supply chain personnel should be explicitly addressed. **[VALIDATE WITH HR-701]**	Yes		
		No		
		I don't know		
HR-102 Ask: MOH Warehouse Referral Hospital SDP	Is budget for supply chain personnel included in the Government budget, at the national or subnational level?	Yes		If **"Yes"**, continue; Otherwise, **go to next section [HR-200]**
		No		
		I don't know		
HR-103 Ask: MOH Warehouse Referral Hospital SDP	What proportion of required positions have funding in the Government budget, at the national or subnational level? NOTE: percentages are given as a guide; the exact percentage is not needed.	All (100%)		
		Most (51 - 99%)		
		Some (26-50%)		
		Minimal (1 - 25%)		
		None		
		I don't know		
HR-200: Recruiting				
HR-201 Ask: MOH	Is there a staff recruitment policy in place for supply chain personnel?	Yes, general staff recruitment policies, which are applied to supply chain personnel		

Q#	QUESTIONS	RESPONSES		SKIPS
Warehouse Referral Hospital **[VERIFY WITH HR-702]**	PROMPT: A recruitment policy is a course or principle of action adopted or proposed by an organization to recruit personnel.	Yes, recruitment policies specific to supply chain roles		
		No		
		I don't know		
HR-202 <u>Ask:</u> MOH	Is there a job description with appropriate qualifications for the head of logistics at the central level? **[VERIFY WITH HR-703]**	Yes		If **"Yes"**, continue; Otherwise, **go to next section [HR-300]**
		No		
		I don't know		
HR -203 <u>Ask:</u> Warehouse	Is there a job description with appropriate qualifications for the warehouse head? **[VERIFY WITH HR-704]**	Yes		If **"Yes"**, continue; Otherwise, **go to next section [HR-300]**
		No		
		I don't know		
HR-204 <u>Ask:</u> Referral Hospital SDP	Are there job descriptions with appropriate qualifications for pharmacy and stores personnel? **[VERIFY WITH HR-705]**	Yes		If **"Yes"**, continue; Otherwise, go to next section **[HR-300]**
		No		
		I don't know		
HR-205 <u>Ask:</u> MOH Warehouse	Which of the following supply chain functions are included in the job descriptions for at least some supply chain personnel? **[MULTIPLE RESPONSES ALLOWED]** **[VERIFY WITH HR-706]**	Forecasting & Quantification		
		Product Selection		
		Procurement		
		Supply planning		
		Warehousing & inventory management		
		Distribution		
		LMIS		
		Ordering & reporting		

Q#	QUESTIONS	RESPONSES		SKIPS
		Waste management		
		Quality & Pharmacovigilance		
		None of the above		
		I don't know		
HR-206 Ask: Referral Hospital	Which of the following supply chain functions are included in the job descriptions for at least some pharmacy and stores personnel? **[MULTIPLE RESPONSES ALLOWED]** **[VERIFY WITH HR-707]**	Forecasting & Quantification		
		Procurement		
		Storage & inventory management		
		LMIS		
		Ordering & reporting		
		Waste management		
		Quality & Pharmacovigilance		
		None of the above		
		I don't know		
HR-207 Ask: SDP	Which of the following supply chain functions are included in the job descriptions for at least some pharmacy and stores personnel? **[MULTIPLE RESPONSES ALLOWED]** **[VERIFY WITH HR-708]**	Storage & inventory management		
		LMIS		
		Ordering & reporting		
		Waste management		
		Medicine quality assurance		
		None of the above		
		I don't know		
HR-300: Workforce Capacity Building				

Q#	QUESTIONS	RESPONSES		SKIPS
HR-301 Ask: MOH Warehouse	Which capacity building programs are available for staff in country? NOTE: Programs can be funded by MOH or Donor **[MULTIPLE RESPONSES ALLOWED]**	"Classroom" training that does not provide any formal supply chain degree or certification (including stand alone classroom training or a module in a larger pharmacy or public health course)		
		Mentorship		
		Coaching		
		Structured on the job training		
		E-Learning programs in supply chain		
		Certificate Programs in supply chain		
		Diploma programs in supply chain		
		Bachelor's/undergraduate degree program in supply chain		
		Master's Program in supply chain		
		None of the above		
		I don't know		
HR-302 Ask: MOH Warehouse Referral Hospital SDP	Is there a unified supply chain capacity building plan or staff development plan for current employees? NOTE: This is a single plan for all supply chain staff at the facility or health system level, not a specific professional development plan for each employee. **[VERIFY WITH HR-709]**	Yes		If **"Yes"**, continue; Otherwise, go to **[HR-304]**
		No		
		I don't know		
HR-303		All (100%)		
		Most (51-99%)		

Q#	QUESTIONS	RESPONSES		SKIPS
Ask: MOH Warehouse	Do donors and partners align their capacity building offerings with the above plan? NOTE: percentages are given as a guide; the exact percentage is not needed.	Some (26-50%)		
		Minimal (1-25%)		
		None		
		I don't know		
HR-304 Ask: MOH Warehouse Referral Hospital	Which of the following areas were covered under the capacity building sessions in the last 1 year? **[MULTIPLE RESPONSES ALLOWED]**	Forecasting & Quantification		
		Procurement		
		Warehousing & inventory management		
		Distribution		
		LMIS		
		Ordering & reporting		
		Medicine quality assurance		
		Pharmacovigilance		
		Treatment Guidelines		
		Changes in National policy		
		None of the above		
		I don't know		
HR-305 Ask: SDP	Which of the following areas were covered under the capacity building sessions in the last 1 year? **[MULTIPLE RESPONSES ALLOWED]**	Stores & inventory management		
		LMIS		
		Ordering & reporting		
		Waste management		
		Medicine quality assurance		
		Treatment Guidelines		
		Changes in National policy		
		None of the above		
		I don't know		
HR-306 Ask: MOH Warehouse	Do the following types of capacity building materials and/or tools for supply chain exist at this site? **[MULTIPLE ANSWERS ALLOWED]**	Standard Operating Procedures		
		Training guides or materials		
		Other job aids. Please specify:		
		None of the above		

Q#	QUESTIONS	RESPONSES		SKIPS
Referral Hospital SDP		I don't know		
HR-307 <u>Ask:</u> MOH Warehouse Referral Hospital SDP	Is the outcome of the capacity building evaluated? NOTE: Acceptable forms of evaluation include proficiency testing, an evaluation program, or a national capacity building monitoring system.	Yes		
		No		
		I Don't Know		
HR-308 <u>Ask:</u> MOH Warehouse Referral Hospital SDP	Is there a database to keep track of staff that have had capacity building sessions in supply chain management? NOTE: The database may be a file, paper or electronic, that is accessible by staff. **[VERIFY WITH HR-710]**	Yes		
		No		
		I Don't Know		
HR-309 <u>Ask:</u> MOH Warehouse Referral Hospital SDP	What proportion of staff participated in capacity building sessions/opportunities in the last two years? NOTE: The denominator should be number of technical staff NOTE: Percentages are given as a guide; the exact percentage is not needed.	None		
		Minimal (1 - 25%)		
		Some (26-50%)		
		Most (51 - 99%)		
		All (100%)		
		I don't know		
HR-310	What are the critical barriers to supply chain management capacity building programs?	Finances		
		Workload		
		Skilled Trainers		

Q#	QUESTIONS	RESPONSES		SKIPS
Ask: MOH Warehouse Referral Hospital SDP	**[MULTIPLE RESPONSES ALLOWED]**	Materials		
		Language		
		Perceptions		
		Lack of Interest		
		Time		
		Others (Please Specify)		
		No barriers to report		
		I don't know		
HR-400: Performance Reviews
HR-401 Ask: MOH Warehouse Referral Hospital SDP	How often is staff performance reviewed? NOTE: This question refers to one-on-one performance reviews between supervisors and supervisees. The performance review should be formalized in some way. If the staff performance review is informal, this should be answered "Never". Please ask questions to clarify. NOTE: For answers in between the choices, round up. For example, if reviews are done every 9 months, select "Annually"	Quarterly or more often		If **"Never"**, go to **[HR-501]**; Otherwise, continue
		Bi-annually (twice per year)		
		Annually		
		Less frequently than annually		
		Never		
		I don't know		
HR-402 Ask: MOH Warehouse Referral Hospital SDP	What actions are taken after performance staff reviews? NOTE: Incentives are not necessarily monetary.	Provision of incentives		
		Implementation of Performance Development Plans		
		Others (Please Specify:)		
		None		
		I don't know		
HR-500: Supportive Supervision
HR-501		Yes		If **"Yes"**, continue;
		No		

Q#	QUESTIONS	RESPONSES		SKIPS
Ask: Warehouse Referral Hospital SDP	Have the facility's supply chain staff received supportive supervision within the last year? NOTE: Supportive supervision is supervision that includes some aspect of mentorship / problem-solving. It is supervision from outside of the organization. NOTE: Supportive supervision should be scheduled, and should have occurred within the last year to answer "yes" to this question.	I Don't Know		Otherwise, go to **[HR-506]**
HR-502 Ask: Warehouse Referral Hospital SDP	Who has provided supply chain supportive supervision to this site within the last year? **[MULTIPLE RESPONSES ALLOWED]**	MOH/government staff (from any health system level)		
		Development partners		
		Others. Please specify:		
		I don't know		
HR-503 Ask: Warehouse Referral Hospital SDP	Which of the following is responsible for providing supportive supervision to this site? **[MULTIPLE RESPONSES ALLOWED]**	MOH staff- central		
		Central warehouse staff		
		Intermediate level health office staff (e.g., district or regional health authority)		
		Regional/ Intermediate Warehouse staff		
		Development partners		
		Others. Please specify:		
		I don't know		
HR-504		Yes		

Q#	QUESTIONS	RESPONSES		SKIPS
Ask: Warehouse Referral Hospital SDP	Do supply chain staff receive immediate feedback after supportive visits?	No		
		I don't know		
HR-505 Ask: Warehouse Referral Hospital SDP	Are corrective actions taken following supervision visits to this facility/organization?	Yes		
		No		
		I don't know		
HR-506 Ask: MOH	Does this facility provide supportive supervision to any the following? **[MULTIPLE RESPONSES ALLOWED]**	Lower level warehouses/storerooms		If **"Lower level warehouses/ storerooms"** or **"Health facilities"** continue; Otherwise, **go to next** section **[HR-600]**
		Health facilities		
		None of the above		
		I don't know		
HR-507 Ask: MOH	Does the MOH provide supportive supervision specific to supply chain to lower level sites? NOTE: Supportive supervision is supervision that includes some aspect of mentorship / problem-solving. It is supervision from outside of the organization. NOTE: Supportive supervision should be scheduled, and should have occurred within the last year to answer "yes" to this question.	Yes		If **"Yes"**, continue; Otherwise, **go to next section [HR-600]**
		No		
		I don't know		
HR-508	Are guidelines for supportive supervision, that explicitly refer to	Yes		

Q#	QUESTIONS	RESPONSES		SKIPS
Ask: MOH Warehouse Referral Hospital	supply chain supervision, available at this site? **[VERIFY WITH HR-711]**	No		
		I don't know		
HR-600: Budget for Human Resource			
HR-601 Ask: MOH Warehouse Referral Hospital SDP	Who is responsible for funding the human resource budget for supply chain? NOTE: This question is specific to the human resources working in the supply chain. **[MULTIPLE RESPONSES ALLOWED]**	Government budget (central or decentralized level)		If **"Government"** or **"facility revenue/cost recovery"**, continue; Otherwise, **go to next section [HR-700]**
		Donor/Implementing Partners		
		Facility revenue/cost recovery		
		I don't know		
HR-602 Ask: MOH Warehouse Referral Hospital SDP	How much is government budget or facility revenue/cost recovery contributing to recurring human resource costs? NOTE: percentages are given as a guide; the exact percentage is not needed.	Minimal (less than 25%)		
		Some (25-50%)		
		Most (51-99%)		
		All (100%)		
		I don't know		

HR-700: PHYSICAL VERIFICATION: **Please ask to see physical copies of the following documents, and verify the questions above**			
Q#	**VERIFICATION REQUIRED**	**RESPONSES**		**SKIPS**
HR-701	Verify the existence of a human resource workforce plan that projects future needs for supply chain personnel at this site/health system level	Physically verified		**SKIP** this question if **HR-101** is **"No"** or **"I don't know"**
		Could Not be physically verified		

		[VERIFIES HR-101]			
HR-702	Verify whether staff recruitment policies exist and if they make specific reference to supply chain personnel [VERIFIES HR-201]	Physically verified that general staff recruitment policies exist (no reference to supply chain roles)		**SKIP** this question if **HR-201** is **"No"** or **"I don't know"**
		Physically verified that recruitment policies exist and make specific reference to supply chain roles		
		Could Not be physically verified		
HR -703	Verify existence of a job description for the head of logistics at the central level, which includes appropriate supply chain qualifications [VERIFIES HR-202]	Physically verified		**SKIP** this question if **HR-202** is **"No"** or **"I don't know"**
		Could Not be physically verified		
HR-704	Verify existence of a job description for the warehouse head, which includes appropriate supply chain qualifications [VERIFIES HR-203]	Physically verified		**SKIP** this question if **HR-203** is **"No"** or **"I don't know"**
		Could Not be physically verified		
HR-705	Verify existence of a job description for pharmacy and stores personnel, which includes appropriate supply chain qualifications [VERIFIES HR-204]	Physically verified		**SKIP** this question if **HR-204** is **"No"** or **"I don't know"**
		Could Not be physically verified		

HR-706	Verify whether the following supply chain functions are included in the Job descriptions for supply chain personnel **[VERIFIES HR-205]**	Forecasting & Quantification		**SKIP** this question if **HR-205** is **"None of the above"** or **"I don't know"**
		Product Selection		
		Procurement		
		Supply Planning		
		Warehousing and Inventory Management		
		Distribution		
		LMIS		
		Ordering and Reporting		
		Waste Management		
		Quality and Pharmacovigilance		
		None of the above		
HR-707	Verify whether the following supply chain functions are included in the Job descriptions for supply chain personnel **[VERIFIES HR-206]**	Forecasting & Quantification		**SKIP** this question if **HR-206** is **"None of the above"** or **"I don't know"**
		Procurement		
		Storage & Inventory Management		
		LMIS		
		Ordering and Reporting		
		Waste Management		
		Quality and Pharmacovigilance		
		None of the above		
HR-708	Verify whether the following supply chain functions are included in the Job descriptions for Pharmacy and Stores personnel **[VERIFIES HR-207]**	Storage & inventory management		**SKIP** this question if **HR-207** is **"None of the above"** or **"I don't know"**
		LMIS		
		Ordering & Reporting		
		Waste Management		
		Medicine Quality Assurance		
		None of the above		
HR-709	Verify whether there is a unified supply chain capacity building plan or staff development plan for current employees	Physically verified		**SKIP** this question if **HR-302** is **"No"** or **"I don't know"**
		Could Not be physically verified		

	[VERIFIES HR-302]			
HR-710	Verify if there is a database to keep track of staff that have had capacity building sessions in supply chain management **[VERIFIES HR-308]**	Physically verified		**SKIP** this question if **HR-308** is **"No"** or **"I don't know"**
		Could Not be physically verified		
HR-711	VERIFY if guidelines for supportive supervision, that explicitly refer to supply chain supervision, are available at this site **[VERIFIES HR-508]**	Physically verified		**SKIP** this question if **HR-508** is **"No"** or **"I don't know"**
		Could Not be physically verified		

ID2	Ending Time	End : [__|__] [__|__] am/pm Hour Minutes

Any notes about interview:

END OF MODULE 2 – HUMAN RESOURCES

MODULE 3:
FINANCIAL SUSTAINABILITY

CENTRAL/MOH LEVEL: For this module, interview the head of the Ministry of Health department that is responsible for the overall management of the supply chain nationally, if available. If not, interview the deputy head or another person knowledgeable about financing and financial management of the supply chain throughout the country.

CENTRAL OR INTERMEDIATE WAREHOUSE: For this module, interview the warehouse manager, if available. If not, interview the deputy warehouse manager, financial manager, or another person knowledgeable about financing and financial management at the warehouse.

REFERRAL HOSPITAL: For this module, interview the hospital director if available. If not, interview the deputy hospital director, financial manager, or another person knowledgeable about financing and financial management at the hospital.

SERVICE DELIVERY POINTS: For this module, interview the facility head if available. If not, interview the accountant or another person knowledgeable about financing and financial management at the facility.

Q#	QUESTIONS	RESPONSES		SKIPS
		FS-100: Budgets		
FS-101 Ask: MOH Warehouse Referral Hospital SDP	What are your sources of funding for supply chain operations? NOTE: Funding in this case makes reference to all supply chain operations, but does NOT include the cost of health commodities [MULTIPLE RESPONSES ALLOWED]	Government budget (central or decentralized level)		If "Government budget" or "facility revenue/cost recovery", continue; Otherwise, go to FS-104
		Donor/Implementing Partners		
		Facility revenue/cost recovery		
		Others. Please specify:		
		I don't know		
FS-102 Ask: MOH Warehouse Referral Hospital SDP	How much is government budget or facility revenue/cost recovery contributing to the total supply chain operations budget at this level of the supply chain system? NOTE: percentages are given as a guide; the exact percentage is not needed.	Minimal (less than 25%)		
		Some (25-50%)		
		Most (51-99%)		
		All (100%)		
		I don't know		
FS-103 Ask: MOH Warehouse Referral Hospital SDP	In the past year, what proportion of identified total financial NEED for supply chain operations was supported by funds allocated by the government budget or facility revenue/cost recovery? NOTE: While FS-102 asked about the proportion of the total supply chain operations budget that was provided by government, this asks what percent of the total NEED was actually funded by government. The actual need may be larger than the total budget. NOTE: percentages are given as a guide; the exact percentage is not needed.	Minimal (less than 25%)		
		Some (25-50%)		
		Most (51-99%)		
		All (100%)		
		I don't know		

Q#	QUESTIONS	RESPONSES		SKIPS
FS-104 Ask: MOH Warehouse Referral Hospital SDP	Is donor/implementing partner funding consistent with your supply chain operations budget needs and priorities? NOTE: percentages are given as a guide; the exact percentage is not needed.	All the time (100%)		Skip this question if FS-101 did not include "Donor/Implementing Partners" FS-105
		Most of the time (51-99%)		
		Sometimes (25-50%)		
		Minimally (less than 25% of the time)		
		I don't know		
FS-105 Ask: MOH Warehouse Referral Hospital SDP	What are your sources of funding for health commodities? NOTE: Funding in this case makes reference to the landed cost of all health commodities, including pharmaceuticals, medical devices, lab supplies, and medical supplies. [MULTIPLE RESPONSES ALLOWED]	Government budget (central or decentralized level)		If "Government budget" or "facility revenue/cost recovery", continue; Otherwise, go to FS-107
		Donor/Implementing Partners		
		Facility revenue/cost recovery		
		Others. Please specify:		
		I don't know		
FS-106 Ask: MOH Warehouse Referral Hospital SDP	How much is government budget or facility revenue/cost recovery contributing to the total budget for health commodities at this level of the supply chain system? NOTE: percentages are given as a guide; the exact percentage is not needed.	Minimal (less than 25%)		
		Some (25-50%)		
		Most (51-99%)		
		All (100%)		
		I don't know		
FS-107	In past year, was there a health commodities budget shortfall?	Yes		If "Yes", continue;
		No		

Q#	QUESTIONS	RESPONSES		SKIPS
Ask: MOH Warehouse Referral Hospital SDP		I don't know		Otherwise, go to FS -109
FS-108 Ask: MOH Warehouse Referral Hospital SDP	How was the budget shortfall addressed? [MULTIPLE RESPONSES ALLOWED]	Internal allocation of funds		
		Donor funding		
		Donor in-kind donations		
		Government		
		Budgets cuts made		
		Other (Please Specify:)		
		Not addressed		
		I don't know		
FS-109 Ask: MOH	Is the amount of donor support routinely tracked by the MOH?	Yes		Skip this question if NEITHER FS-101 nor FS-105 included "Donor/Implementing Partners"
		No		
		I don't know		
FS-110 Ask: MOH Warehouse Referral Hospital	Is there an opportunity for different stakeholders (e.g. donors, implementing partners, other government entities, etc.) to provide input into the budgeting process?	Yes		
		No		
		I don't know		
FS-111	How often are budgets prepared or updated?	Annually or more often		

Q#	QUESTIONS	RESPONSES		SKIPS
Ask: MOH Warehouse Referral Hospital SDP		Less often than every year		
		I don't know		
FS-200: Budget Reallocation				
FS-201 Ask: MOH Warehouse Referral Hospital SDP	Can funding be reallocated at the management level, for example to allow for flexibility in the use of budget resources?	Yes		
		No		
		I don't know		
FS-202 Ask: MOH Warehouse Referral Hospital SDP	Does the budget include miscellaneous funds - money that can be used to address unexpected issues that arise during the year?	Yes		
		No		
		I don't know		
FS-203	Is there a process for submitting unbudgeted requests?	Yes		
		No		

Q#	QUESTIONS	RESPONSES		SKIPS
Ask: MOH Warehouse Referral Hospital SDP		I don't know		
FS-300: Cost Tracking				
FS-301 Ask: MOH Warehouse Referral Hospital SDP	Are supply chain costs recorded and records maintained (e.g. products, warehousing, distribution, personnel, overhead, service delivery etc.)? VERIFY WITH FS-801	Yes		
		No		
		I don't know		
FS-302 Ask: MOH Warehouse	Has a supply chain costing study been completed within the last 5 years?	Yes		
		No		
		I don't know		
FS-400: Funding Strategy				
FS-401		Yes		
		No		

Q#	QUESTIONS	RESPONSES		SKIPS
Ask: MOH Warehouse Referral Hospital SDP	Does your facility/entity have a funding strategy that explicitly includes supply chain costs? NOTE: For example, the funding strategy may be part of an overall business plan/strategic plan VERIFY WITH FS-802	I don't know		
FS-500: Cost Tracking				
FS-501 Ask: MOH Warehouse Referral Hospital SDP	Is there a cost sharing policy/plan in place with donors for the supply chain? Cost share refers to the resources a recipient contributes to the total cost of an agreement. VERIFY WITH FS-803	Yes		
		No		
		I don't know		
FS-600: Financial Management				
FS-601 Ask: Warehouse	Does your unit regularly prepare and submit Financial Reports?	Yes		
		No		
		I don't know		
FS-602 Ask: Warehouse	Do you use an Income or Profit and Loss statement?	Yes		
		No		
		I don't know		
FS-603		Yes		
		No		

Q#	QUESTIONS	RESPONSES		SKIPS
Ask: Warehouse	Do you measure Liabilities? (Long Term Debt, Short Term Loans, Accounts Payable)	I don't know		
FS-604 Ask: Warehouse	Do you measure your Cash Cycle/Cash Flow? (How long it takes to collect Accounts Receivable versus incoming revenue)	Yes		
		No		
		I don't know		
FS-605 Ask: Warehouse	Does the unit conduct annual accounts receivable, expense audits, currency conversion transactions audits?	Yes		
		No		
		I don't know		
FS-606 Ask: Warehouse	Are Capital Assets inventoried at least yearly?	Yes		
		No		
		I don't know		
FS-607 Ask: Warehouse	Do you measure Depreciation?	Yes		
		No		
		I don't know		
FS-700: Insurance Reimbursements				
FS-701	Does this site accept health insurance?	Yes		If "Yes", continue;
		No		

Q#	QUESTIONS	RESPONSES		SKIPS
Ask: Referral Hospital SDP		I don't know		Otherwise, go to next section FS-800
FS-702 Ask: Referral Hospital SDP	Do insurance reimbursements adequately cover costs for supplying health commodities (i.e., the commodity cost and supply chain costs)?	Yes		
		No		
		I don't know		
FS-703 Ask: Referral Hospital SDP	Are insurance reimbursements timely?	All the time		
		Some of the time		
		Rarely or never		
		I don't know		

FS-800: PHYSICAL VERIFICATION: Please ask to see physical copies of the following documents, and verify the questions above				
Q#	VERFICATION REQUIRED	RESPONSES		SKIPS
FS-801	Verify whether supply chain costs (e.g. products, warehousing, distribution, personnel, overhead, service delivery etc.) are recorded and records maintained [VERIFY WITH FS-301]	Physically verified		SKIP this question if FS-301 is "No" or "I don't know"
		Could Not be physically verified		
FS-802	Verify whether the facility/entity has a funding strategy – for example, as part of an overall business plan/strategic plan – that explicitly includes supply chain costs [VERIFY WITH FS-401]	Physically verified		SKIP this question if FS-401 is "No" or "I don't know"
		Could Not be physically verified		
FS-803	Verify existence of a cost sharing policy/plan with donors [VERIFY WITH FS-501]	Physically verified		SKIP this question if FS-501 is "No" or "I don't know"
		Could Not be physically verified		

ID3	Ending Time	End : [__|__] [__|__] am/pm Hour Minutes

Any notes about interview:

END OF MODULE 3 – FINANCIAL SUSTAINABILITY

MODULE 4:
POLICY AND GOVERNANCE

CENTRAL/MOH LEVEL: For this module, interview the head of the Ministry of Health department that is responsible for the overall management of the supply chain nationally, if available. If not, interview the deputy head or another person knowledgeable about policy and governance aspects of the national supply chain.

CENTRAL OR INTERMEDIATE WAREHOUSE: For this module, interview the warehouse manager, if available. If not, interview the deputy warehouse manager or another person knowledgeable about supply chain policies and governance at the warehouse.

REFERRAL HOSPITAL: For this module, interview the hospital director, if available. If not, interview the deputy hospital director or another person knowledgeable about supply chain policies and governance at the hospital.
Note: This module has only a few questions on policy and governance for referral hospitals.

SERVICE DELIVERY POINTS: For this module, interview the facility head if available. If not, interview the accountant or another person knowledgeable about financing and financial management at the facility.
Note: This module has only a few questions about standard treatment guidelines for service delivery points.

Q#	QUESTIONS	RESPONSES		SKIPS
PG-100: Strategies and Governance				
PG-101 Ask: MOH	Has the MOH established a National Medicines Policy that includes objectives for supply chain management? VERIFY WITH PG-401	Yes		If "Yes", continue; Otherwise, go to PG-103
		No		
		I don't know		
PG-102 Ask: MOH	How often is the National Medicines Policy revised? NOTE: For answers in between the choices, round up. For example, if updates are done every 2.5 years, select "3 or 4 years"	Every 2 years or more often		
		Every 3 or 4 years		
		Every 5 years		
		Less often than every 5 years		
		I don't know		
PG-103 Ask: MOH Warehouse Referral Hospital	Are there formally documented management policies or guidelines for the supply chain system? VERIFY WITH PG-402	Yes		If Yes, Continue; Otherwise, go to PG-105
		No		
		I don't know		
PG-104 Ask: MOH Warehouse Referral Hospital	Do supply chain policies or guidelines cover the following functions? PROBE: these may be policies issued by different institutions (e.g. financing may be issued by the Ministry of Finance) [MULTIPLE RESPONSES ALLOWED] VERIFY WITH PG-403	Waste management		
		Quality assurance		
		Storage		
		Procurement		
		Forecasting & Quantification		
		Supply Planning		
		Inventory Management		
		LMIS		
		Financing		
		Human Resources		
		None of the above		
		I don't know		
PG-105	Is there a formal, high-level body or committee that provides	Yes		If "Yes", continue;
		No		

Q#	QUESTIONS	RESPONSES		SKIPS
Ask: MOH Warehouse	oversight and governance for the supply chain? NOTE: This body might be a governing board, other governmental body, or oversight committee, and would be responsible for: driving forward the strategic direction for supply chain, setting government and/or business priorities for supply chain, ensuring performance of supply chain leadership, and managing risk and accountability in the supply chain	I don't know		Otherwise, go to next section PG-200
PG-106 Ask: MOH Warehouse	Who appoints the members of this supply chain oversight and governance body/committee? [MULTIPLE RESPONSES ALLOWED]	Central Government		
		Regional or Local Government bodies		
		Civil Society or Community groups		
		Donors		
		Owners/Shareholders (where this is a private sector entity)		
		Others. Please specify:		
		I don't know		
PG-107 Ask: MOH Warehouse	How often does the supply chain oversight and governance body/committee meet to discuss supply chain issues? NOTE: For answers in between the choices, round up. For example, if meetings are held every 9 months, select "Annually"	Quarterly or more often		
		Bi-annually (twice per year)		
		Annually		
		Less often than annually		
		I don't know		
PG-200: Standard Treatment Guidelines				
PG-201 Ask:	Are national standard treatment guidelines available at this	Yes		If "Yes", continue;
		No		

Q#	QUESTIONS	RESPONSES		SKIPS
MOH Warehouse Referral Hospital SDP	site/facility (in electronic or paper copy)? VERIFY WITH PG-404	I don't know		Otherwise, go to next section PG-300
PG-202 Ask: MOH	Are the standard treatment guidelines adapted from universal clinical guidelines, such as those put forth by the World Health Organization (WHO)?	Yes		
		No		
		I don't know		
PG-203 Ask: MOH	How often are standard treatment guidelines revised? NOTE: For answers in between the choices, round up. For example, if revisions are done every 15, 18 or 21 months, select "Every 2 years"	Annually or more often		
		Every 2 years		
		Every 3 years		
		Every 4 years or less often		
		Never		
		I don't know		
PG-300: Registration of New Products and Technologies				
PG-301 Ask: MOH	Is there a process for registering new drugs, products and technologies?	Yes		If "Yes", continue; Otherwise, go to next section PG-400
		No		
		I don't know		
PG-302 Ask: MOH	Approximately how long does it take to register a new drug on average?	up to 3 months		
		more than 3 months, up to 6 months		
		more than 6 months, up to 1 year		
		Over 1 year		
		I don't know		
PG-303 Ask: MOH	Does the organization in charge of drug registration make a list of registered products available to the public?	Yes		
		No		
		I don't know		
		No		
		I don't know		

	PG-400: PHYSICAL VERIFICATION: Please ask to see physical copies of the following documents, and verify the questions above			
Q#	**VERFICATION REQUIRED**	**RESPONSES**		**SKIPS**
PG-401	Verify existence of a National Medicines Policy that includes objectives for supply chain management [VERIFIES PG-101]	Physically verified		SKIP this question if PG-101 is "No" or "I don't know"
		Could Not be physically verified		
PG-402	Verify whether there are formally documented management policies or guidelines for the supply chain system [VERIFIES PG-103]	Physically verified		SKIP this question if PG-103 is "No" or "I don't know"
		Could Not be physically verified		
PG-403	Verify whether supply chain policies cover the following functions [VERIFIES PG-104]	Waste management		SKIP this question if PG-104 is "None of the above" or "I don't know"
		Quality Assurance		
		Storage		
		Procurement		
		Forecasting & Quantification		
		Supply Planning		
		Inventory Management		
		LMIS		
		Financing		
		Human Resources		
		None of the above		
PG-404	Verify existence of Standard treatment guidelines at this site/facility [VERIFIES PG-201]	Physically verified		SKIP this question if PG-201 is "No" or "I don't know"
		Could Not be physically verified		

ID4	Ending Time	End : [__|__] [__|__] am/pm Hour Minutes

Any notes about interview:

END OF MODULE 4 – Policy and Governance

MODULE 5:
QUALITY & PHARMACOVIGILANCE

CENTRAL/MOH LEVEL: For this module, interview the head of the pharmacy department and/or the national regulatory authority, if available. If not, interview the technical leads for quality assurance and pharmacovigilance at Ministry of Health and/or the national regulatory authority.

CENTRAL OR INTERMEDIATE WAREHOUSE: For this module, interview the head of quality assurance at the warehouse, if available. If not, interview the warehouse manager or another person knowledgeable about quality assurance at the warehouse.

REFERRAL HOSPITAL: For this module, interview the head of pharmacy at the hospital, if available. If not, interview the head of the storeroom or another person knowledgeable about quality assurance and pharmacovigilance at the hospital.

SERVICE DELIVERY POINTS: For this module, interview the head of pharmacy at the facility, if available. If not, interview the head of the facility, head of the storeroom, or another person knowledgeable about quality assurance and pharmacovigilance at the facility.

Q#	QUESTIONS	RESPONSES		SKIPS
QPV-100 Medicine Quality				
QPV-101 Ask: MOH	Is there a formally approved Product Quality Assurance strategy or policy? VERIFY WITH QPV-801	Yes		
		No		
		I don't know		
QPV-102 Ask: MOH	Are there a formally approved Product Quality Assurance guidelines or manual? VERIFY WITH QPV-802	Yes		If "Yes", continue; Otherwise, go to QPV-104
		No		
		I don't know		
QPV-103 Ask: MOH	How often is the Product Quality Assurance guidelines or manual updated? NOTE: For answers in between the choices, round up. For example, if updates are done every 15, 18 or 21 months, select "Every 2 years"	Annually or more often		
		Every 2 years		
		Every 3 years		
		Every 4 years or less often		
		Never		
		I don't know		
QPV-104 Ask: MOH Warehouse	Are Certificates of Analysis & Certificates of Conformance recorded for medicines received from international sources? NOTE: percentages are given as a guide; the exact percentage is not needed. VERIFY WITH QPV-803	All medicines (100%)		
		Most medicines (51-99%)		
		Some medicines (26-50%)		
		Minimal medicines (1-25%)		
		No medicines		
		I don't know		
QPV-105 Ask: MOH Warehouse	Are Certificates of Analysis & Certificates of Conformance recorded for medicines received from domestic sources? NOTE: percentages are given as a guide; the exact percentage is not needed. VERIFY WITH QPV-804	All medicines (100%)		
		Most medicines (51-99%)		
		Some medicines (26-50%)		
		Minimal medicines (1-25%)		
		No medicines		
		I don't know		
QPV-200 Laboratory Quality Control				
QPV-201		Yes		
		No		

Q#	QUESTIONS	RESPONSES		SKIPS
Ask: MOH Warehouse Referral Hospitals SDP	Are samples of received pharmaceutical products taken for quality control testing? VERIFY WITH QPV-805	I don't know		If "Yes", continue; Otherwise, go to next section QPV-300
QPV-202 Ask: MOH Warehouse	Where is quality control testing conducted? [MULTIPLE RESPONSES ALLOWED]	In-house Lab (e.g., belonging to MOH/government)		
		Outsourced Lab (i.e., private sector)		
		I don't know		
QPV-203 Ask: MOH Warehouse	Are all laboratories that conduct quality control testing accredited by a competent body, such as the World Health Organization (WHO)?	Yes		If "Yes" continue; Otherwise, go to QPV-205
		No		
		I don't know		
QPV-204 Ask: MOH Warehouse	How often is the laboratory that conducts quality control testing evaluated by the accrediting body in the previous question? NOTE: For answers in between the choices, round up. For example, if evaluations are done every 15, 18 or 21 months, select "Every 2 years"	Annually or more often		
		Every 2 years		
		Every 3 years		
		Every 4 years or less often		
		Never		
		I don't know		
QPV-205 Ask: MOH Warehouse	*How long does it usually take for quality assurance results to be shared by the lab after testing is complete?*	Up to one week		
		More than one week, up to two weeks		
		More than two weeks, up to a month		
		More than a month, up to 3 months		
		More than 3 months		

Q#	QUESTIONS	RESPONSES		SKIPS
		I don't know		
QPV-206 Ask: MOH Warehouse Referral Hospitals SDP	*If the product quality is compromised, as determined through the quality assurance process, is there a standard operating procedures (SOP) to quarantine and/or recall the product available at this site/facility (in electronic or paper copy)?* *VERIFY WITH QPV-806*	Yes		
		No		
		I don't know		
QPV-207 Ask: Warehouse Referral Hospitals SDP	*How often are quality control samples taken from your site*	Quarterly or more often		
		At least annually, but less than quarterly		
		Less than annually or never		
		I don't know		
QPV-300 Pharmacovigilance Strategy & Guidelines				
QPV-301 Ask: MOH	Is there a pharmacovigilance strategy/guideline in place?	Yes		If "Yes", continue; Otherwise, go to next section' QPV-400
		No		
		I don't know		
QPV-302 Ask: MOH	Is there a department/unit responsible for implementing the pharmacovigilance strategy/procedure?	Yes – Dedicated Staff		
		Yes – with part-time responsibility		
		No		
		I don't know		
QPV-400 Pharmacovigilance System				
QPV-401 Ask: Warehouse Referral Hospitals SDP	Are there data collection tools for pharmacovigilance? NOTE: Tools could be forms or registers that are paper or electronic VERIFY WITH QPV-807	Yes		If "Yes", continue; Otherwise, go to QPV-407
		No		
		I don't know		

Q#	QUESTIONS	RESPONSES		SKIPS
QPV-402 Ask: Referral Hospitals SDP	Are data collection tools for pharmacovigilance (e.g. reporting forms) available at this facility?	Yes		If "Yes", continue; Otherwise, go to QPV-407
		No		
		I don't know		
QPV-403 Ask: MOH	Are these tools shared with lower levels of the health system?	Yes		
		No		
		I don't know		
QPV-404 Ask: MOH	Is data routinely collected for pharmacovigilance?	Yes		
		No		
		I don't know		
QPV-405 Ask: Referral Hospitals SDP	Is collected data shared with central or higher-level authorities?	Yes		
		No		
		I don't know		
QPV-406 Ask: MOH	Is collected data shared with the international pharmacovigilance center?	Yes		
		No		
		I don't know		
QPV-407	Are there action protocols based on pharmacovigilance results?	Yes		
		No		

Q#	QUESTIONS	RESPONSES		SKIPS
Ask: MOH Referral Hospitals SDP		I don't know		If "Yes", continue; Otherwise, go to QPV-500
QPV-408 Ask: MOH Referral Hospitals SDP	In the event of an adverse drug reaction (ADR), what action protocols are implemented? NOTE: Freeze (an act of holding commodities at a fixed level/state with restrictions on issuance or sale) [MULTIPLE RESPONSES ALLOWED]	Freeze		
		Quarantine		
		Recall		
		Notify NRA		
		Halt Procurements		
		Stoppage of Issuance of Products		
		Others (Please Specify:)		
		None		
		I don't know		
QPV-500: Pharmacovigilance SOPs				
QPV-501 Ask: MOH Referral Hospitals SDP	Are there standard operating procedures (SOPs) for pharmacovigilance available at this site/facility (in electronic or paper copy)? NOTE: this may include SOPs for ADR receipt, or follow up on ADR complaints VERIFY WITH QPV-808	Yes		If "Yes", continue; Otherwise, go to next section QPV-600
		No		
		I don't know		
QPV-502 Ask: MOH	How often are SOPs for pharmacovigilance updated? NOTE: For answers in between the choices, round up. For example, if the timeframe is 15, 18 or 21 months, select "2 years"	Annually or more often		
		Every 2 years		
		Every 3 years		
		Every 4 years or less often		
		Never		
		I don't know		
QPV-600: Product or Medicines Quality Assurance SOPs				
QPV-601	Are there standard operating procedures for product quality	Yes		
		No		

Q#	QUESTIONS	RESPONSES		SKIPS
Ask: MOH Warehouse Referral Hospitals SDP	assurance/quality control available at this site/facility (in electronic or paper copy)? VERIFY WITH QPV-809	I don't know		If "Yes", continue; Otherwise, go to next section QPV-700
QPV-602 Ask: MOH Warehouse Referral Hospitals SDP	How often are standard operating procedures for product quality assurance/quality control updated? NOTE: For answers in between the choices, round up. For example, if updates are done every 15, 18 or 21 months, select "Every 2 years"	Annually or more often		
		Every 2 years		
		Every 3 years		
		Every 4 years or less often		
		Never		
		I don't know		
QPV-700: Quality Control & Pharmacovigilance Budgets				
QPV-701 Ask: MOH Warehouse Referral Hospitals	Who is responsible for funding the Quality Control & Pharmacovigilance budget? [MULTIPLE RESPONSES ALLOWED]	Government budget (central or decentralized level)		If "Government budget" or "facility revenue/cost recovery", continue; Otherwise, go to next section QPV-800
		Donor/Implementing Partners		
		Facility revenue/cost recovery		
		I don't know		
QPV-702 Ask: MOH Warehouse Referral Hospitals	How much is government budget or facility revenue/cost recovery contributing to recurring Quality Control & Pharmacovigilance costs? NOTE: percentages are given as a guide; the exact percentage is not needed.	Minimal (less than 25%)		
		Some (25-50%)		
		Most (51-99%)		
		All (100%)		
		I don't know		

QPV-800: PHYSICAL VERIFICATION: Please ask to see physical copies of the following documents, and verify the questions above				
Q#	**VERIFICATION REQUIRED**	**RESPONSES**		**SKIPS**
QPV-801	Verify existence of a formally approved Product Quality Assurance strategy or policy [VERIFIES QPV-101]	Physically verified		SKIP this question if QPV-101 is "No" or "I don't know"
		Could NOT physically verify		
QPV-802	Verify existence of a formally approved Product Quality Assurance guidelines or manual [VERIFIES QPV-102]	Physically verified		SKIP this question if QPV-102 is "No" or "I don't know"
		Could NOT physically verify		
QPV-803	Verify existence of Certificates of Analysis & Certificates of Conformance recorded for medicines received from international sources [VERIFIES QPV-104]	Physically verified		SKIP this question if QPV-104 is "No medicines" or "I don't know"
		Could NOT physically verify		
QPV-804	Verify existence of Certificates of Analysis & Certificates of Conformance recorded for medicines received from domestic sources [VERIFIES QPV-105]	Physically verified		SKIP this question if QPV-105 is "No medicines" or "I don't know"
		Could NOT physically verify		
QPV-805	Verify documentation that samples of received pharmaceutical products are taken for quality control testing [VERIFIES QPV-201]	Physically verified		SKIP this question if QPV-201 is "No" or "I don't know"
		Could NOT physically verify		
QPV-806	Verify existence at this site/facility of standard operating procedures (in electronic or paper copy) to quarantine and/or recall a product if the product quality is compromised, as determined through the QA process. [VERIFIES QPV-206]	Physically verified		SKIP this question if QPV-206 is "No" or "I don't know"
		Could NOT physically verify		
QPV-807	Verify existence of data collection tools for pharmacovigilance [VERIFIES QPV-401]	Physically verified		SKIP this question if QPV-401 is "No" or "I don't know"
		Could NOT physically verify		
QPV-808	Verify existence of standard operating procedures (SOPs) for pharmacovigilance at this site/facility (in electronic or paper copy) [VERIFIES QPV-501]	Physically verified		SKIP this question if QPV-501 is "No" or "I don't know"
		Could NOT physically verify		

QPV-809	Verify the existence of standard operating procedures for product quality assurance/quality control at this site/facility (in electronic or paper copy). [VERIFIES QPV-601]	Physically verified		SKIP this question if QPV-601 is "No" or "I don't know"
		Could NOT physically verify		

ID5	Ending Time	End : [__|__] [__|__] am/pm
		Hour Minutes

Any notes about interview:

END OF MODULE 5 – QUALITY & PHARMACOVIGILANCE

MODULE 6:
FORECASTING AND SUPPLY PLANNING

CENTRAL/MOH LEVEL: For this module, interview the lead technical expert for medicines forecasting and supply planning for the Ministry of Health, if available. If not, interview the head of the Ministry of Health supply chain department or another person knowledgeable about the national forecasting and supply planning processes.

CENTRAL OR INTERMEDIATE WAREHOUSE: For this module, interview the head of forecasting and supply planning at the warehouse, if available. If not, interview the warehouse manager or another person knowledgeable about the forecasting and supply planning processes at the warehouse.

REFERRAL HOSPITAL: For this module, interview the head of forecasting and supply planning at the hospital, if available. If not, interview the head of hospital procurement or another person knowledgeable about the forecasting and supply planning processes at the hospital.

SERVICE DELIVERY POINTS: Not Applicable.

Q#	QUESTIONS	RESPONSES		SKIPS
colspan over	**FSP-100 Forecasting Structure**			
FSP-101 Ask: MOH Warehouse Referral Hospitals	Does this facility forecast its health commodity requirements?	Yes		If "Yes" continue; Otherwise, go to FSP-600
		No		
		I don't know		
FSP-102 Ask: MOH	Is there a dedicated unit within the MOH responsible for forecasting and supply planning of health commodities?	Yes		
		No		
		I don't know		
FSP-103 Ask: MOH Warehouse Referral Hospitals	Who leads the forecasting process? NOTE: only one answer can be chosen for "leading" the process. The next question will ask who participates.	MOH forecasting and supply planning unit		
		Development partners		
		CMS (Central Medical Stores)		
		Vertical Programs		
		Consultants		
		Lower level/Local staff		
		Others. Please specify:		
		I don't know		
FSP-104 Ask: MOH Warehouse Referral Hospitals	Who is involved in the forecasting process? [MULTIPLE RESPONSES ALLOWED]	MOH forecasting and supply planning unit		
		Other MOH supply chain staff		
		Vertical programs representatives		
		CMS (Central Medical Stores)		
		Development partners		
		Consultants		
		Lower level warehouses/storeroom staff		
		Lower level Hospital/SDP staff		

Q#	QUESTIONS	RESPONSES		SKIPS
		Others. Please specify:		
		I don't know		
FSP-200: Forecasting Methodology				
FSP-201 Ask: MOH Warehouse Referral Hospitals	For how long into the future are forecasts developed? NOTE: For answers in between the choices, round up. For example, if forecasts are done for 15, 18 or 21 months, select "2 years"	1 year or less		
		2 years		
		3 years or more		
		I don't know		
FSP-202 Ask: MOH Warehouse Referral Hospitals	Are there set timelines or deadlines for when a national forecast is conducted?	Yes		
		No		
		I don't know		
FSP-203 Ask: MOH Warehouse Referral Hospitals	Which of the following methodologies is used during forecasting? [MULTIPLE RESPONSES POSSIBLE]	Morbidity based		
		Consumption-based		
		Demographic projections		
		Service Statistic-based		
		Others. Please specify:		
		None		
		I don't know		
FSP-204 Ask: MOH Warehouse Referral Hospitals	Are the MOST RECENT methodology, data sources, and assumptions, that were used in forecasting documented? VERIFY WITH FSP-1001	Yes, all are documented		
		No, at least one is not documented		
		I don't know		

Q#	QUESTIONS	RESPONSES		SKIPS
FSP-205 Ask: MOH Warehouse Referral Hospitals	Are forecasts used to mobilize funding from government and donor sources?	Yes		
		No		
		I don't know		
FSP-206 Ask: MOH Warehouse Referral Hospitals	Are forecasts used to inform health commodity procurement?	Yes		
		No		
		I don't know		
FSP-300: SOPs for Forecasting				
FSP-301 Ask: MOH Warehouse Referral Hospitals	Are there standard operating procedures (SOPs) or guidelines for forecasting available at this site/facility (in electronic or paper copy)? VERIFY WITH FSP-1002	Yes		If "Yes", continue; Otherwise, go to next section FSP-400
		No		
		I don't know		
FSP-302 Ask: MOH Warehouse Referral Hospitals	How often are SOPs for forecasting updated? NOTE: For answers in between the choices, round up. For example, if the timeframe is 15, 18 or 21 months, select "2 years"	Annually or more often		
		Every 2 years		
		Every 3 years		
		Every 4 years or less often		
		Never		
		I don't know		
FSP-400: Consumption Data				
FSP-401		Wastage		

Q#	QUESTIONS	RESPONSES		SKIPS
Ask: MOH Warehouse Referral Hospitals	Does the consumption data used for the forecast include the following information? [MULTIPLE RESPONSES POSSIBLE]	Adjusted consumption/missed demand (e.g., adjusting reported consumption for stock outs)		Skip this section if the response to FSP-203 did not include "consumption-based" FSP-500
		None of the above		
		I don't know		
FSP-402 Ask: MOH Warehouse Referral Hospitals	Is the quality of the consumption data assessed?	Yes		If "Yes" continue; Otherwise, go to FSP-404
		No		
		I don't know		
FSP-403 Ask: MOH Warehouse Referral Hospitals	When was the last assessment of consumption data quality?	Within past quarter		
		Within past year (but not the last quarter)		
		More than a year ago		
		I don't know		
FSP-404 Ask: MOH Warehouse Referral Hospitals	How recent was the consumption data that was used in the current forecast? NOTE: State how recent the consumption data at the time of the forecast was conducted. VERIFY WITH FSP-1003	less than 3 months old		
		3-6 months old		
		6-12 months old		
		older than 1 year		
		I don't know		
FSP-500: Forecast Accuracy				
FSP-501	Is forecast accuracy measured at least annually?	Yes		If "Yes", continue;
		No		

Q#	QUESTIONS	RESPONSES		SKIPS
Ask: MOH Warehouse Referral Hospitals	VERIFY WITH FSP-1004	I don't know		Otherwise, go to next section FSP-600
FSP-502 Ask: MOH Warehouse Referral Hospitals	Are there performance standards or benchmarks against which forecast accuracy is assessed?	Yes		
		No		
		I don't know		
FSP-503 Ask: MOH Warehouse Referral Hospitals	Are action plans generated based on forecast accuracy?	Yes		
		No		
		I don't know		
FSP-600: Supply Plan				
FSP-601 Ask: MOH Warehouse Referral Hospitals	Does this facility conduct supply planning for health commodity procurements? VERIFY WITH FSP-1005	Yes		If "Yes", continue; Otherwise, go to FSP-800
		No		
		I don't know		
FSP-602 Ask: MOH	How often is the supply plan monitored and updated? NOTE: For answers in between the choices, round up. For example, if updates are done every 2 days, select "weekly"	continuously or daily		
		weekly		
		monthly		
		quarterly		
		Bi-annually (twice per year)		

Q#	QUESTIONS	RESPONSES		SKIPS
Warehouse Referral Hospitals		annually		
		Less often than annually		
		I don't know		
FSP-603 Ask: MOH Warehouse Referral Hospitals	Is there a defined procedure for collecting the data for the supply plan? VERIFY WITH FSP-1006	Yes		
		No		
		I don't know		
FSP-604 Ask: MOH Warehouse Referral Hospitals	What data is used to inform the supply plan? [MULTIPLE RESPONSES POSSIBLE]	Forecast		
		Stock on hand		
		Consumption		
		Shipment status		
		Financial cycles		
		Lead times		
		Others. Please specify:		
		None		
		I don't know		
FSP-605 Ask: MOH Warehouse Referral Hospitals	Are data assumptions documented as part of the supply plan? VERIFY WITH FSP-1007	Yes		
		No		
		I don't know		
FSP-606 Ask: MOH Warehouse Referral Hospitals	Is the supply plan shared with external partners? NOTE: Examples of external partners might be donors, outsourced logistics providers, suppliers, health delivery personnel?	Yes, all external partners		
		Yes, some external partners		
		No		
		I don't know		

Q#	QUESTIONS	RESPONSES		SKIPS
FSP-700: Supply Chain Modification				
FSP-701 Ask: MOH Warehouse Referral Hospitals	Is there a formal procedure (e.g., SOP) for adjusting or updating the supply plan? VERIFY WITH FSP-1008	Yes		
		No		
		I don't know		
FSP-702 Ask: MOH Warehouse Referral Hospitals	Are potential supply interruptions/delays communicated to facilities to which you deliver products?	Yes		
		No		
		I don't know		
FSP-800: Hardware and Software Forecasting				
FSP-801 Ask: MOH Warehouse Referral Hospitals	Is the forecasting process computerized?	Yes		Skip this section if FSP-101 is "No" or "I don't know".. If "Yes", continue; Otherwise, go to next section FSP-900
		No		
		I don't know		
FSP-802 Ask: MOH Warehouse Referral Hospitals	Which software is used for forecasting?	Specialized forecasting software that uses machine learning or advanced algorithms to determine future need		
		Standardized health forecasting software (e.g., Pipeline, Quantimed, LabEquip, commercial sector solutions)		
		Excel or a general database program		

Q#	QUESTIONS	RESPONSES	SKIPS
		Other. Please specify:	
		None	
		I don't know	
FSP-900: Budget
FSP-901 Ask: MOH Warehouse Referral Hospitals	Who is responsible for funding the forecasting and supply planning budget, including personnel, tools, etc. [MULTIPLE RESPONSES ALLOWED]	Government budget (central or decentralized level)	Skip this section if FSP-101 AND FSP-601 are BOTH "No" or "I don't know", and go to next section. If "Government budget" or "facility revenue/cost recovery", continue; Otherwise, go to next section FSP-1000
		Donor/Implementing Partners	
		Facility revenue/cost recovery	
		I don't know	
FSP-902 Ask: MOH Warehouse Referral Hospitals	How much is the government contributing to recurring forecasting and supply planning costs? NOTE: Percentages are given as a guide; the exact percentage is not needed.	Minimal (less than 25%)	
		Some (25-50%)	
		Most (51-99%)	
		All (100%)	
		I don't know	

Q#	VERIFICATION REQUIRED	RESPONSES	SKIPS
FSP-1001	Verify that the methodology, data sources, and assumptions used in the MOST RECENT forecast are ALL documented [VERIFIES FSP-204]	Physically verified that ALL are documented	
		At least one could Not be physically verified	
FSP-1002	Verify existence of standard operating procedures (SOPs) or guidelines for forecasting at this site/facility (in electronic or paper copy) [VERIFIES FSP-301]	Physically verified	SKIP this question if FSP-301 is "No" or "I don't know"
		Could NOT physically verify	
		less than 3 months old	

FSP-1003	Verify how recent the consumption data is that was used in the current forecast (NOTE: Verify how recent the consumption data at the time of the forecast was conducted.) [VERIFIES FSP-404]	3-6 months old		SKIP this question if FSP-404 is "older than 1 year" or "I don't know"
		6-12 months old		
		Older than 1 year		
		Could NOT be physically verified		
FSP-1004	Verify that forecast accuracy has been measured within the last year [VERIFIES FSP-501]	Physically verified		SKIP this question if FSP-501 is "No" or "I don't know"
		Could NOT physically verify		
FSP-1005	Verify existence of a supply plan [VERIFIES FSP-601]	Physically verified		SKIP this question if FSP-601 is "No" or "I don't know"
		Could NOT physically verify		
FSP-1006	Verify existence of a procedure to collect data for the supply plan [VERIFIES FSP-603]	Physically verified		SKIP this question if FSP-603 is "No" or "I don't know"
		Could NOT physically verify		
FSP-1007	Verify whether data assumptions are documented as part of the supply plan [VERIFIES FSP-605]	Physically verified		SKIP this question if FSP-605 is "No" or "I don't know"
		Could NOT physically verify		
FSP-1008	Verify whether there is a formal procedure (e.g., SOP) for adjusting or updating the supply plan [VERIFIES FSP-701]	Physically verified		SKIP this question if FSP-701 is "No" or "I don't know"
		Could NOT physically verify		

| ID6 | Ending Time | End : [__|__]   [__|__] am/pm |
| | | Hour   Minutes |

| Any notes about interview: |
| |

END OF MODULE 6 – FORECASTING & SUPPLY PLANNING

MODULE 7:
PROCUREMENT

CENTRAL/MOH LEVEL: For this module, interview the head of the procurement department for the Ministry of Health, if available. If not, interview the deputy head of the procurement department or another person knowledgeable about national procurement and customs clearance processes.

CENTRAL OR INTERMEDIATE WAREHOUSE: For this module, interview the head of procurement at the warehouse, if available. If not, interview the warehouse manager or another person knowledgeable about procurement and customs clearance processes at the warehouse.

REFERRAL HOSPITAL: For this module, interview the head of procurement at the hospital, if available. If not, interview the head of the hospital or another person knowledgeable about the procurement processes at the hospital.

SERVICE DELIVERY POINTS: Not Applicable.

Q#	QUESTIONS	RESPONSES		SKIPS
PRO-100: Procurement Control				
PRO-101 Ask: MOH Warehouse Referral Hospitals	Does this location procure drugs/medical supplies from the private sector?	Yes		If "Yes" continue; Otherwise, go to next module WS Module
		No		
		I don't know		
PRO-102 Ask: MOH	Which entity(ies) are responsible for implementing health commodity procurements? NOTE: Procurement refers to acquisition of pharmaceutical products and medical supplies [MULTIPLE RESPONSES ALLOWED]	Central government		
		Decentralized government		
		Procurement parastatal		
		Outsourced to private sector		
		Outsourced to non-government organization		
		Development partners		
		No entity in place		
		I don't know		
PRO-103 Ask: MOH	Which entity is responsible for regulation and oversight of the overall procurement process? NOTE: Procurement refers to acquisition of pharmaceutical products and medical supplies [MULTIPLE RESPONSES ALLOWED]	Central government		
		Decentralized government		
		Procurement parastatal		
		Outsourced to private sector		
		Outsourced to non-government organization		
		Development partners		
		No entity in place		
		I don't know		
PRO-104		Yes		
		No		

Q#	QUESTIONS	RESPONSES		SKIPS
Ask: MOH Warehouse Referral Hospitals	Are procurements approved by authorized personnel/stakeholders? VERIFY WITH PRO-1401	I don't know		
PRO-105 Ask: MOH Warehouse Referral Hospitals	What internal control systems are in place for procurement? [MULTIPLE RESPONSES POSSIBLE]	Value thresholds (procurements of different values need different approval procedures)		
		Formally enforced order & approval protocols		
		Contracts Committee		
		Procurement & Adjudication committee/Tender committee		
		Contract management		
		Separation of roles		
		Legal Review		
		None of the above		
		I don't know		
PRO-106 Ask: MOH Warehouse Referral Hospitals	Is there a procurement ethics or anticorruption program in place?	Yes		
		No		
		I don't know		
PRO-200: Procurement Audits				
PRO-201 Ask: MOH Warehouse	How often do formal EXTERNAL audits of the procurement system take place? NOTE: For answers in between the choices, round up. For example, if the timeframe is 15,	Annually or more often		If "Never" or "I don't know", go to next section Otherwise, continue PRO-300
		Every 2 years		
		Every 3 years		
		Every 4 years or less often		
		Never		

Q#	QUESTIONS	RESPONSES		SKIPS
Referral Hospitals	18 or 21 months, select "2 years"	I don't know		
PRO-202 Ask: MOH Warehouse Referral Hospitals	Are procurement audit results used to develop a procurement action plan?	Yes		
		No		
		I don't know		
PRO-300: Procurement Procedures				
PRO-301 Ask: MOH	Are there policies and guidelines that specifically guide decentralized units - such as warehouses, hospitals and service delivery points - for purchase their own medicines from the private sector?	Yes		
		No		
		I don't know		
PRO-302 Ask: MOH Warehouse Referral Hospitals	Are there procedures in the form of guidelines, manuals or standard operating procedures (SOPs) for procurement available at this site/facility (in electronic or paper copy)? NOTE: this might include SOPs for receipt of bids, bid opening, and bid evaluations. VERIFY WITH PRO-1402	Yes		If "Yes", continue; Otherwise, go to next section PRO-400
		No		
		I don't know		
PRO-303 Ask: MOH Warehouse Referral Hospitals	How often are procurement guidelines, manuals or procedures (e.g., SOPs) updated? NOTE: For answers in between the choices, round up. For example, if updates are done every 15, 18 or 21 months, select "Every 2 years"	Annually or more often		
		Every 2 years		
		Every 3 years		
		Every 4 years or less often		
		Never		
		I don't know		

Q#	QUESTIONS	RESPONSES		SKIPS
PRO-400: Product Specifications				
PRO-401 Ask: MOH Warehouse Referral Hospitals	During sourcing and procurement (prequalification or bidding), is reference made to the following? [MULTIPLE RESPONSES ALLOWED]	National treatment guidelines		
		Essential medicines list		
		Medical and Lab supplies list		
		User department specifications		
		Forecasts		
		None of the above		
		I don't know		
PRO-500: Identifying and Qualifying Vendors				
PRO-501 Ask: MOH Warehouse Referral Hospitals	Is there a documented process in place for identifying and qualifying vendors? VERIFY WITH PRO-1403	Yes		
		No		
		I don't know		
PRO-502 Ask: MOH Warehouse Referral Hospitals	Is there an approved vendor list?	Yes		
		No		
		I don't know		
PRO-503 Ask: MOH Warehouse Referral Hospitals	Is vendor information maintained in a database (can be electronic or paper based)? VERIFY WITH PRO-1404	Yes		

Q#	QUESTIONS	RESPONSES		SKIPS
		No		
		I don't know		
PRO-504 Ask: MOH Warehouse Referral Hospitals	Do you provide potential vendors and/or the public access to current, up-to-date information about procurement processes, procedures and policies?	Yes		
		No		
		I don't know		
PRO-505 Ask: MOH Warehouse Referral Hospitals	Do you maintain a procurement website accessible to external stakeholders? VERIFY WITH PRO-1405	Yes		If "YES" continue; Otherwise, go to PRO-507
		No		
		I don't know		
PRO-506 Ask: MOH Warehouse Referral Hospitals	Which information does this procurement website make available? [MULTIPLE RESPONSES ALLOWED] VERIFY WITH PRO-1406	Current bid opportunities		
		Bid results		
		Current contracts		
		Solicitation schedules		
		None of the above		
		I don't know		
PRO-507 Ask: MOH Warehouse	Where is the master information on upcoming and completed procurements maintained ? [PROMPT IF NECESSARY]	Enterprise Resource Planning program (ERP)		
		Procurement Software		
		Other electronic file directory (e.g., Excel)		
		Manual/paper based		
		Not centrally filed		

Q#	QUESTIONS	RESPONSES		SKIPS
Referral Hospitals	[MULTIPLE RESPONSES ALLOWED]	I don't know		
PRO-508 Ask: MOH Warehouse Referral Hospitals	Is detailed feedback provided to vendors and other stakeholders after the qualification process is completed? VERIFY WITH PRO-1407	Yes		Skip this question if PRO-501 is "No" or "I don't know" PRO-601
		No		
		I don't know		
PRO-600: Fair Competition & Cost Effectiveness				
PRO-601 Ask: MOH Warehouse Referral Hospitals	Do the tenders include terms and conditions? VERIFY WITH PRO-1408	Yes		
		No		
		I don't know		
PRO-602 Ask: MOH Warehouse Referral Hospitals	What percentage of procurements require vendor competition for tenders? NOTE: percentages are given as a guide; the exact percentage is not needed.	All (100%)		If "All", go to PRO-604; Otherwise, continue PRO-604
		Most (51-99%)		
		Some (25-50%)		
		Minimally (less than 25% of the time)		
		None		
		I don't know		
PRO-603		Yes		
		No		

- 73 -

Q#	QUESTIONS	RESPONSES		SKIPS
Ask: MOH Warehouse Referral Hospitals	If a tender is not competed, do you document these exceptions?	I don't know		
PRO-604 Ask: MOH Warehouse Referral Hospitals	Which measures do tender evaluations include? [PROMPT BY READING CHOICES] [MULTIPLE RESPONSES ALLOWED]	Price		Skip this question if PRO-602 is "None" PRO-604
		Quality		
		Service		
		Past performance		
		Lead time		
		Other. Please specify:		
		None of the above		
		I don't know		
PRO-605 Ask: MOH Warehouse Referral Hospitals	Are there formal processes in place to maintain vendors' proprietary information as confidential?	Yes		
		No		
		I don't know		
PRO-606		Yes		
		No		

Q#	QUESTIONS	RESPONSES		SKIPS
Ask: MOH Warehouse Referral Hospitals	Are formal notifications sent to both successful AND unsuccessful bidders? NOTE: Both successful and unsuccessful bidders must be notified in order to score "Yes'. VERIFY WITH PRO-1409	I don't know		
PRO-607 Ask: MOH Warehouse Referral Hospitals	Does this location benchmark or compare its purchase prices against market indices?	Yes		
		No		
		I don't know		
PRO-700: Vendor Performance Evaluation				
PRO-701 Ask: MOH Warehouse Referral Hospitals	Is there a system with documented criteria and processes in place to evaluate vendor performance?	Yes		If "Yes", continue; Otherwise, go to next section PRO-800
		No		
		I don't know		
PRO-702 Ask:	When assessing vendor performance, which of the following criteria are used?	Timeliness		
		In full delivery		
		Value for Money		

Q#	QUESTIONS	RESPONSES		SKIPS
MOH Warehouse Referral Hospitals	[PROMPT BY READING CHOICES] [MULTIPLE RESPONSES ALLOWED]	Quality		
		Responsiveness		
		Others. Please specify:		
		I don't know		
PRO-703 Ask: MOH Warehouse Referral Hospitals	Are the vendor performance results communicated to the vendors?	Yes		
		No		
		I don't know		
PRO-800: Procurement Appeals Process				
PRO-801 Ask: MOH Warehouse Referral Hospitals	Is there a formal, documented procurement appeals process? VERIFY WITH PRO-1410	Yes		If "Yes", continue; Otherwise, go to next section PRO-900
		No		
		I don't know		
PRO-802 Ask: MOH Warehouse Referral Hospitals	How long does the appeals process take to complete?	up to 6 months		
		more than 6 months, up to 12 months		
		more than 12 months		
		I don't know		
PRO-803		Yes		
		No		

Q#	QUESTIONS	RESPONSES		SKIPS
Ask: MOH Warehouse Referral Hospitals	Are procurement appeal decisions made publically available?	I don't know		
PRO-900: Order and Delivery Management Processes				
PRO-901 Ask: MOH Warehouse Referral Hospitals	Is there a contract management or an order and delivery management system in place?	Yes		If "Yes", continue. Otherwise, go to PRO-903
		No		
		I don't know		
PRO-902 Ask: MOH Warehouse Referral Hospitals	Is the data in the contract management system updated in real time or daily?	Yes		
		No		
		I don't know		
PRO-903 Ask: MOH Warehouse Referral Hospitals	Are there penalties for vendors that do not fulfill contracts?	Yes		
		No		
		I don't know		
PRO-904 Ask:	Is insurance coverage provided for products in transit?	Yes (for all of them)		
		Yes (for some of them)		
		No		

Q#	QUESTIONS	RESPONSES		SKIPS
MOH Warehouse Referral Hospitals	PROMPT: Do the INCO terms used require insurance for products in transit be purchased/provided by either the seller or the buyer ? VERIFY WITH PRO-1411	I don't know		
PRO-1000: Procurement KPIs				
PRO-1001 Ask: MOH Warehouse Referral Hospitals	Are procurement metrics used to measure procurement performance?	Yes		
		No		
		I don't know		
PRO-1100: Customs Clearance				
PRO-1101 Ask: MOH Warehouse	Does this unit/warehouse play a role in customs clearance?	Yes		If "Yes", continue. Otherwise, skip to next section PRO-1200
		No		
		I don't know		
PRO-1102 Ask: MOH Warehouse	Is there a procedure that guides customs clearance specifically for health commodities?	Yes		
		No		
		I don't know		
PRO-1103 Ask: MOH Warehouse	Is there an entity responsible for coordinating the customs clearance process for health commodities?	Yes		
		No		
		I don't know		
PRO-1104 Ask:	Are relevant parties notified in advance of expected shipment arrival?	All the time (100%)		
		Most of the time (51-99%)		
		Sometimes (25-50%)		

Q#	QUESTIONS	RESPONSES		SKIPS
MOH Warehouse	NOTE: percentages are given as a guide; the exact percentage is not needed.	Minimally (less than 25% of the time)		
		I don't know		
PRO-1105 Ask: MOH	Are all health commodity imports under full exemption of customs duties and taxes?	Yes		If "Yes", continue; Otherwise, go to PRO-1107
		No		
		I don't know		
PRO-1106 Ask: MOH	Is there a formal procedure in place to obtain the exemptions?	Yes		
		No		
		I don't know		
PRO-1107 Ask: MOH Warehouse	Is customs clearance done in-house or outsourced?	In-house only		If "In-house only" or "I don't know", go to PRO-1109 ; Otherwise, continue
		Outsourced only		
		Both In-house and Outsourced		
		I don't know		
PRO-1108 Ask: MOH Warehouse	Is there an approved contract for customs clearance services?	Yes		
		No		
		I don't know		
PRO-1109 Ask: MOH Warehouse	How long does removal of products typically take from the airport when that is the port of entry?	1 day		
		2 days		
		3 days to 1 week		
		more than 1 week, up to 2 weeks		
		more than two weeks		
		I don't know		
PRO-1110 Ask: MOH	How long does removal of products typically take from the port of entry when the port of entry is not the airport (e.g., via sea or road)?	1 day		
		2 days		
		3 days to 1 week		
		more than 1 week, up to 2 weeks		

Q#	QUESTIONS	RESPONSES		SKIPS
Warehouse		more than two weeks		
		I don't know		
PRO-1111 Ask: MOH Warehouse	Is the customs clearance process monitored using standardized metrics?	Yes		
		No		
		I don't know		
PRO-1200: Budget				
PRO-1201 Ask: MOH Warehouse Referral Hospitals	Who is responsible for funding the budgets associated with procurement processes and/or customs clearance for program related commodities? NOTE: This should NOT include the cost of commodities themselves, just the costs for the procurement process and customs clearing process, duties and fees. [MULTIPLE RESPONSES ALLOWED]	Government budget (central or decentralized level)		If "Government budget" or "facility revenue/cost recovery", continue; Otherwise, go to next section PRO-1300
		Donor/Implementing Partners		
		Facility revenue/cost recovery		
		I don't know		
PRO-1202 Ask: MOH Warehouse Referral Hospitals	How much is government budget or facility revenue/cost recovery contributing to recurring procurement processes and/or customs clearance costs? NOTE: percentages are given as a guide; the exact percentage is not needed.	Minimal (less than 25%)		
		Some (25-50%)		
		Most (51-99%)		
		All (100%)		
		I don't know		
PRO-1300: Computerization				
PRO-1301		Yes		If "Yes", continue;
		No		

Q#	QUESTIONS	RESPONSES		SKIPS
Ask: MOH Warehouse Referral Hospitals	Do you use an electronic procurement (e-procurement) process? NOTE: E-procurement is the electronic purchase and sale of goods and services through an Internet-based or other electronic platform. It is designed to improve transparency and efficiency in the procurement process.	I don't know		Otherwise, go to next section PRO-1400
PRO-1302 Ask: MOH Warehouse Referral Hospitals	Are there staff trained on the use of e-procurement?	Yes		
		No		
		I don't know		

PRO-1400: PHYSICAL VERIFICATION:			
Please ask to see physical copies of the following documents, and verify the questions above			
Q#	VERIFICATION REQUIRED	RESPONSES	SKIPS
PRO-1401	Verify whether procurements are approved by authorized personnel/stakeholders. For example, review the Procurement manual/regulations or procurement documentation. [VERIFIES PRO-104]	Physically verified	SKIP this question if PRO-104 is "No" or "I don't know"
		Could Not be physically verified	
PRO-1402	Verify existence of guidelines, manuals or standard operating procedures (SOPs) for procurement at this site/facility (in electronic or paper copy) [VERIFIES PRO-302]	Physically verified	SKIP this question if PRO-302 is "No" or "I don't know"
		Could Not be physically verified	
PRO-1403	Verify from prequalification documents that there is a documented process in place for identifying and qualifying vendors [VERIFIES PRO-501]	Physically verified	SKIP this question if PRO-501 is "No" or "I don't know"
		Could Not be physically verified	
PRO-1404	VERIFY existence of a database for vendor information (paper or electronic) [VERIFIES PRO-503]	Physically verified	SKIP this question if PRO-503 is "No" or "I don't know"

		Could NOT physically verify		
PRO-1405	VERIFY existence of a procurement website accessible to external stakeholders [VERIFIES PRO-505]	Physically verified		SKIP this question if PRO-505 is "No" or "I don't know"
		Could Not be physically verified		
PRO-1406	VERIFY whether the procurement website has the following information [VERIFIES PRO-506]	Current bid opportunities		SKIP this question if PRO-506 is "None of the above" or "I don't know"
		Bid results		
		Current contracts		
		Solicitation schedules		
		None of the above		
PRO-1407	VERIFY if detailed feedback is provided to vendors and other stakeholders after the qualification process is completed [VERIFIES PRO-508]	Physically verified		SKIP this question if PRO-508 is "No" or "I don't know"
		Could NOT physically verify		
PRO-1408	Verify if tenders include terms and conditions, with a copy of a tender document [VERIFIES PRO-601]	Physically verified		SKIP this question if PRO-601 is "No" or "I don't know"
		Could NOT physically verify		
PRO-1409	Verify from documented communication that formal notifications are sent to both successful AND unsuccessful bidders [VERIFIES PRO-606]	Could NOT physically verify		SKIP this question if PRO-606 is "No" or "I don't know"
		Physically verified		
PRO-1410	Verify that a formal procurement appeals process is appropriately documented [VERIFIES PRO-801]	Could NOT physically verify		SKIP this question if PRO-801 is "No" or "I don't know"
		Physically verified		
PRO-1411	Verify whether insurance coverage is provided for products in transit. For example, request for copies of insurance certificates or verify that INCO terms requires the seller to insure products in transit. [VERIFIES PRO-904]	Could NOT physically verify		SKIP this question if PRO-904 is "No" or "I don't know"
		Physically verified		

ID7	Ending Time	End : [__|__] [__|__] am/pm
		Hour Minutes

Any notes about interview:

END OF MODULE 7 –   PROCUREMENT

MODULE 8:
WAREHOUSING & STORAGE

CENTRAL/MOH LEVEL: For this module, interview the head of the Ministry of Health department that is responsible for the overall management of the supply chain nationally, if available. If not, interview the deputy head or another person knowledgeable national warehousing policies and processes.
Note: For this module, you will be expected to verify documents during the interview. This is the only module where verification will be done during the interview, as opposed to at the end of the module.

CENTRAL OR INTERMEDIATE WAREHOUSE: For this module, interview the warehouse manager, if available. If not, interview deputy warehouse manager or another person knowledgeable about general warehouse operations.
Note: For this module, you will be expected to go into the warehouse and verify information during the interview. This is the only module where verification will be done during the interview, as opposed to at the end of the module.

REFERRAL HOSPITAL: For this module, interview the storeroom manager if available. If not, interview the deputy storeroom manager or another person knowledgeable about general storage operations.
Note: For this module, you will be expected to go to the storeroom(s) and verify information during the interview. This is the only module where verification will be done during the interview, as opposed to at the end of the module.

SERVICE DELIVERY POINTS: For this module, interview the storeroom manager if available. If not, interview a storeroom clerk or another person knowledgeable about general storage operations.
Note: For this module, you will be expected to go to the storeroom(s) and verify information during the interview. This is the only module where verification will be done during the interview, as opposed to at the end of the module.

Q#	QUESTIONS	RESPONSES		SKIPS
WS-100: Warehousing Standard Operating Procedures
WS-101 Ask: MOH Warehouse Referral Hospitals SDP	Are there standard operating procedures (SOPs) for Warehousing & Storage available at this site/facility (in electronic or paper copy)? NOTE: For example, SOPs for order picking & verification, order processing, order dispatch & loading VERIFY DOCUMENT AVAILABLE	Yes		If "Yes, Physically Verified" or "Yes, but NOT Physically Verified:, continue; Otherwise, go to next section WS-200
		Physically Verified		
		Yes, but NOT Physically Verified		
		No		
		I don't know		
WS-102 Ask: MOH Warehouse Referral Hospitals SDP	How often are standard operating procedures for Warehousing & Storage updated? NOTE: For answers in between the choices, round up. For example, if updates are done every 15, 18 or 21 months, select "Every 2 years"	Annually or more often		
		Every 2 years		
		Every 3 years		
		Every 4 years or less often		
		Never		
		I don't know		
WS-200: Commodity Receipt
WS-201 Ask: Warehouse Referral Hospitals SDP	Which of the following checks are made for inbound shipments (shipments received)? [MULTIPLE ANSWERS ALLOWED]	Quantity (number of units)		If "They are not checked" or "I don't know", go to WS-203; Otherwise, continue
		Shelf-life remaining		
		Quality (beyond external packaging, e.g. sampling for pharmaceutical quality testing)		
		Carton count/pallet count		
		Documentation		

Q#	QUESTIONS	RESPONSES		SKIPS
		Correct currency and pricing		
		None of the above are checked		
		I don't know		
WS-202 Ask: Warehouse Referral Hospitals SDP	What actions do you take when there is a discrepancy in the commodities received? [MULTIPLE RESPONSES ALLOWED]	Notify the warehouse/supplier that issued the product		
		Reject the products		
		Fill in a discrepancy form		
		Re- order		
		Quarantine the products		
		None of the above		
		I don't know		
WS-203 Ask: Referral Hospitals SDP	Do you receive a distribution schedule in advance from the Issuing Warehouse or Supplier?	Yes		
		No		
		I don't know		
WS-204 Ask: Referral Hospitals SDP	Do you maintain proof of delivery (POD) records for product received? If so, in what format?	Yes, Paper copies		If "Yes", continue; Otherwise, go to WS-206
		Yes, Electronic copies (e.g., PDFs, digital photos)		
		Yes, Via an automated system (e.g., barcoding scans to computerized system)		
		No		
		I don't know		
WS-205		up to 3 months		

Q#	QUESTIONS	RESPONSES		SKIPS
Ask: Referral Hospitals SDP	If PODs are maintained, how long are they kept?	more than 3 months, up to 6 months		
		more then 6 months, up to 12 months		
		more than 12 months		
WS-206 Ask: Referral Hospitals SDP	What are the challenges faced by this facility related to last mile delivery (at receipt of commodities)? [MULTIPLE RESPONSES ALLOWED]	Late deliveries		
		Uncommunicated deliveries		
		Uncertainty of when deliveries will arrive		
		Damaged commodities		
		Partial deliveries		
		Excess commodities		
		Delivery of near expiry commodities		
		Others (Please Specify:)		
		None		
		I don't know		
WS-300: Warehouse Design & Layout				
WS-301 Ask: Warehouse	Does the store meet the following minimum acceptable design, layout and construction requirements for storage of pharmaceutical products? [MULTIPLE RESPONSES ALLOWED] OBSERVE & PHYSICALLY VERIFY. RECORD ONLY WHAT IS VERIFIED	Permanent and leak-free roofing		
		Insulated and leak-free ceiling		
		Adequate ventilation		
		Smooth and non-porous floor		
		Bulk storage area		
		Designated quarantine area		
		Receiving and dispatch storage areas		
		Cold chain storage		

Q#	QUESTIONS	RESPONSES		SKIPS
		Designated area for storage of hazardous substances		
		Designated area for storage of controlled substance		
		Office area		
		Products stored on pallets, away from walls (i.e. products not stored on the floor or against the walls)		
		None of the above		
WS-302 Ask: Referral Hopsitals SDP	Does the store meet the following minimum acceptable design, layout and construction requirements for storage of pharmaceutical products? [MULTIPLE RESPONSES ALLOWED] OBSERVE & PHYSICALLY VERIFY. RECORD ONLY WHAT IS VERIFIED	Permanent and leak-free roofing		
		Insulated and leak-free ceiling		
		Adequate ventilation		
		Smooth and non-porous floor		
		Designated quarantine area		
		Cold chain storage		
		Designated area for storage of hazardous substances		
		Designated area for storage of controlled substance		
		None of the above		
WS-303 Ask: Warehouse	Are the following in place for the Quarantine area? OBSERVE & PHYSICALLY VERIFY. RECORD ONLY WHAT IS VERIFIED	Access restricted to authorized personnel (E.g., locks on doors/cabinets)		Skip this question if WS-301 or WS-302 did not include "Designated Quarantine area"
		Appropriate signage/labels indicating quarantine area		

Q#	QUESTIONS	RESPONSES		SKIPS
Referral Hopsitals SDP		Segregation of different batches of quarantined product		
		None		
WS-304 Ask: Warehouse	Do receiving and dispatch storage areas have separate docks? OBSERVE & PHYSICALLY VERIFY. RECORD ONLY WHAT IS VERIFIED	Yes		Skip this question if WS-301 did not include "Receiving and dispatch storage areas"
		No		
		I don't know		
WS-400: Warehouse Utilities				
WS-401 Ask: Warehouse Referral Hospitals SDP	Which of the following utilities are in place in the warehouse / stores area? [MULTIPLE RESPONSES ALLOWED]	Electric Lighting		If "Electric Lighting" continue; Otherwise, go to next section WS-500
		Telephone		
		None of the above		
		I don't know		
WS-402 Ask: Warehouse Referral Hospitals SDP	How do you ensure consistent electric power at this facility? [MULTIPLE RESPONSES ALLOWED]	Generator		
		Invertors		
		Solar Power		
		Others. Please specify:		
		No backup available		
		I don't know		
WS-500: Warehouse Equipment				
WS-501		Shelves		

Q#	QUESTIONS	RESPONSES		SKIPS
Ask: Wareho use	Is the following material handling equipment available? [MULTIPLE RESPONSES ALLOWED] OBSERVE & PHYSICALLY VERIFY. RECORD ONLY WHAT IS VERIFIED	Cabinets		
		Pallets		
		Hand truck		
		Trollies or carts		
		Pallet truck or pallet jack		
		Pallet racks		
		Fork lifts		
		Automatic systems (robotic)		
		None of the above		
WS-502 **Ask:** Referral Hospital s	Is the following material handling equipment available? [MULTIPLE RESPONSES ALLOWED] OBSERVE & PHYSICALLY VERIFY. RECORD ONLY WHAT IS VERIFIED	Shelves		
		Cabinets		
		Pallets		
		Trollies or carts		
		Hand truck		
		Pallet truck or pallet jack		
		Pallet racks		
		Fork lifts		
		None of the above		
WS-503 **Ask:** SDP	Is the following material handling equipment available? [MULTIPLE RESPONSES ALLOWED] OBSERVE & PHYSICALLY VERIFY. RECORD ONLY WHAT IS VERIFIED	Shelves		
		Cabinets		
		Trollies or carts		
		Hand truck		
		None of the above		
WS-600: Repair & Maintenance Programs				
WS-601 **Ask:** MOH	Is there a repair and maintenance plan in place for all equipment and utilities? VERIFY DOCUMENT AVAILABLE	**Yes**		
		Physically Verified		
		Yes, but NOT Physically Verified		
		No		

Q#	QUESTIONS	RESPONSES		SKIPS
Warehouse Referral Hospitals SDP		I don't know		
WS-602 <u>Ask:</u> Warehouse Referral Hospitals SDP	Are there equipment maintenance logs? VERIFY DOCUMENT AVAILABLE	Yes, Physically Verified		
		Yes, but NOT Physically Verified		
		No		
		I don't know		
WS-700: Safety & Security				
WS-701 <u>Ask:</u> Warehouse Referral Hospitals SDP	What safety equipment is available in this facility today? [MULTIPLE RESPONSES ALLOWED] OBSERVE & PHYSICALLY VERIFY. RECORD ONLY WHAT IS VERIFIED	Sprinkler system		If "Fire extinguishers" continue; Otherwise, go to WS-704
		Fire extinguishers		
		Heat, flame or smoke detectors		
		Heavy duty Gloves		
		Spill kits (these contain absorbent pads, acid/base neutralizers, goggles etc.)		
		Masks		
		Lab coats		
		Reflectors		
		Helmets		
		Safety boots		

Q#	QUESTIONS	RESPONSES		SKIPS
		Safety knives		
		Others. Please specify:		
		None of the above		
		I don't know		
WS-702 Ask: Warehouse Referral Hospitals SDP	How long ago were the fire exinguishers inspected/serviced? VERIFY INSPECTION LABEL. RECORD ONLY WHAT IS VERIFIED.	Inspection label (tag) is within one year		
		Inspection is older than 1 year		
		No inspection tag		
		I don't know		
WS-703 Ask: Warehouse Referral Hospitals SDP	Are operators trained in the safe use of the material handling AND firefighting equipment?	Yes		
		No		
		I don't know		
WS-704 Ask: Referral Hospitals SDP	What security measures are in place and currently operational? [MULTIPLE ANSWERS POSSIBLE] OBSERVE & PHYSICALLY VERIFY. RECORD ONLY WHAT IS VERIFIED	Controlled access (e.g., limited access to keys)		
		Locks on main doors		
		Locks on product cabinets		
		Burglar bars		
		Staff ID cards		

Q#	QUESTIONS	RESPONSES		SKIPS
		Control of vehicles entering premises		
		Record of all people entering and exiting the storeroom		
		Security guards		
		Alarm (local to facility)		
		Alarm (connected to police)		
		CCTV recordings kept on file		
		Biometric control of entry to the storeroom		
		None of the above		
		I don't know		
WS-705 Ask: Warehouse	What security measures are in place and currently operational? [MULTIPLE ANSWERS POSSIBLE] OBSERVE & PHYSICALLY VERIFY. RECORD ONLY WHAT IS VERIFIED	Controlled access (e.g., limited access to keys)		
		Locks on main doors		
		Locks on product cabinets		
		Burglar bars		
		Staff ID cards		
		Control of vehicles entering premises		
		Record of all people entering and exiting the warehouse		
		Security guards		
		Alarm (local to facility)		
		Alarm (connected to police)		
		CCTV recordings kept on file		
		Biometric control of entry to the storage areas		
		None of the above		
		I don't know		

Q#	QUESTIONS	RESPONSES		SKIPS
WS-800: Picking and Shipping Operations
WS-801 Ask: MOH	What is the national policy / SOP / etc. for determining which stock for a given item to issue first? [READ CHOICES – MULTIPLE RESPONSES ALLOWED] REQUEST A COPY OF THE POLICY AND VERIFY. RECORD ONLY WHAT IS VERIFIED	FEFO (First Expiry First Out)		
		FIFO principles (First in, first out) implemented for products without expiration dates or products with the same expiration dates		
		Neither of these were verified		
WS-802 Ask: Warehouse Referral Hospitals SDP	How do you determine which stock for a given item to issue out first? [DO NOT READ RESPONSE OPTIONS] NOTE: Have the respondent explain how they determine which stock to issue first, then the interviewer should score appropriately based on whether the answer incorporated FEFO and/or FIFO principles	FEFO (First Expiry First Out) requirements adhered to		
		FIFO principles (First in, first out) implemented for products without expiration dates or products with the same expiration dates		
		Neither of these		
		I don't know		
WS-803 Ask: Warehouse	What aspects do you check for during dispatch of outbound orders?	Quantity		
		Quality		
		Documentation		
		Not checked		
		I don't know		
WS-804 Ask: Warehouse	Which of the following measures are in place to ensure commodity loss prevention? [MULTIPLE RESPONSES ALLOWED]	Shipping Package is weighed before shipping and confirmed at receipt		
		Shipping package is wrapped and securely sealed		
		Physical Verification (Double checking) of picked quantities		

Q#	QUESTIONS	RESPONSES		SKIPS
		Issuance of authorization to take out goods		
		Others. Please specify:		
		No measures in place		
		I don't know		
WS-805 Ask: Warehouse	How are shipments and orders confirmed between the sender and receiver? [MULTIPLE RESPONSES ALLOWED]	Confirmation is provided manually via telephone		
		Confirmation is provided manually through paper documentation		
		Confirmation is provided manually via email		
		Confirmation is electronically through PDAs/mobile phones		
		Confirmation is automatically sent from the WMS (Warehouse Management System)		
		They are not confirmed		
		I don't know		
WS-806 Ask: Warehouse	Is the delivery process traceable? [MULTIPLE RESPONSES ALLOWED]	Yes - Manual tracking of orders with established delivery dates		
		Yes - Inbound/outbound visibility available electronically, such as in the WMS (Warehouse Management System), with established delivery dates		
		No		
		I don't know		

Q#	QUESTIONS	RESPONSES		SKIPS
WS-807 Ask: Wareho use	Is delivery confirmation documented? VERIFY DOCUMENT AVAILABLE	Yes, Physically Verified		
		Yes, but NOT Physically Verified		
		No		
		I don't know		
WS-808 Ask: Wareho use	Are picking and shipping operations monitored using standardized metrics?	Yes		
		No		
		I don't know		
WS-900: Environmental Monitoring and Control				
WS-901 Ask: Wareho use Referral Hospital s SDP	Is the warehouse room temperature recorded on the appropriate log or register and up to date? NOTE: Up to date means updated within the last 2 days VERIFY EXISTENCE OF THE REGISTER AND WHETHER UP TO DATE	Yes, register Physically Verified and up to date (within last 2 days)		
		Register Physically Verified but NOT up to date		
		Yes, but register NOT Physically Verified		
		No register		
		I don't know		
WS-902 Ask: Wareho use Referral Hospital s SDP	Are the warehouse humidity levels recorded on the appropriate log or register and up to date? NOTE: Up to date means updated within the last 2 days VERIFY EXISTENCE OF THE REGISTER AND WHETHER UP TO DATE	Yes, register Physically Verified and up to date (within last 2 days)		
		Register Physically Verified but NOT up to date		
		Yes, but register NOT Physically Verified		
		No register		
		I don't know		
WS-903 Ask:	Which of the following temperature control systems do you have in place? [MULTIPLE RESPONSES ALLOWED]	Heating system		
		Cooling/Air Conditioning system		

Q#	QUESTIONS	RESPONSES		SKIPS
Warehouse Referral Hospitals SDP		Neither of the above		
		I don't know		
WS-1000: Product Organization				
WS-1001 Ask: Warehouse	In case of stock overflow, where does the excess stock go? [MULTIPLE RESPONSES ALLOWED]	Hallways		
		Supplier's Warehouse		
		Partner's Warehouse		
		Another facility's store		
		Secondary Storage-Space Outside the Store		
		Staff Offices		
		Pushed Out Immediately Down Supply Chain		
		Rent Out Extra Space		
		Other (Please Specify:)		
		No overflow stock		
		I don't know		
WS-1002 Ask: Warehouse	Which of the following does the Warehouse Management System (WMS) capture? [MULTIPLE RESPONSES ALLOWED]	Volume of items		
		Weight of items		
		Pallet sizes/numbers		
		Carton sizes/numbers		
		Unit price/Value of product		
		None of the above are captured by WMS system		
		No WMS in place		
		I don't know		
WS-1100: Cold Chain Management				

Q#	QUESTIONS	RESPONSES		SKIPS
WS-1101 Ask: Warehouse Referral Hospitals SDP	Which cold chain infrastructure is available at this facility? [PROMPT AND CHECK ALL THAT APPLY] [MULTIPLE RESPONSES ALLOWED] OBSERVE & PHYSICALLY VERIFY. RECORD ONLY WHAT IS VERIFIED	Free-standing refrigerator		If "None" or "I don't know, go to WS-1106; Otherwise, continue
		Extra cold coolers for potential overflow		
		Cold rooms		
		Others. Please specify:		
		None		
		I don't know		
WS-1102 Ask: Warehouse Referral Hospitals SDP	Is cold chain equipment maintained according to schedule? VERIFY MAINTENANCE RECORDS	Yes, Physically Verified		
		Yes, but NOT Physically Verified		
		No		
		I don't know		
WS-1103 Ask: Warehouse Referral Hospitals SDP	How is temperature monitored in the cold chain storage areas? [MULTIPLE RESPONSES ALLOWED]	Temperature is monitored using digital/bulb thermometers		
		Temperature is monitored electronically using automatic devices e.g., electronic temperature loggers		
		Temperature is electronically monitored and linked to audible alarms when temperature is outside established range		

Q#	QUESTIONS	RESPONSES		SKIPS
		Temperature is electronically monitored and sends alarms directly to management on or off-site when temperature is outside established range		
		None of the above		
		I don't know		
WS-1104 Ask: Warehouse Referral Hospitals SDP	Which of the following contingency plans are in place to maintain the cold chain in the event of a power or equipment failure?	Generators		
		Other secondary/tertiary power source, e.g., inverters		
		Standby cold chain trucks		
		Outsourced cold chain system		
		None of the above		
		I don't know		
WS-1105 Ask: Warehouse	Is there a person who is responsible for monitoring the temperature of cold chain infrastructure?	Yes		
		No		
		I don't know		
WS-1106 Ask: Warehouse	How are cold chain requirements monitored from manufacturer to service delivery point? NOTE: if multiple methods are used, choose the most common method. [MULTIPLE RESPONSES ALLOWED]	Color changing markers		
		Temperature monitoring devices		
		Electronic temperature tracking devices WITHOUT remote temperature monitoring		

Q#	QUESTIONS	RESPONSES		SKIPS
		Electronic temperature tracking devices with remote temperature monitoring		
		Others. Please specify:		
		They are not monitored		
		I don't know		
WS-1200: Controlled Substances & High Value Products			
WS-1201 Ask: Warehouse Referral Hospitals SDP	Is a lockable cage or cabinet in place for storing controlled and high-value products? NOTE: Product examples include diazepam, morphine, pethidine etc. OBSERVE & PHYSICALLY VERIFY. RECORD ONLY WHAT IS VERIFIED	Yes		If "Yes", continue; Otherwise, go to WS-1203
		No		
		I don't know		
WS-1202 Ask: Warehouse Referral Hospitals SDP	Is access to controlled and high-value products limited to designated personnel? NOTE: Example, limited access to keys or combination. OBSERVE & PHYSICALLY VERIFY. RECORD ONLY WHAT IS VERIFIED	Yes		
		No		
		I don't know		
WS-1203 Ask:	Are SOPs for handling controlled substances and high value products available at this site/facility (in electronic or paper copy)? VERIFY DOCUMENT AVAILABLE	Yes, Physically Verified		
		Yes, but NOT Physically Verified		
		No		

Q#	QUESTIONS	RESPONSES		SKIPS
Warehouse Referral Hospitals SDP		I don't know		
WS-1204 Ask: Warehouse Referral Hospitals SDP	How are receipts and issues of controlled substances and high-value commodities tracked?	Manual register or ledger		
		Electronic register (e.g., excel)		
		Automated system (e.g., barcode scanning to computerized system)		
		They are not tracked		
WS-1300: Inventory Management				
WS-1301 Ask: Warehouse Referral Hospitals SDP	What tools do you use to track and manage inventory? [MULTIPLE RESPONSES ALLOWED] OBSERVE & PHYSICALLY VERIFY. RECORD ONLY WHAT IS VERIFIED	Manual e.g. stock cards		
		Electronic e.g. excel sheets		
		Advanced tool Warehouse Management System (WMS)		
		None of the above		
		I don't know		

Q#	QUESTIONS	RESPONSES		SKIPS
WS-1302 Ask: Warehouse Referral Hospitals SDP	Do products have assigned locations on shelves? VERIFY DOCUMENTS, INFORMATION SYSTEM, OR LABELING ON SHELVES AS APPROPRIATE	Yes, Physically Verified		
		Yes, but NOT Physically Verified		
		No		
		I don't know		
WS-1303 Ask: Warehouse Referral Hospitals SDP	Is there a single register that is used to monitor and track expiration dates for all products? NOTE: This is can be a paper register or automated register, such as LMIS or WMS VERIFY DOCUMENT AVAILABLE	Yes, Physically Verified		
		Yes, but NOT Physically Verified		
		No		
		I don't know		
WS-1304 Ask: Warehouse Referral Hospitals	How do you calculate re-ordering quantities? NOTE: if multiple methods are used, select the most common method	Min/max process		
		Economic Quantity Reordering (EQR)		
		Other software based process		
		Order same quantity as past consumption		

Q#	QUESTIONS	RESPONSES		SKIPS
SDP		Intuition		
		Not done		
		I don't know		
WS-1305 Ask: Warehouse Referral Hospitals SDP	Does your inventory management system include buffer stock/security stock? NOTE: Buffer stock is reserve stock that reduces the probability of stockout if deliveries are delayed or consumption is higher than expected.	Yes. Please specify how many months of buffer/security stock. No		
		No		
		I don't know		
WS-1306 Ask: Warehouse Referral Hospitals SDP	Does your inventory management system include min-max set points?	Yes, for all or most products		
		Yes, for some or a few products		
		No		
		I don't know		
WS-1307 Ask:	Is warehousing and storage data and information backed-up off site? NOTE: These could be paper or electronic back-up files.	Yes		
		No		

Q#	QUESTIONS	RESPONSES		SKIPS
Warehouse Referral Hospitals SDP		I don't know		
WS-1308 Ask: Warehouse Referral Hospitals SDP	Do you have a computerized inventory management system? OBSERVE & PHYSICALLY VERIFY. RECORD ONLY WHAT IS VERIFIED	Yes, specialized software		
		Yes, spreadsheet (Excel) based or similar		
		No		
		I don't know		
WS-1400: Warehouse Audits				
WS-1401 Ask: Warehouse Referral Hospitals SDP	Which of the following audits are performed annually or more often? REQUEST DOCUMENTATION TO VERIFY. RECORD ONLY WHAT IS VERIFIED	Internal		
		External		
		Both Internal & External		
		None		
		I don't know		
WS-1500: Warehouse Licensing				
WS-1501 Ask: Warehouse	Is the warehouse licensed for the storage of pharmaceutical products by the National Regulatory Authority or other competent body? VERIFY EXISTENCE OF THE LICENSE	Yes, Physically Verified		
		Yes, but NOT Physically Verified		
		No		
		I don't know		
WS-1600: Warehouse Performance				

Q#	QUESTIONS	RESPONSES		SKIPS
WS-1601 Ask: MOH Warehouse	Which of the following indicators are regularly measured and tracked at the warehouse? [MULTIPLE RESPONSES POSSIBLE] REQUEST DOCUMENTATION TO VERIFY. RECORD ONLY WHAT IS VERIFIED	Stocked according to plan (the percentage of commodities between the established minimum and maximum stock levels)		
		Stock out rates (the percentage of commodities that experienced a stockout during a defined period)		
		Stock accuracy (comparison between the stock quantity on a stock card and/or in an inventory management software with the quantity counted in a physical inventory)		
		Order fill rate (comparison between the quantity in accepted orders to the quantity delivered)		
		Stock turn per annum (the number of times the warehouse issues and replaces its inventory during the period under review)		

Q#	QUESTIONS	RESPONSES		SKIPS
		Cost of warehousing operations (cost of the operation of the warehouse, which may be expressed as a percentage of the total value of the commodities managed by the warehouse)		
		Wastage from damage (measurement of the total value or quantity of stock that was lost due to damage during a defined period)		
		Wastage from theft (measurement of the total value or quantity of stock that was lost to theft during a defined period)		
		Wastage from expiry (measurement of the total value or quantity of stock that was lost to expiry during a defined period)		
		Order turnaround time (the time taken by the warehouse to fulfill orders from lower level hospitals, hospitals or SDPs)		

Q#	QUESTIONS	RESPONSES		SKIPS
		Number or duration of temperature excursions (the number of days in which there was a temperature excursion or percentage of time that the cold storage facility was not at the required temperature)		
		Percentage of in-coming batches tested for quality (the percentage of product batches received from suppliers and tested by a quality assurance laboratory)		
		None of the above		
		Others. Please specify:		
		I don't know		
WS-1602 Ask: Referral Hospitals SDP	Which of the following indicators are regularly measured and tracked for the storeroom? [MULTIPLE RESPONSES POSSIBLE] REQUEST DOCUMENTATION TO VERIFY. RECORD ONLY WHAT IS VERIFIED	Stocked according to plan (the percentage of commodities between the established minimum and maximum stock levels)		
		Stock out rates (the percentage of commodities that experienced a stockout during a defined period)		

Q#	QUESTIONS	RESPONSES		SKIPS
		Stock accuracy (comparison between the stock quantity on a stock card and/or in an inventory management software with the quantity counted in a physical inventory)		
		Order fill rate (comparison between the quantity in accepted orders to the quantity delivered)		
		Wastage from damage (measurement of the total value or quantity of stock that was lost due to damage during a defined period)		
		Wastage from theft (measurement of the total value or quantity of stock that was lost to theft during a defined period)		
		Wastage from expiry (measurement of the total value or quantity of stock that was lost to expiry during a defined period)		
		Order turnaround time (the time taken by the warehouse to fulfill orders from lower level hospitals, hospitals or SDPs)		
Q#	**QUESTIONS**			

Q#	QUESTIONS	RESPONSES		SKIPS
		Number or duration of temperature excursions (the number of days in which there was a temperature excursion or percentage of time that the cold storage facility was not at the required temperature)		
		None of the above		
		Others. Please specify:		
		I don't know		
WS-1700: Budgets				
WS-1701 Ask: MOH Warehouse Referral Hospitals SDP	Who is responsible for funding the budgets associated with warehousing & storage? NOTE: Such as personnel, equipment, operating costs, etc. [MULTIPLE RESPONSES ALLOWED]	Government budget (central or decentralized level)		If "Government budget" or "facility revenue/cost recovery", continue; Otherwise, go to next section DIS-101
		Donor/Implementing Partners		
		Facility revenue/cost recovery		
		I don't know		
WS-1702 Ask:	How much is government budget or facility revenue/cost recovery contributing to recurring warehousing & storage costs?	Minimal (less than 25%)		
		Some (25-50%)		
		Most (51-99%)		
		All (100%)		

Q#	QUESTIONS	RESPONSES		SKIPS
MOH Warehouse Referral Hospitals SDP	NOTE: percentages are given as a guide; the exact percentage is not needed.	I don't know		

ID8	Ending Time	End : [__|__] [__|__] am/pm Hour Minutes

Any notes about interview:

MODULE 9:
DISTRIBUTION

CENTRAL/MOH LEVEL: For this module, interview the lead technical expert for medicines distribution for the Ministry of Health, if available. If not, interview the head of the Ministry of Health supply chain department or another person knowledgeable about national distribution processes.

CENTRAL OR INTERMEDIATE WAREHOUSE: For this module, interview the head of distribution at the warehouse, if available. If not, interview the warehouse manager or another person knowledgeable about the distribution processes at the warehouse.

REFERRAL HOSPITAL: Not Applicable.

SERVICE DELIVERY POINTS: Not Applicable.

Q#	QUESTIONS	RESPONSES		Skips & observations
DIS-100: Distribution planning				
DIS-101 Ask: MOH Warehouse	Is there an approved distribution plan? NOTE: A distribution plan defines when products will be delivered to different clients. VERIFY WITH DIS-1001	Yes		
		No		
		I don't know		
DIS-102 Ask: Warehouse	Do you have a data management system that captures distribution plans and operations? VERIFY WITH DIS-1002	Yes		
		No		
		I don't know		
DIS-103 Ask: Warehouse	Are the distribution schedules included in the communication to health facilities?	Yes		
		No		
		I don't know		
DIS-104 Ask: Warehouse	Are distribution routes pre-planned? NOTE: Pre-planned distribution routes specify the specific order that clients will be visited in, and which roads will be utilized. VERIFY WITH DIS-1004	Yes		If "Yes", continue; Otherwise go to DIS-107
		No		
		I don't know		
DIS-105 Ask: Warehouse	How often are the distribution routes reviewed? NOTE: For answers in between the choices, round up. For example, if updates are done every 15, 18 or 21 months, select "Every 2 years" VERIFY WITH DIS-1005	Bi-annually (twice per year) or more often		
		Annually		
		Every 2 years		
		Every 3 years or less often		
		I don't know		
DIS-106 Ask: Warehouse	Which of the following do routing plans take into consideration? [MULTIPLE RESPONSES ALLOWED]	Truck capacity		
		Product volumes (or number of pallets)		
		Weights of individual products		

Q#	QUESTIONS	RESPONSES		Skips & observations
	VERIFY WITH DIS-1006	Geographic location		
		None of the above		
		I don't know		
DIS-107 Ask: MOH Warehouse	Are products from different programs and partners distributed in an integrated manner, to the extent that product requirements allow? Or is it segregated per program or by implementing partner? NOTE: Integration doesn't mean ALL products must be distributed on the same truck; certain product may have special characteristics (e.g., cold chain requirement, high value, short expiry date) that necessitate different treatment for distribution.	Distribution is done in an integrated manner wherever product characteristics allow.		
		Most programs or partners integrate distribution.		
		Most or all programs/partners conduct separate, vertical distribution.		
		I don't know		
DIS-200: Distribution and transportation policies and procedures				
DIS-201 Ask: MOH Warehouse	Are there polices that cover distribution and transportation of commodities? VERIFY WITH DIS-1007	Yes		If "Yes", continue; Otherwise, go to next section DIS-300
		No		
		I don't know		
DIS-202 Ask: MOH Warehouse	Do the policies and procedures that cover distribution and transportation include the following aspects about commodities?	Transportation of cold chain commodities		
		Transportation of expired commodities		
		Security		
		Storage conditions during transport		
		Documentation		
		Re-distribution		
		Reverse logistics		
		I don't know		
DIS-203 Ask: MOH	Do the policies and procedures that cover distribution and transportation include the following aspects about fleet management?	Repair & preventative maintenance		
		driver briefing and debriefing		
		driver logs		

Q#	QUESTIONS	RESPONSES		Skips & observations
Warehouse		system to track vehicle status (in/out) with their expected return date		
		Vehicle schedules for future deployments		
		Accidents & emergencies		
		GPS tracking		
		I don't know		
DIS-300: Distribution Budget				
DIS-301 Ask: MOH Warehouse	Who is responsible for funding the distribution budget? [MULTIPLE RESPONSES ALLOWED]	Government budget (central or decentralized level)		If "Government budget" or "facility revenue/cost recovery", continue, Otherwise, go to next section DIS-400
		Donor/Implementing Partners		
		Facility revenue/cost recovery		
		I don't know		
DIS-302 Ask: MOH Warehouse	How much is government budget or facility revenue/cost recovery contributing to recurring distribution costs? NOTE: percentages are given as a guide; the exact percentage is not needed.	Minimal (less than 25%)		
		Some (25-50%)		
		Most (51-99%)		
		All (100%)		
		I don't know		
DIS-303 Ask: MOH Warehouse	Are there SOPs or documented procedures in place for accessing funds for distribution?	Yes		
		No		
		I don't know		
DIS-400: Transportation				
DIS-401 Ask: MOH Warehouse	What mechanism does this entity use to transport commodities? [MULTIPLE RESPONSES ALLOWED] NOTE: Outsourced transportation services refers to hiring a private company to transport the commodities, whereas Rented Vehicles refers to temporary hire of vehicles (e.g., trucks) only.	Own fleet		If "Outsourced transportation services", continue; Otherwise, go to DIS-403
		Rented vehicles (operated by this facility)		
		Outsourced transportation services		
		I don't know		

Q#	QUESTIONS	RESPONSES		Skips & observations
DIS-402 Ask: MOH Warehouse	How often did this entity use outsourced transportation services for the transport of commodities in the last 12 months? NOTE: Denominator should be overall number of trips for commodity delivery or pickup in the year Numerator should be number of times transport services were outsourced to achieve commodity delivery or pickup in the year	Less than one third		
		One third to two thirds		
		More than two thirds		
		I don't know		
DIS-403 Ask: MOH Warehouse	Are there documented procedures (such as SOPs) for managing transportation assets available at this site/facility (in electronic or paper copy)? [MULTIPLE RESPONSES ALLOWED] PROBE: by reading response options. VERIFY WITH DIS-1008	Yes, for Own fleet		
		Yes, for Outsourced fleet		
		No		
		I don't know		
DIS-404 Ask: MOH Warehouse	Are there systems in place for capturing and maintaining transportation data? NOTE: Examples include distance travelled, fuel consumption VERIFY WITH DIS-1009	Manual systems		If "No" or "I don't know", go to DIS-407; Otherwise, continue
		Electronic system		
		No		
		I don't know		
DIS-405 Ask: MOH Warehouse	How often is transportation data captured? NOTE: For answers in between the choices, round up. For example, if meetings are held every two months, select "Quarterly"	Daily or real time		
		Weekly or Monthly		
		Quarterly		
		Less frequently than quarterly		
		I don't know		
DIS-406	Are there systems in place to capture timely and accurate data	Yes		Skip this question if DIS-

Q#	QUESTIONS	RESPONSES		Skips & observations
<u>Ask:</u> MOH Warehouse	from commercial providers (for outsourced transportation services)? VERIFY WITH DIS-1010	No		401 did not include "Outsourced transportation services" DIS-407
		I don't know		
DIS-407 <u>Ask:</u> MOH Warehouse	Are transportation-related KPIs monitored? NOTE: Examples include running cost per km, vehicle availability, vehicle utilization, Fuel utilization in km/Liter, fleet idle days, number of days vehicle spends at workshop, percentage needs satisfaction etc. VERIFY WITH DIS-1011	Yes		
		No		
		I don't know		
DIS-500: Distribution costing				
DIS -501 <u>Ask:</u> MOH Warehouse	Do you collect distribution cost data? VERIFY WITH DIS-1012	Yes		If "Yes", continue; Otherwise, go to next section DIS-600
		No		
		I don't know		
DIS -502 <u>Ask:</u> MOH Warehouse	What information is included in distribution cost data? [MULTIPLE RESPONSES ALLOWED] VERIFY WITH DIS-1013	Asset depreciation		
		Human resources		
		Maintenance		
		Transportation outsourcing or vehicle rental		
		Per diems		
		Fuel		
		None of the above		
		I don't know		
DIS -503 <u>Ask:</u> MOH Warehouse	What system is used to monitor distribution cost?	An Excel, Access (or equivalent) based system		
		A TMS (transport management system)		
		Other electronic systems		
		Manual systems		
		None		

Q#	QUESTIONS	RESPONSES		Skips & observations
		I don't know		
DIS -504 Ask: MOH Warehouse	Is total cost data used to minimize operating costs?	Yes		
		No		
		I don't know		
DIS -505 Ask: MOH Warehouse	Have specific interventions been made for the purpose of reducing transport operating costs? NOTE: Examples include making routes efficient (bundling sites in the same region), distributing different product groups together, conducting preventative maintenance of vehicles, outsourcing transportation. VERIFY WITH DIS-1014	Yes		
		No		
		I don't know		
DIS -506 Ask: MOH Warehouse	Is the total cost of using your own fleet versus outsourced transportation services calculated and reviewed at least annually?	Yes		
		No		
		I don't know		
DIS-600: Distribution of Specialized Products				
DIS-601 Ask: Warehouse	Is there infrastructure for cold-chain transportation? E.g., refrigerated trucks, cooler boxes for transport. VERIFY WITH DIS-1015	Yes		If "Yes", continue; Otherwise, go to DIS-603
		No		
		I don't know		
DIS-602 Ask: Warehouse	How are cold chain commodities transported? [MULTIPLE RESPONSES ALLOWED]	In cooler boxes		
		In refrigerated trucks		
		In regular transportation (no temp control)		
		None of the above		
		I don't know		
DIS-603 Ask: Warehouse	Are temperature monitoring devices used to track temperature excursions during transportation?	Yes		
		No		
		I don't know		

Q#	QUESTIONS	RESPONSES		Skips & observations
DIS-604 Ask: MOH Warehouse	At what points are temperatures recorded during transportation of cold chain commodities? [MULTIPLE RESPONSES ALLOWED]	At departure		
		In transit		
		At arrival		
		None of the above		
		I don't know		
DIS-700: Distribution security				
DIS-701 Ask: MOH Warehouse	What security management measures are in place for distribution activities? [MULTIPLE RESPONSES POSSIBLE]	RFID tags		
		Video surveillance/monitoring		
		GPS Monitoring		
		2-way radio access		
		Integrated audit procedures at front and back ends of delivery		
		Bar code scanning		
		Performing unannounced inspections		
		Partnerships developed with local police security forces		
		Security guards		
		None of the above		
		I don't know		
DIS-702 Ask: MOH Warehouse	Are there documented security requirements for truck and personnel?	Yes		
		No		
		I don't know		
DIS-703 Ask: MOH Warehouse	Is there a process to record loss incidents?	Yes		
		No		
		I don't know		

Q#	QUESTIONS	RESPONSES		Skips & observations
DIS-800: Product Tracking				
DIS-801 Ask: Warehouse	How are outbound shipments tracked? [MULTIPLE RESPONSES ALLOWED]	Manual tracking		
		Through electronic tracking		
		Not tracked		
		I don't know		
DIS-802 Ask: Warehouse	In every step as commodities move through the supply chain, what methods are used to document who has 'ownership' of the commodities? (What procedures are in place to track ownership throughout the chain of custody?) NOTE: Chain of custody is the unbroken path a product takes during distribution from the first stage in the chain to the end, showing custody at each stage. [MULTIPLE RESPONSES ALLOWED]	Manual tracking		
		Transportation Management System (TMS) with shipment tracking		
		A fully automated TMS deployed throughout the distribution chain and integrated into the WMS (Warehouse Management System)		
		None		
		I Don't know		
DIS-803 Ask: MOH Warehouse	Do you maintain proof of delivery (POD) records for outbound (delivered) products? NOTE: Outbound stock: refers to stock moving out of the district pharmacy / warehouse VERIFY WITH DIS-1016	Yes, manually		
		Yes, electronically, with manual entry or document scanning		
		Yes, electronically, via an automated process (e.g. barcoding)		
		No		
		I don't know		
DIS-804 Ask: MOH Warehouse	Are quantities of outbound stock (deliveries) reconciled with proof of delivery? VERIFY WITH DIS-1017	Yes No I don't know		
DIS-900: Distribution MIS				
DIS-901	Is distribution planning and monitoring computerized?	Yes		If "Yes", continue;
		No		

Q#	QUESTIONS	RESPONSES		Skips & observations
Ask: MOH Warehouse		I don't know		Otherwise, go to next section DIS-1000
DIS-902 Ask: MOH Warehouse	What software is used for distribution planning and monitoring?	Excel/Access based system		
		TMS (Transport Management System)		
		electronic LMIS		
		None		
		I don't know		

DIS-1000: PHYSICAL VERIFICATION: Please ask to see physical copies of the following documents, and verify the questions above				
Q#	VERIFICATION REQUIRED	RESPONSES		SKIPS
DIS-1001	Verify the existence of an approved distribution plan [VERIFIES DIS-101]	Physically verified		SKIP this question if DIS-101 is "No" or "I don't know"
		Could NOT physically verify		
DIS-1002	Verify the existence of a data management system that captures distribution plans and operations [VERIFIES DIS-102]	Physically verified		SKIP this question if DIS-102 is "No" or "I don't know"
		Could NOT physically verify		
DIS-1003	Verify from copies of communication to health facilities whether distribution schedules are included [VERIFIES DIS-103]	Physically verified		SKIP this question if DIS-103 is "No" or "I don't know"
		Could NOT physically verify		
DIS-1004	Verify from documented evidence that distribution routes are pre-planned [VERIFIES DIS-104]	Physically verified		SKIP this question if DIS-104 is "No" or "I don't know"
		Could NOT physically verify		
DIS-1005	Verify how often distribution routes are reviewed. E.g. from minutes of distribution meetings, dates on latest route plans [VERIFIES DIS-105]	Bi-annually (twice per year) or more often		SKIP this question if DIS-105 is "Every 3 years or less often" or "I don't know"
		Annually		
		Every 2 years		
		Every 3 years or less often		
		Could not be Physically Verified		

DIS-1006	Verify whether the routing plans take the following into consideration [VERIFIES DIS-106]	Truck capacity		SKIP this question if DIS-106 is "None of the above" or "I don't know"
		Product volumes (or number of pallets)		
		Weights of individual products		
		Geographic Location		
		None of the above		
DIS-1007	Verify existence of policies that cover distribution and transportation of commodities [VERIFIES DIS-201]	Physically verified		SKIP this question if DIS-201 is "No" or "I don't know"
		Could NOT physically verify		
DIS-1008	Verify the existence of procedures for managing transportation assets at this site/facility (in electronic or paper copy) [VERIFIES DIS-403]	Physically verified for Own fleet		SKIP this question if DIS-403 is "No" or "I don't know"
		Physically verified for outsourced fleet		
		Could NOT be physically verified		
DIS-1009	Verify that the organization captures and maintains transportation data (such as Distance travelled or fuel consumption) and whether this is captured via manual or electronic systems [VERIFIES DIS-404]	Physically verified for Manual systems		SKIP this question if DIS-404 is "No" or "I don't know"
		Physically verified for electronic system		
		Could Not be physically verified		
DIS-1010	Verify that timely and accurate data is captured from commercial providers (for outsourced transportation services) [VERIFIES DIS-406]	Physically verified		SKIP this question if DIS-406 is "No" or "I don't know"
		Could NOT physically verify		
DIS-1011	Verify from documented evidence whether transportation-related KPIs are monitored. Examples include running cost per km, vehicle availability, vehicle utilization, Fuel utilization in km/Liter, fleet idle days, number of days vehicle spends at workshop, percentage needs satisfaction etc. [VERIFIES DIS-407]	Physically verified		SKIP this question if DIS-407 is "No" or "I don't know"
		Could NOT physically verify		
DIS-1012	Verify from documented evidence that distribution cost data is collected [VERIFIES DIS-501]	Physically verified		SKIP this question if DIS-501 is "No" or "I don't know"
		Could NOT physically verify		
DIS-1013	Verify which of the following information is included in the distribution cost data [VERIFIES DIS-502]	Asset depreciation		SKIP this question if DIS-502 is "None of the above" or "I don't know"
		Human resources		
		Maintenance		
		Transportation outsourcing or vehicle rental		
		Per Diems		
		Fuel		
		None of the above		

DIS-1014	Verify from documented evidence that specific interventions have been made for the purpose of reducing transport operating costs [VERIFIES DIS-505]	Physically verified		SKIP this question if DIS-505 is "No" or "I don't know"
		Could NOT physically verify		
DIS-1015	Verify existence of infrastructure for cold chain transportation [VERIFIES DIS-601]	Physically verified		SKIP this question if DIS-601 is "No" or "I don't know"
		Could NOT physically verify		
DIS-1016	Verify how proof of delivery (POD) records are maintained [VERIFIES DIS-803]	Manually		SKIP this question if DIS-803 is "No" or "I don't know"
		Electronically with manual entry or document scanning		
		Electronically via an automated process (e.g., barcoding)		
		Could Not be physically verified		
DIS-1017	Verify whether quantities of outbound stock (deliveries) are reconciled with proof of delivery. For example, verify with reconciliation reports [VERIFIES DIS-804]	Physically verified		SKIP this question if DIS-804 is "No" or "I don't know"
		Could NOT physically verify		

ID9	Ending Time	End : [__|__] [__|__] am/pm
		Hour Minutes

Any notes about interview:

END OF MODULE 9 –   DISTRIBUTION

MODULE 10:
LOGISTICS MANAGEMENT INFORMATION SYSTEM

CENTRAL/MOH LEVEL: For this module, interview the lead technical expert for LMIS at the Ministry of Health, if available. If not, interview the head of the Ministry of Health supply chain department, information systems department, or another person knowledgeable about the national LMIS system.

CENTRAL OR INTERMEDIATE WAREHOUSE: For this module, interview the head of LMIS at the warehouse, if available. If not, interview the warehouse manager or another person knowledgeable about the LMIS processes at the warehouse.

REFERRAL HOSPITAL: For this module, interview the storeroom manager if available. If not, interview the deputy storeroom manager, data/information systems manager, or another person knowledgeable about the LMIS processes at the hospital.

SERVICE DELIVERY POINTS: For this module, interview the storeroom manager if available. If not, interview the deputy storeroom manager, data entry person, or another person knowledgeable about the LMIS processes at the facility.

Q#	QUESTIONS	RESPONSES		SKIPS
LM-100: LMIS Policies and guidelines				
LM-101 Ask: MOH Warehouse Referral Hospital SDP	Which type of Logistics Management Information System (LMIS) tools are used?	Paper based LMIS only		If "No" or "I don't know", go to LM-400; Otherwise, continue
		Electronic LMIS (eLMIS) only		
		Both Paper based LMIS & electronic LMIS		
		None		
		I don't know		
LM-102 Ask: MOH Warehouse	Are there policies in place that guide the paper LMIS? VERIFY WITH LM-701	Yes		Skip this question if LM-101 is "electronic LMIS Only" or "I don't know"
		No		
		I don't know		
LM-103 Ask: MOH Warehouse	Are there policies in place that guide the electronic LMIS (eLMIS)? VERIFY WITH LM-702	Yes		Skip this question if LM-101 is "Paper based LMIS Only" or "I don't know"
		No		
		I don't know		
LM-104 Ask: MOH Warehouse	Are the LMIS tools standardized across the supply chain - across geographic regions, health programs and health system levels?	Yes		
		No		
		I don't know		
LM-105 Ask: MOH Warehouse	Is the reporting frequency harmonized across the supply chain - across geographic regions and health programs and health system levels?	Yes		
		No		
		I don't know		
LM-106 Ask:	Which program areas, sometimes called "vertical	HIV		
		TB		
		Family Planning		

Q#	QUESTIONS	RESPONSES		SKIPS
MOH Warehouse	programs", have the same reporting cycles? [MULTIPLE RESPONSES ALLOWED]	Malaria		
		Maternal and Child Health		
		Vaccines		
		Essential Medicines		
		Medical Supplies		
		Other (Please Specify:)		
		None		
		I don't know		
LM-107 Ask: MOH Warehouse Referral Hospitals SDP	What is the reporting frequency for paper LMIS data? NOTE: For answers in between the choices, round up. For example, if reports are submitted every 2 weeks, select "monthly". NOTE: If different LMIS reports have different frequencies, report the most common frequency for consumption and stock on hand data.	Daily		Skip this question if LM-101 is "electronic LMIS Only" or "I don't know"
		Weekly		
		Monthly		
		Quarterly		
		Less than quarterly		
		No reporting		
		I don't know		
LM-108 Ask: MOH Warehouse Referral Hospitals SDP	What is the reporting frequency for electronic LMIS data? NOTE: For answers in between the choices, round up. For example, if reports are submitted every 2 weeks, select "monthly". NOTE: If different LMIS reports have different frequencies, report the most common frequency for consumption and stock on hand data.	Real time/Daily		
		Weekly		
		Monthly		
		Quarterly		
		Less than quarterly		
		No reporting		
		I don't know		
LM-109	Is there a standard process, such as scheduled, regular	Yes		
		No		

Q#	QUESTIONS	RESPONSES		SKIPS
Ask: MOH Warehouse Referral Hospitals SDP	meetings, to review LMIS (paper or electronic LMIS) data and reports?	I don't know		
LM-110 Ask: MOH Warehouse	Is there a formal system or mechanism for users to report issues with the system that require improvements?	Yes		
		No		
		I don't know		
LM-111 Ask: MOH Warehouse	Is there a technical working group that addresses all technical input into the system?	Yes		
		No		
		I don't know		
LM-112 Ask: MOH Warehouse	Is there a help desk or other mechanism for users to ask questions and request support with the system?	Yes		
		No		
		I don't know		
LM-200: Data Tools and Indicators				
LM-201 Ask: Warehouse Referral Hospital SDP	What challenges do you face when using electronic LMIS? [MULTIPLE RESPONSES ALLOWED]	Internet connectivity		Skip this question if LM-101 is "Paper based LMIS Only" or "I don't know" LM-202
		Down time centrally (system failure)		
		Availability of computers		
		Skilled staff		
		Delayed feedback from higher levels (MOH or warehouse) on system & reporting		
		Lack of time due to other tasks		
		Data Loss		

Q#	QUESTIONS	RESPONSES		SKIPS
		Challenges in analysis of data		
		Challenges in retrieval of data		
		Use of different versions of the tool		
		Slow adaptation of revisions within tools		
		Insufficient training or human resources capability		
		Insufficient staff		
		Data quality or data entry errors		
		Others (Please specify:)		
		None		
		I don't know		
LM-202 Ask: MOH	What challenges do you face when using electronic LMIS? [MULTIPLE RESPONSES ALLOWED]	Internet connectivity		
		Down time centrally (system failure)		
		Availability of computers		
		Skilled Staff		
		Lack of time due to other tasks		
		Data Loss		
		Challenges in Analysis of Data		
		Challenges in Retrieval of Data		Skip this question if LM-101 is "Paper based LMIS Only" or "I don't know" LM-203
		Use of Different Versions of the Tool		
		Slow adaptation of revisions within tools		
		Insufficient training or human resources capability		
		Insufficient staff		
		Data quality or data entry errors		
		Othres (Please Specify:)		
		None		

Q#	QUESTIONS	RESPONSES		SKIPS
		I don't know		
LM-203 Ask: Warehouse Referral Hospitals SDP	What challenges do you face when using paper based LMIS? [MULTIPLE RESPONSES ALLOWED]	Stock out of tools		Skip this question if LM-101 is "electronic LMIS Only" or "I don't know" LM-204
		Data loss		
		Delayed feedback from higher levels (MOH or warehouse) on system & reporting		
		Difficulties in filing		
		Challenges in analysis of data		
		Challenges in sharing data		
		Challenges in retrieval of data		
		Use of different version of tools in the same system		
		Slow adaptation of revisions within tools		
		Insufficient training or human resources capability		
		Insufficient staff		
		Data quality or data entry errors		
		Others (Pleas Specify:)		
		None		
		I don't know		
LM-204 Ask: MOH	What challenges do you face when using paper based LMIS? [MULTIPLE RESPONSES ALLOWED]	Stock out of tools, Insufficient staff		Skip this question if LM-101 is "electronic LMIS Only" or "I don't know" LM-205
		Data loss		
		Difficulties in filing		
		Challenges in analysis of data		
		Challenges in sharing data		
		Challenges in retrieval of data		
		Use of different version of tools in the same system		
		Slow adaptation of revisions within tools		

Q#	QUESTIONS	RESPONSES		SKIPS
		Insufficient training or human resources capability		
		Insufficient Staff		
		Data quality or data entry errors		
		Others (Please specify:)		
		None		
		I don't know		
LM-205 Ask: MOH Warehouse Referral Hospitals SDP	How many separate supply chain and commodity reports (whether electronic or paper) are submitted per facility during the reporting cycle? NOTE: For example, are separate reports required for different programs or products, such as Lab, ART, malaria, family planning, MCH, vaccine program, Essential medicines and health supplies.	1-3		
		4-6		
		7-10		
		>10		
		None		
		I don't know		
LM-206 Ask: Warehouse Referral Hospitals SDP	Which of the following paper LMIS tools have you had a stock out of in the last (1) year? NOTE: If the facilities print the forms themselves and they have the available equipment and supplies, then this is considered to NOT be a stock out. However, if they were not able to print out, then there would be a stock out. For example, when you need a stock card, one is not available, that is a stock card stock out. The intent of this question is to assess if the tools needed to manage the stores are available. [MULTIPLE RESPONSES ALLOWED]	Stock Cards		Skip this question if LM-101 is "electronic LMIS Only" or "I don't know" LM-207
		Dispensing Logs		
		Report & Requisition		
		Supply Voucher		
		Other (Please Specify:)		
		None (no stock outs of LMIS tools in the last year)		
		I don't know		
LM-207	How many different types of dispensing registers does the	1-3		
		4-6		

Q#	QUESTIONS	RESPONSES		SKIPS
<u>Ask:</u> Referral Hospitals SDP	facility complete during issuing of supplies to patients? For example, do different programs or products require different dispensing registers?	7-10		
		>10		
		None		
		I don't know		
LM-207 <u>Ask:</u> Referral Hospitals SDP	How many different types of dispensing registers does the facility complete during issuing of supplies to patients? For example, do different programs or products require different dispensing registers?	1-3		
		4-6		
		7-10		
		>10		
		None		
		I don't know		
LM-208 <u>Ask:</u> MOH	Which data-points are recorded in the electronic LMIS? [MULTIPLE RESPONSES ALLOWED]	Stock on hand		Skip this question if LM-101 is "paper based LMIS Only" or "I don't know" LM-209
		Consumption		
		Adjustments		
		Losses and Expiry		
		Issues and receipts		
		Safety stock for each commodity		
		Frequency of reordering		
		Quantity of reordering		
		Expiration dates		
		Number of days out of stock		
		None of the above		
		I don't know		
LM-209 <u>Ask:</u> MOH	Which data-points are recorded in the Paper LMIS? [MULTIPLE RESPONSES ALLOWED]	Stock on hand		Skip this question if LM-101 is "electronic LMIS Only" or "I don't know" LM-210
		Consumption		
		Adjustments		
		Losses and Expiry		
		Issues and receipts		

Q#	QUESTIONS	RESPONSES		SKIPS
		Safety stock for each commodity		
		Frequency of reordering		
		Quantity of reordering		
		Expiration dates		
		Number of days out of stock		
		None of the above		
		I don't know		
LM-210 Ask: MOH Warehouse	Do you track the following LMIS indicators at least annually? NOTE: for paper or electronic LMIS. An accurate report contains correct data and information as computed from the previous months report. [MULTIPLE RESPONSES ALLOWED] VERIFY WITH LM-703	Timeliness of reporting (the percentage of facilities submitting their LMIS reports to the receiving facility (central or intermediary e.g. district) on time)		
		Completeness of reporting (the percentage of facilities submitting LMIS reports to the receiving facility with information for all required data elements, or the percentage of data elements that were completed)		
		Accuracy of reporting (the percentage of facilities submitting LMIS reports to the receiving facility with all data elements having correct values, or the percentage of data elements that were confirmed as correct)		
		None of the above		
		I don't know		
LM-211		Paper LMIS or records		

Q#	QUESTIONS	RESPONSES		SKIPS
Ask: MOH Warehouse	Which tool does the central and intermediate levels of the health system use to track stock at individual service delivery points in their coverage area? NOTE: This question is intended to ask, for example, how the Central Medical Stores or Regional Medical Stores track stock at health centers they supply or support. This question is NOT about how they track stock in their own stores. [MULTIPLE RESPONSES ALLOWED]	Electronic LMIS or other electronic system		
		Both Paper based & electronic records/LMIS		
		None		
		I don't know		
LM-212 Ask: MOH Warehouse	Which supply chain management activities are informed by (electronic or paper) LMIS reports? [READ EACH. MULTIPLE RESPONSES ALLOWED]	Ordering & reporting		
		Supply planning		
		Forecasting		
		Procurement (emergency or scheduled)		
		Product selection		
		Inventory management		
		Reverse logistics		
		Re-distribution		
		Donor activities		
		Budgeting		
		Waste management		
		Transportation		
		None of the above		
		I don't know		
LM-213 Ask:	Which supply chain management Monitoring and Evaluation activities are	Ordering & reporting		
		Supply planning		

Q#	QUESTIONS	RESPONSES		SKIPS
Referral Hospitals	informed by (electronic or paper) LMIS reports? [READ EACH. MULTIPLE RESPONSES ALLOWED]	Forecasting		
		Procurement (emergency or scheduled)		
		Product selection		
		Inventory management		
		Reverse logistics		
		Re-distribution		
		Donor activities		
		Budgeting		
		Waste management		
		Systems Performance		
		None of the above		
		I don't know		
LM-214 Ask: SDP	Which supply chain management monitoring and evaluation activities are informed by (electronic or paper) LMIS reports? [READ EACH. MULTIPLE RESPONSES ALLOWED]	Ordering & reporting		
		Inventory management		
		Reverse logistics		
		Waste management		
		Systems Performance		
		None of the above		
		I don't know		
LM-300: LMIS Standard Operating Procedures				
LM-301	Are there Standard Operating Procedures (SOPs) for the	Yes		Skip this question and
		No		

- 133 -

Q#	QUESTIONS	RESPONSES		SKIPS
<u>Ask:</u> MOH Warehouse Referral Hospitals SDP	paper based LMIS available at this site/facility (in electronic or paper copy)? [MULTIPLE RESPONSES ALLOWED] VERIFY WITH LM-704	I don't know		LM-302 if LM-101 was "electronic LMIS only" or "I don't know" If answer is "Yes", continue; Otherwise, go to LM-303
LM-302 <u>Ask:</u> MOH Warehouse	How often are SOPs for paper based LMIS updated? NOTE: For answers in between the choices, round up. For example, if updates are done every 15, 18 or 21 months, select "Every 2 years"	Annually or more often		
		Every 2 years		
		Every 3 years		
		Every 4 years or less often		
		Never		
		I don't know		
LM-303 <u>Ask:</u> MOH Warehouse Referral Hospitals SDP	Are there Standard Operating Procedures (SOPs) for the electronic LMIS available at this site/facility (in electronic or paper copy)? VERIFY WITH LM-705	Yes		Skip this question and LM-304 if LM-101 was "paper based LMIS only" or "I don't know" If answer is "Yes", continue; Otherwise, go to LM-400
		No		
		I don't know		
LM-304 <u>Ask:</u> MOH Warehouse	How often are SOPs for electronic LMIS updated? NOTE: For answers in between the choices, round up. For example, if updates are done every 15, 18 or 21 months, select "Every 2 years"	Annually or more often		
		Every 2 years		
		Every 3 years		
		Every 4 years or less often		
		Never		
		I don't know		
LM-400: Data Quality Assessments (DQAs)				
LM-401		Yes		If "Yes", continue;
		No		

Q#	QUESTIONS	RESPONSES		SKIPS
<u>Ask:</u> MOH Warehouse Referral Hospitals SDP	Does this site conduct internal data quality assessments (DQA)? VERIFY WITH LM-706	I don't know		Otherwise, go to next section LM-500
LM-402 <u>Ask:</u> MOH Warehouse	At what level are data quality assessments – or DQAs – conducted? [MULTIPLE RESPONSES POSSIBLE]	National		
		Central District		
		Health Facility		
		Other (Please Specify:)		
		They are not done		
		I don't know		
LM-403 <u>Ask:</u> Referral Hospitals SDP	Who conducts DQAs at this facility?	MOH		
		Regional/Intermediate Warehouses		
		Other District Authorities		
		Staff at this facility		
		Other (Please Specify:)		
		I don't know		
LM-404 <u>Ask:</u> Warehouse Referral Hospitals SDP	Is feedback from the data quality assessments (DQAs) shared with this facility?	Yes		
		No		
		I don't know		
LM-405		Yes		
		No		

Q#	QUESTIONS	RESPONSES		SKIPS
Ask: MOH Warehouse Referral Hospitals SDP	Is feedback from the DQAs shared with external stakeholders? Note: Stakeholders might include donors, Implementing partners or other government partners	I don't know		
LM-406 Ask: MOH Warehouse Referral Hospitals SDP	Has this site adjusted its systems or processes based on prior DQA results?	Yes		
		No		
		I don't know		
LM-500: Hardware and Software				
LM-501 Ask: MOH Warehouse	Is the electronic LMIS run on a specialized LMIS software package/program? NOTE: Examples are OpenLMIS, OneNetwork, Logistimo, or a locally developed LMIS software that works across multiple health system levels Specialized LMIS software package/program indicates software designed specifically for LMIS, and should not include Excel, Access, or other generic software. VERIFY WITH LM-707	Yes		Skip this section if LM-101 was "Paper based LMIS only", "None", or "I don't know". LM-600
		No		
		I don't know		
LM-502	Is there internet connectivity at this facility?	Yes, and internet always or almost always works		**Skip this section if LM-101 was "Paper**

Q#	QUESTIONS	RESPONSES		SKIPS
Ask: MOH Warehouse Referral Hospitals SDP		Yes, but internet frequently does not work		**based LMIS only", "None", or "I don't know".** **LM-600**
		No		
		I don't know		
LM-503 Ask: MOH Warehouse Referral Hospitals SDP	Does LMIS computing equipment include current virus protection? VERIFY WITH LM-708	Yes – all computing equipment running LMIS		
		Yes – some equipment running LMIS (not all)		
		No		
		I don't know		
LM-504 Ask: MOH Warehouse	Does the electronic LMIS exchange data with other electronic health or supply chain systems? NOTE: Examples of other systems include the health management information system (HMIS), warehouse management system (WMS), or procurement management system.	Yes, through electronic data interchange or interoperability with other health systems		
		Yes, only through manual export or import of data		
		No		
		I don't know		
LM -600: LMIS Budget				
LM-601 Ask: MOH Warehouse Referral Hospitals SDP	Does this facility develop an LMIS budget as part of the overall organizational budget? NOTE: This might include budget for capacity building, printing LMIS forms, internet costs, maintenance and antivirus costs, hardware costs, etc. [MULTIPLE RESPONSES ALLOWED]	Yes – for the paper based LMIS		Skip this section if LM-101 was "None", or "I don't know".
		Yes – for the electronic LMIS		
		No		
		I don't know		

Q#	QUESTIONS	RESPONSES		SKIPS
LM-602 Ask: MOH Warehouse Referral Hospitals SDP	Who is responsible for funding the paper based LMIS budget? NOTE: This might include budget for capacity building, printing LMIS forms, etc. [MULTIPLE RESPONSES ALLOWED]	Government budget (central or decentralized level)		Skip this question and LM-603 if LM-101 was "electronic LMIS only' or "I don't know" If "Government budget" or "facility revenue/cost recovery", continue; Otherwise, go to LM-604
		Donor/Implementing Partners		
		Facility revenue/cost recovery		
		I don't know		
LM-603 Ask: MOH Warehouse Referral Hospitals SDP	How much is government budget or facility revenue/cost recovery contributing to recurring paper based LMIS costs? NOTE: percentages are given as a guide; the exact percentage is not needed.	Minimal (less than 25%)		
		Some (25-50%)		
		Most (51-99%)		
		All (100%)		
		I don't know		
LM-604 Ask: MOH Warehouse Referral Hospitals SDP	Who is responsible for funding electronic LMIS budget? NOTE: This might include budget for capacity building, internet costs, maintenance and antivirus costs, hardware costs, etc. [MULTIPLE RESPONSES ALLOWED]	Government budget (central or decentralized level)		Skip this question and LM-605 if LM-101 was "paper based LMIS only" or "I don't know" If "Government budget" or "facility revenue/cost recovery", continue; Otherwise, go to next section LM-700
		Donor/Implementing Partners		
		Facility revenue/cost recovery		
		I don't know		
LM-605 Ask:	How much is government budget or facility revenue/cost recovery contributing to recurring electronic LMIS costs?	Minimal (less than 25%)		
		Some (25-50%)		
		Most (51-99%)		

Q#	QUESTIONS	RESPONSES		SKIPS
MOH	NOTE: percentages are given as a guide; the exact percentage is not needed.	All (100%)		
Warehouse		I don't know		
Referral Hospitals				
SDP				

LM-700: PHYSICAL VERIFICATION:			
Please ask to see physical copies of the following documents, and verify the questions above			
Q#	**VERIFICATION REQUIRED**	**RESPONSES**	**SKIPS**
LM-701	Verify existence of policies that guide the paper LMIS? [VERIFIES LM-102]	Physically verified	SKIP this question if LM-102 is "No" or "I don't know"
		Could NOT physically verify	
LM-702	Verify existence of policies that guide the electronic LMIS? [VERIFIES LM-103]	Physically verified	SKIP this question if LM-103 is "No" or "I don't know"
		Could NOT physically verify	
LM-703	Verify which of the following LMIS indicators are tracked at least annually. [VERIFIES LM-210]	Timeliness of reporting	SKIP this question if LM-210 is "None of the above" or "I don't know"
		Completeness of reporting	
		Accuracy of reports	
		None of the above	
LM-704	Verify existence of Standard Operating Procedures (SOPs) for the paper based LMIS at this site/facility (in electronic or paper copy) [VERIFIES LM-301]	Physically verified	SKIP this question if LM-301 is "No" or "I don't know"
		Could NOT physically verify	
LM-705	Verify existence of Standard Operating Procedures (SOPs) for the electronic LMIS at this site/facility (in electronic or paper copy) [VERIFIES LM-303]	Physically verified	SKIP this question if LM-303 is "No" or "I don't know"
		Could NOT physically verify	
LM-706	Verify whether data quality assessments (DQA) are conducted at this site. For example, if they have a	Physically verified	SKIP this question if LM-401 is "No" or "I don't know"
		Could NOT physically verify	

	DQA report. [VERIFIES LM-401]			
LM-707	Verify that the electronic LMIS is run on a specialized LMIS software package/program [VERIFIES LM-501]	Physically verified		SKIP this question if LM-501 is "No" or "I don't know"
		Could NOT physically verify		
LM-708	Verify that LMIS computing equipment includes current virus protection [VERIFIES LM-503]	Physically verified for all computers running LMIS		SKIP this question if LM-503 is "No" or "I don't know"
		Physically verified for some computers running LMIS		
		Could NOT be physically verified		

ID10	Ending Time	End : [__|__] [__|__] am/pm Hour Minutes

Any notes about interview:

END OF MODULE 10 – LMIS

MODULE 11:
WASTE MANAGEMENT

CENTRAL/MOH LEVEL: For this module, interview the lead technical expert for waste management for the Ministry of Health, if available. If not, interview the head of the Ministry of Health supply chain department or pharmacy department, or another person knowledgeable about the national waste management policies and processes.

CENTRAL OR INTERMEDIATE WAREHOUSE: For this module, interview the warehouse manager or pharmacy specialist at the warehouse, if available. If not, interview another person knowledgeable about the waste management processes at the warehouse.

REFERRAL HOSPITAL: For this module, interview the storeroom manager or head of pharmacy at the hospital, if available. If not, interview another person knowledgeable about the waste management processes at the hospital.

SERVICE DELIVERY POINTS: For this module, interview the storeroom manager or head of pharmacy, if available. If not, interview another person knowledgeable about the waste management processes at the facility.

Q#	QUESTIONS	RESPONSES		Skips & observation
WM-100: General Waste Management				
WM-101 Ask: MOH	Are there formally approved national waste management and disposal regulations? VERIFY WITH WM-401	Yes		If "Yes", continue; Otherwise, go to WM-103
		No		
		I don't know		
WM-102 Ask: MOH	Is there a national regulatory agency or department in place for managing and enforcing such regulations?	Yes		
		No		
		I don't know		
WM-103 Ask: MOH	Are there other environmental regulations that affect waste treatment systems, such as air emission standards for incinerators?	Yes		
		No		
		I don't know		
WM-104 Ask: MOH	Does the MOH have approved guidelines for waste management and disposal? NOTE: For example, guidelines for the storage and destruction of expired, damaged and obsolete products VERIFY WITH WM-402	Yes		If "Yes", continue; Otherwise, go to WM-106
		No		
		I don't know		
WM-105 Ask: MOH	Which of the following waste types or categories are specifically covered and differentiated in the waste treatment guidelines? [MULTIPLE RESPONSES ALLOWED] VERIFY WITH WM-403	General or municipal type waste		
		Hazardous or chemical type waste		
		Infectious or medical type waste (or unusable medical products)		
		Pharmaceutical type waste (or unusable pharmaceutical products)		
		None of the above/All-inclusive (No specific waste type or category)		
		I don't know		
WM-106		Yes		

Q#	QUESTIONS	RESPONSES		Skips & observation
Ask: MOH Warehouse Referral Hospital SDP	Are approved standard operating procedures (SOPs) for waste management and disposal available at this site/facility (in electronic or paper copy)? E.g. SOPs for storage and destruction of expired, damaged and obsolete products VERIFY WITH WM-404	No		If "Yes", Continue. Otherwise, go to WM-108
		I don't know		
WM-107 Ask: MOH Warehouse Referral Hospital SDP	How often are guidelines and/or SOPs for waste management updated? NOTE: For answers in between the choices, round up. For example, if updates are done every 15, 18 or 21 months, select "Every 2 years"	Annually or more often		
		Every 2 years		
		Every 3 years		
		Every 4 years or less often		
		Never		
		I don't know		
WM-108 Ask: Warehouse Referral Hospital SDP	For waste disposal events, is the disposal process authorized and documented? VERIFY WITH WM-405	Yes		
		No		
		I don't know		
WM-109 Ask: Warehouse Referral Hospital SDP	Are unusable pharmaceutical products stored separately? VERIFY WITH WM-406	Yes		
		No		
		I don't know		

Q#	QUESTIONS	RESPONSES		Skips & observation
WM-1 10 <u>Ask:</u> Warehouse Referral Hospital SDP	What means or methods are used for treating and/or disposing of pharmaceutical waste generated or in storage at the site or facility? NOTE: Could be done via contract or by the facility itself. [MULTIPLE RESPONSES ALLOWED]	Municipal landfill disposal		If "None - disposal is not done" or "I don't know" then go to WM-112; Otherwise, continue.
		Incineration (on-site) followed by landfill disposal of ash residues		
		Inertization or solidification followed by landfill disposal of treated waste residues		
		Steam autoclaving followed by landfill disposal of treated waste residues		
		Transport to higher level government facility or warehouse		
		Contract (third-party) pick-up, transport and disposal by certified waste management company		
		Other technology or method. Please specify:		
		None - disposal is not done		
		I don't know		
WM-1 11 <u>Ask:</u> Warehouse Referral Hospital SDP	Is the disposal supervised or certified by a regulatory authority? NOTE: The regulatory authority attends during the destruction and/or they issue a certificate or similar document allowing the facility to conduct disposal.	Yes		
		No		
		I don't know		
WM-1 12	Are unusable pharmaceutical waste products at the health	Yes		Skip this question if WM-
		No		

Q#	QUESTIONS	RESPONSES		Skips & observation
Ask: Warehouse Referral Hospital SDP	facility/hospital/warehouse sorted by method of disposal? VERIFY WITH WM-407	I don't know		109 is "No" or "I don't know" WM-201
WM-200: Monitoring & Waste Management				
WM-201 Ask: MOH Warehouse Referral Hospital SDP	How are waste management practices monitored? [MULTIPLE RESPONSES ALLOWED]	Regular collection of KPIs		
		External audits		
		Internal audits		
		On-site monitoring		
		None of the above		
		I don't know		
WM-202 Ask: MOH Warehouse Referral Hospital	Do you identify and track corrective actions for waste disposal?	Yes		
		No		
		I don't know		
WM-300: Waste Management MIS				
WM-301	Is the waste management system integrated with LMIS?	Yes		
		No		

Q#	QUESTIONS	RESPONSES		Skips & observation
Ask: MOH Warehouse Referral Hospital		I don't know		
WM-302 Ask: MOH Warehouse Referral Hospital	What software is used for waste management, including collection planning (scheduling, transportation, routing, etc.)? [MULTIPLE RESPONSES ALLOWED]	Excel/Access based system		
		WMS (Warehouse Management System)		
		electronic LMIS		
		Other. Please specify:		
		None		
		I don't know		

WM-400: PHYSICAL VERIFICATION: Please ask to see physical copies of the following documents, and verify the questions above				
Q#	VERIFICATION REQUIRED	RESPONSES		SKIPS
WM - 401	Verify existence of formally approved national waste management and disposal regulations [VERIFIES WM-101]	Physically verified		SKIP this question if WM-101 is "No" or "I don't know"
		Could NOT physically verify		
WM - 402	Verify existence of a formally approved MOH guidelines for waste management and disposal [VERIFIES WM-104]	Physically verified		SKIP this question if WM-104 is "No" or "I don't know"
		Could NOT physically verify		
WM - 403	Verify which of the following types of waste are explicitly covered and differentiated in the waste treatment guidelines [VERIFIES WM-105]	General or municipal type waste		SKIP this question if WM-105 is "None of the above/All-inclusive" or "I don't know"
		Hazardous or chemical type waste		
		Infectious or medical type waste		

		(or unusable medical products)		
		Pharmaceutical type waste (or unusable pharmaceutical products)		
		None of the above/All-inclusive (No specific waste type or category is differentiated)		
WM - 404	Verify the existence of approved SOPs for waste management and disposal at this site/facility (in electronic or paper copy) [VERIFIES WM-106]	Physically verified		SKIP this question if WM-106 is "No" or "I don't know"
		Could NOT physically verify		
WM- 405	Verify that the disposal process for waste disposal events is authorized and documented [VERIFIES WM-108]	Physically verified		SKIP this question if WM-108 is "No" or "I don't know"
		Could NOT physically verify		
WM- 406	Verify that unusable pharmaceutical products are stored in a separate location [VERIFIES WM-109]	Physically verified		SKIP this question if WM-109 is "No" or "I don't know"
		Could NOT physically verify		
WM- 407	Verify that unusable pharmaceutical waste products are sorted by method of disposal [VERIFIES WM-112]	Physically verified		SKIP this question if WM-112 is "No" or "I don't know"
		Could NOT physically verify		

Thank you and close interview

ID11	Ending Time	End : [__|__] [__|__] am/pm
		Hour Minutes

Any notes about interview:

END OF MODULE 11 – WASTE MANAGEMENT

Telephone: General Lines: 256 – 417 – 712260
Permanent Secretary's Office: 256 – 417 – 712221

E-mail: ps@health.go.ug

Website: www.health.go.ug
IN ANY CORRESPONDANCE ON
THIS SUBJECT PLEASE QUOTE NO: ADM.140/323/01

Ministry of Health
P. O. Box 7272
Plot 6, Lourdel Road,
Wandegeya
KAMPALA
UGANDA

THE REPUBLIC OF UGANDA

24 April 2018

Dear Dr./Professor/Mr./Mr…………………………………………………..

RE: INVITATION TO PARTICIPATE IN UGANDA'S NATIONAL SUPPLY CHAIN ASSESSMENT - MAPPING EXERCISE

The Ministry of Health (MoH), in collaboration with USAID and The Global Fund, is conducting a National Supply Chain Assessment (NSCA) of essential medicines and Health Supplies. The purpose of the assessment is to provide a comprehensive view of the national public-sector supply chain systems, processes, technologies and human capacity, to inform long-term, transformational investments. The NSCA will include a nationally representative sample of health facilities that receive essential medicines and health supplies purchased using public funds. The results of the assessment will be used to improve the supply chain system, and in determining where both targeted technical and financial assistance could be positioned for the greatest impacts in supply chain reform.

You are invited as a key supply chain stakeholder to participate in a one-day workshop taking place on Monday, May 7, 2018 from 8:30AM to 5:00PM at the Marriott Protea Hotel in Kololo.

The purpose of this event, a precursor to the NSCA, is to solicit input into the MoH's vision for the national public-sector supply chain system. This invite-only meeting is in continuation to the MOH-led introductory workshop on the NSCA completed last December 21, 2017.

Please adjust your calendar accordingly to participate in the important meeting and RSVP no later than Tuesday, May 1st to NSCAUganda2018@ghsc-psm.org or to Ms Akello Harriet, Senior Pharmacist at 0782927403 or harakello@gmail.com

Thank you for your continued partnership and support.

Dr. Henry G Mwebesa

Ag. Director General of Health Services

CC: Permanent Secretary, Ministry of Health
       Permanent Secretary, Ministry of Local Government
       Director Clinical Services, Ministry of Health
       Ag. Assistant Commissioner Health Services, Ministry of Health
       Ag Assistant Commissioner, Pharmacy Division, Ministry of Health

26 April 2018

Dear Dr./Mr./Ms.:……………………………………………

RE: NOTIFICATION OF DISTRICT FACILITIES INVOLVEMENT IN UGANDA'S NATIONAL SUPPLY CHAIN ASSESSMENT

The Ministry of Health (MoH), in collaboration with USAID and The Global Fund, is conducting a National Supply Chain Assessment (NSCA) of essential medicines. The purpose of the assessment is to provide a comprehensive view of the national public-sector supply chain systems, processes, technologies and human capacity, to inform long-term, transformational investments. The NSCA will include a nationally representative sample of health facilities supported through public funds. The results of the assessment will be used to improve the system in determining where both targeted technical and financial assistance could be positioned for the greatest impacts in reform.

The purpose of this letter is to inform you that specific facilities in your district were randomly selected to be included in this assessment (see enclosed list). During May 14-25, 2018, a team of enumerators consisting of MoH and other public-sector supply chain stakeholders will visit the selected facility in your district. Using a questionnaire tool, this team will interview several facility staff on a series of questions regarding commodity ordering and storage.

You are expected to accord them all the necessary assistance. For more information please contact the undersigned address or Ms Akello Harriet, Senior Pharmacist at 0782927403 or harakello@gmail.com

Thank you for your continued partnership and support.

Dr. Henry G Mwebesa

Ag. Director General of Health Services

CC: Permanent Secretary, Ministry of Health
        Permanent Secretary, Local Government
        Director Clinical Services, Ministry of Health
        Ag. Assistant Commissioner Health Services, Pharmacy, Ministry of Health
        Chief Administration Officer

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Permanent Secretary's Office: 256 – 417 – 712221

E-mail: ps@health.go.ug

Website: www.health.go.ug
IN ANY CORRESPONDANCE ON
THIS SUBJECT PLEASE QUOTE NO: ADM.140/323/01

THE REPUBLIC OF UGANDA

Ministry of Health
P. O. Box 7272
Plot 6, Lourdel Road,
Wandegeya
KAMPALA
UGANDA

26 April 2018

Dear Dr.//Mr./Ms.:...

RE: NOTIFICATION OF DISTRICT STAFF INVOLVEMENT IN UGANDA'S NATIONAL SUPPLY CHAIN ASSESSMENT

The Ministry of Health (MoH), in collaboration with USAID and The Global Fund, is conducting a National Supply Chain Assessment (NSCA) of essential medicines. The purpose of the assessment is to provide a comprehensive view of the national public-sector supply chain systems, processes, technologies and human capacity, to inform long-term, transformational investments. The NSCA will include a nationally representative sample of health facilities supported through public funds. The results of the assessment will be used to improve the system in determining where both targeted technical and financial assistance could be positioned for the greatest impacts in reform.

The purpose of this letter is to inform you that your district's Medicines Management Supervisors (MMS) and Regional Pharmacists were randomly selected to participate in this exercise as enumerators (data collectors). The selected enumerators are expected to be available for three weeks from May 7-25, 2018 and will be facilitated as per the MoH guidelines. During this period, the NSCA will be initiated with a five-day training in Kampala followed by two weeks of data collection, as outlined below:

Enumerator Training   Data Collection Exercise

When: May 7-11, 2018, 8:30AM-5:00PM   When:May 14-25, 2018

Where: Marriott Protea Hotel in Kololo   Where:Various selected Districts

Please adjust your staffing plans accordingly to ensure ample coverage for the responsibilities of these personnel during their engagement in the NSCA.

Thank you for your continued partnership and support.

Dr. Henry G Mwebesa

Ag. Director General of Health Services

CC: Permanent Secretary, Ministry of Health
        Permanent Secretary, Ministry of Local Government
        Director Clinical Services, Ministry of Health
        Ag. Assistant Commissioner Health Services, Pharmacy ,Ministry of Health
        Chief Administration Officer

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Permanent Secretary's Office: 256 – 417 – 712221
E-mail: ps@health.go.ug

Website: www.health.go.ug
IN ANY CORRESPONDANCE ON
THIS SUBJECT PLEASE QUOTE NO: ADM.140/323/01

THE   REPUBLIC OF UGANDA

Ministry of Health
P. O. Box 7272
Plot 6, Lourdel Road,
Wandegeya
KAMPALA
UGANDA

26 April 2018

The General Manager,
National Medical Stores.

Dear Sir,

RE: NOTIFICATION OF KEY INFORMANT SELECTION FOR UGANDA'S NATIONAL SUPPLY CHAIN ASSESSMENT

The Ministry of Health (MoH), in collaboration with USAID and The Global Fund, is conducting a National Supply Chain Assessment (NSCA) of essential medicines and health supplies. The purpose of the assessment is to provide a comprehensive view of the national public-sector supply chain systems, processes, technologies and human capacity, to inform long-term, transformational investments. The NSCA will include a nationally representative sample of health facilities supported through public funds. The results of the assessment will be used to improve the system in determining where both targeted technical and financial assistance could be positioned for the greatest impacts in reform. \

Based on your key roles and responsibilities in the public-sector supply chain system, the MoH has selected you as a key stakeholder to participate in the assessment as a key informant. During May 14-25, 2018, a team of enumerators consisting of USAID, The Global Fund and/or USAID Global Health Supply Chain - Procurement Supply Management (GHSC-PSM) staff will contact you to arrange an interview. Using a questionnaire tool, this team will ask you and your team a series of questions related to the survey modules outlined below.

- **Strategic Planning & Management**
- **Financial Sustainability**
- **Forecasting & Supply Planning**
- **Warehousing & Storage**
- **Waste Management**

- **Human Resources (Supply Chain)**
- **Policy & Governance**
- **Procurement & Customs Clearance**
- **Distribution (Transportation included**

A NSCA representative will contact you later this week to confirm your appointment. Please address any questions to the undersigned, and/or contact Ms. Harriet Akello, Senior Pharmacist at the MoH: harakello@gmail.com/0782927403.

Thank you for your continued partnership and support.

Dr. Henry G Mwebesa
Ag. Director General of Health Services
CC: Permanent Secretary, Ministry of Health
        The Permanent Secretary, Ministry of Local Government
        Director Clinical Services, Ministry of Health
        Ag. Assistant Commissioner Health Services, Pharmacy, Ministry of Health

Telephone: General Lines: 256 – 417 – 712260
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IN ANY CORRESPONDANCE ON
THIS SUBJECT PLEASE QUOTE NO: ADM.140/323/01

REPUBLIC OF UGANDA

Ministry of Health
P. O. Box 7272
Plot 6, Lourdel Road,
Wandegeya
KAMPALA
UGANDA

26 April 26, 2018

The Executive Secretary
National Drug Authority

Dear Madam,

RE: NOTIFICATION OF KEY INFORMANT SELECTION FOR UGANDA'S NATIONAL SUPPLY CHAIN ASSESSMENT

The Ministry of Health (MoH), in collaboration with USAID and The Global Fund, is conducting a National Supply Chain Assessment (NSCA) of essential medicines. The purpose of the assessment is to provide a comprehensive view of the national public-sector supply chain systems, processes, technologies and human capacity, to inform long-term, transformational investments. The NSCA will include a nationally representative sample of health facilities supported through public funds. The results of the assessment will be used to improve the system in determining where both targeted technical and financial assistance could be positioned for the greatest impacts in reform.

Based on your qualification and experience in the public-sector supply chain system, the MoH has selected you as a key stakeholder to participate in the assessment as a key informant. During May 14-25, 2018, a team of enumerators consisting of USAID, The Global Fund and/or USAID Global Health Supply Chain - Procurement Supply Management (GHSC-PSM) staff will contact you to arrange an interview. Using a questionnaire tool, this team will ask you and your team a series of questions related to the survey modules outlined below.

- **Strategic Planning & Management**
- **Quality & Pharmacovigilance**

- **Policy & Governance**
- **Waste Management**
-

A NSCA representative will contact you later this week to confirm your appointment. Please address any questions to the undersigned, and/or contact Ms. Harriet Akello, Senior Pharmacist at the MoH: harakello@gmail.com/0782927403.

Thank you for your continued partnership and support.

Dr. Henry G Mwebesa
Ag. Director General of Health Services
CC: Permanent Secretary, Ministry of Health
        The Permanent Secretary, Ministry of Local Government
        Director Clinical Services, Ministry of Health
        Ag. Assistant Commissioner Health Services, Pharmacy, Ministry of Health

Telephone: General Lines: 256 – 417 – 712260
Permanent Secretary's Office: 256 – 417 – 712221
E-mail: ps@health.go.ug

Website: www.health.go.ug
IN ANY CORRESPONDANCE ON
THIS SUBJECT PLEASE QUOTE NO: ADM.140/323/01

Ministry of Health
P. O. Box 7272
Plot 6, Lourdel Road,
Wandegeya
KAMPALA
UGANDA

THE   REPUBLIC OF UGANDA

26 April 2018

The Executive Director,
Joint Medical Stores.

Dear Sir,

RE: NOTIFICATION OF KEY INFORMANT SELECTION FOR UGANDA'S NATIONAL SUPPLY CHAIN ASSESSMENT

The Ministry of Health (MoH), in collaboration with USAID and The Global Fund, is conducting a National Supply Chain Assessment (NSCA) of essential medicines and health supplies. The purpose of the assessment is to provide a comprehensive view of the national public-sector supply chain systems, processes, technologies and human capacity, to inform long-term, transformational investments. The NSCA will include a nationally representative sample of health facilities supported through public funds. The results of the assessment will be used to improve the system in determining where both targeted technical and financial assistance could be positioned for the greatest impacts in reform.

Based on your key roles and responsibilities in the public-sector supply chain system, the MoH has selected you as a key stakeholder to participate in the assessment as a key informant. During May 14-25, 2018, a team of enumerators consisting of USAID, The Global Fund and/or USAID Global Health Supply Chain - Procurement Supply Management (GHSC-PSM) staff will contact you to arrange an interview. Using a questionnaire tool, this team will ask you and your team a series of questions related to the survey modules outlined below.

- **Strategic Planning & Management**
- **Financial Sustainability**
- **Forecasting & Supply Planning**
- **Warehousing & Storage**
- **Waste Management**

- **Human Resources (Supply Chain)**
- **Policy & Governance**
- **Procurement & Customs Clearance**
- **Distribution (Transportation included**

A NSCA representative will contact you later this week to confirm your appointment. Please address any questions to the undersigned, and/or contact Ms. Harriet Akello, Senior Pharmacist at the MoH: harakello@gmail.com/0782927403.

Thank you for your continued partnership and support.

Dr. Henry G Mwebesa
Ag. Director General of Health Services
CC: Permanent Secretary, Ministry of Health
        The Permanent Secretary, Ministry of Local Government
        Director Clinical Services, Ministry of Health
        Ag. Assistant Commissioner Health Services, Pharmacy, Ministry of Health

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UGANDA

26 April 2018

Secretary
Uganda Protestant Medical Bureau

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UGANDA

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Uganda Catholic Medical Bureau

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NATIONAL SUPPLY CHAIN ASSESSMENT (NSCA)

DATA COLLECTION TRAINING

May 8-11, 2018

Kampala, UGANDA

INTRODUCTIONS

OPENING REMARKS

HOUSE KEEPING ISSUES AND GROUND RULES

![USAID logo]

NATIONAL SUPPLY CHAIN ASSESSMENT (NSCA)

Agenda & Objectives

May 8-11, 2018

Kampala, UGANDA

TRAINING AGENDA

Day 1	Day 2	Day 3	Day 4
About NSCA 2.0	KPIs introduction	• **Field testing!!**	• Further feedback from pilot
Tracer Commodities	KPI role play activity	• Feedback from pilot	• Preparing for real-life implementation
Supply Chain Mapping	NSCA timeline	• Importance of data quality	• Last questions
Tablet Introduction	NSCA Sample		• Final team assignments and packets
Introduction to CMM	Data collection – before you go, what to bring and methods		• Closing
CMM role play activity	Creating a hot spot		

6

TRAINING OBJECTIVES

✓ Understand the purpose of the supply chain assessment

✓ Ensure understanding of NSCA 2.0 objectives and methods

✓ Train data collectors on the implementation of the NSCA tool

✓ Ensure data collectors understand the tools used for

data collection

7

GENERAL PURPOSE OF NSCA 2.0

Performance Management
1. Measure supply chain capability, functionality and performance
2. Identify bottlenecks and gaps across the supply chain for improvement
3. Monitor the impact of specific supply chain improvement activities and/or investments

Planning Optimization
4. Inform country strategic planning, policy and management
5. Inform and guide supply chain country and donor investments

---

PURPOSE OF UGANDA'S NSCA 2.0

1. Provide a comprehensive view of Uganda's public sector pharmaceutical supply chain maturity and performance to

   inform further customization of interventions to directly address facility-level needs. (NMS- and JMS-supported sites)
2. Analyze and measure the performance and capability of the public sector supply chain.
3. Identify focus areas of opportunity for MOH planning and

   stakeholder coordination to inform the development of transformational plan(s) to guide system strengthening

   investments

USE OF UGANDA'S NSCA 2.0

1. Aligning partners work plans to address found gaps or bottlenecks.
2. Document current performance and share best practices from site to site.
3. Advocacy tool for further funding.
4. Inform Government of Uganda and stakeholder investments in the public health supply chain.
5. Inform strategic planning with regard to Medicines Policy, and the National Pharmaceutical Sector Strategic Plan III.

USAID

NATIONAL SUPPLY CHAIN ASSESSMENT (NSCA) Basics

May 8-11, 2018

Kampala, UGANDA

THE NSCA 2.0 HAS 3 ELEMENTS

1. Supply Chain Mapping
Develop a visual representation of the supply chain

2. Capability and Functionality Assessment
Measure the capability and functionality of a supply chain

3. Key Performance Indicators (KPIs)
Measure the performance of a health supply chain

1. SUPPLY CHAIN MAPPING

Manufacturer/Supplier

Central Warehouse

Regional Warehouses

Health Facilities

Patient | Patient

Flow of product
Flow of information
Electronic reporting, regulation

A first step in the assessment is the supply chain process mapping workshop.

This workshop maps the supply chain in the country, and provides stakeholders with a comprehensive picture of the public health supply chain before the data collection phase by capturing the flow of product and information through the supply chain. Participants share their perceptions of supply chain challenges.

CAPABILITY AND FUNCTIONALITY

The capability and functionality assessment is made up of questionnaires across 11 functional areas of the supply chain.

Each questionnaire, includes a supervisory interview to validate results and requires the validation of supporting documents.

Questions are binary to ensure objectivity – most are yes/no.

National
Supply Chain Assessment
V2.0
Hospital Sites

Date of Visit:	Day Month Year
Starting time:	Hour Minutes am/pm (circle one)
Finishing time	Hour Minutes am/pm (circle one)
Name(s) of Assessor(s)	

NSCA 2.0 Key Performance Indicators Detail

Category	Core KPI	Additional KPI
Forecasting	• Forecast accuracy • Source of funds	• Supply plan accuracy
Procurement	• Vendor on-time and in full delivery rate • Percent of international reference price paid	• Number of emergency orders placed on vendors, as a % of total orders placed • Supplier fill rate • Procurement methods employed • Percentage of product selection based on NEML • Customs clearance time
Warehousing and inventory management	•	• Stock turn per annum • • Cost of warehousing operation • Order turnaround time • % of incoming batches tested for quality • % of batches tested that meet quality standards
Distribution	•	• Cost of distribution operation
HR	•	• Percent of key positions vacant
Data and information	• Facility reporting rates on time	• Facility reporting rates (complete)

The tools evaluate supply chain capability, functionality and performance, plotting each functional area where these attributes intersect

High

How is the supply chain actually performing?

System Strengthening Efforts

KPIs

Performance

Forecasting

Product Selection

Waste Management

Warehousing

Procurement

What is the capability of the system to perform?

Transportation

Low

Low
Minimal

Capability & Functionality

High
Best Practice

Capability & Functionality Assessment

Expected outputs include a performance dashboard, analysis of results and a technical report with recommendations

Performance Dashboard | Capability & Performance Comparison | Range of Scores

Countries, NSCA Scope, & Year

Country	Scope	Year	Country	Scope	Year
Angola	Full Scale	2016	Lesotho	Snapshot	2013
Benin	Full Scale	2015	Mozambique	Full Scale	2014
Botswana	1.0 Pilot	2012	Namibia	Targeted	2013
Burma	Full Scale	2014	Nigeria	Full Scale	2014
Burundi	Full Scale	2014	Panama	Targeted	2013
Cote d'Ivoire	Full Scale	2014	Paraguay	1.0 Pilot	2012
DRC	Targeted	2014	Rwanda*	Full Scale 1.0, 2.0 Pilot	2013/5/7
Djibouti	Snapshot	2015	South Africa (Gauteng)	1.0 Pilot	2012
El Salvador	Targeted	2012	Uganda	1st Full Scale 2.0	Happening now!!
Eritrea	Snapshot	2014	Ukraine	Full Scale	2015
Guinea	Full Scale	2017	Zambia	2.0 Pilot	2017
Jamaica	Snapshot	2016			

NSCAs in BLUE were supported by the Global Fund

*Rwanda has implemented the NSCA three times.

19

NSCA – Tracer Commodities

5

Tracer Commodity Criteria

- Tracer List should be:
  - Fair representation of all Ministry of Health Programs
  - Should provide enough information for the MOH to make decisions
  - Represent a unique supply chain challenge
  - Represent unclear reporting channels resulting in critical challenges
  - Product should be available, at least to Health Centre III, according to Essential Medicines and Health Supplies List of Uganda (EMHSLU)

Tracer Commodity	Associated Program	Unit of Measure	Special Handling
Tenofovir/Lamivudine/Efavirenz 600/300/300	HIV	Bottle of 30 tabs	None
Male Condoms	RMNCAH	Condom	None
Malaria RDTs	Malaria & Lab	Test, normally in packs of 25	None
Long-lasting Insecticidal Nets	Malaria	Single LLIN	None
Rifampicin/INH/Pyrazinamide/Ethambutol 150/75/400/275 mg	TB	Bottle of 500	Cool, dry place, less than 25C
Depot Medroxyprogesterone Acetate Intra-muscular	RMNCAH & Family Health	Vial	20-25C - Cool storage, vials must be up-right
ORS + Zinc	RMNCAH	Sachet	None
Tetanus Toxoid	VMMC and RMNCAH	Vial	Cold storage 2-8C
Oxytocin International Units	RMNCAH	Vial	Cold storage 2-8C
ACTs (AL) 6x4	EMHS & Malaria	Packet	None
Amoxicillin 250mg Capsule	EMHS	Bottle of 1000 capsules	None
Metformin 500mg tablets	EMHS & NCD	Bottle of 100 tablets	Cold storage
Determine HIV RTK	HIV	Test normally in packs of 100	None

SUPPLY CHAIN MAPPING – Examples and output preliminary version for Uganda

SUPPLY CHAIN MAPPING
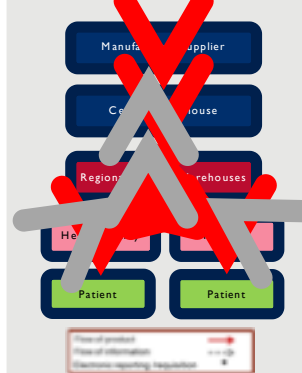
A first step in the assessment is the supply chain process mapping workshop.

This exercise aims to capture key stakeholders and the flow of products and information in the supply chain, to ensure an accurate picture of the public health supply chain(s) before the data collection phase.

Example Complex Supply Chain Map

Example Global to Patient Supply Chain Map

VERY Clear Example of a Unified Supply Chain Map

Example – Map of Parallel Supply Chains
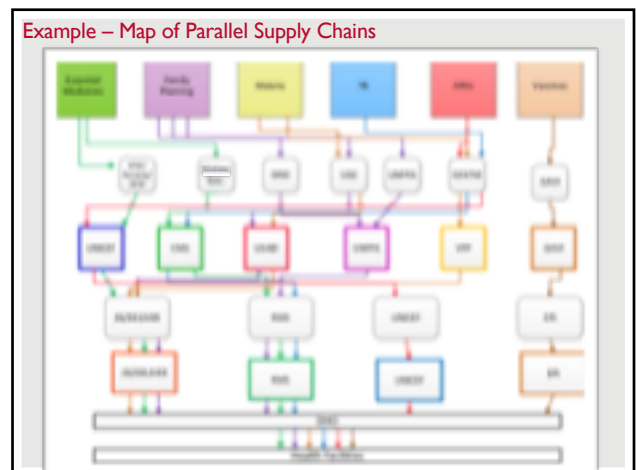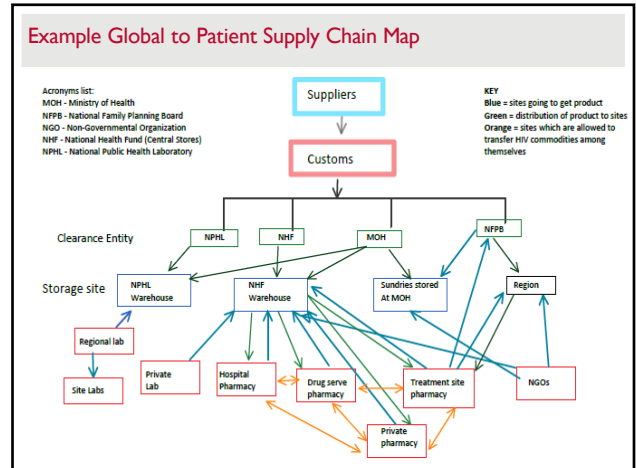
Uganda's Supply Chain Maps as of yesterday

■ III. INTRODUCTION TO THE DATA COLLECTION TABLET

- Using the tablet

The tablet will be used to collect the data at the peripheral, middle and Central levels of the supply chain.

Take the tablet and identify the following function buttons.

Light sensor

Front camera

Microphone for earphone

Touchscreen

Turn On/Off button

Main page button

Back button

Menu button
Microphone
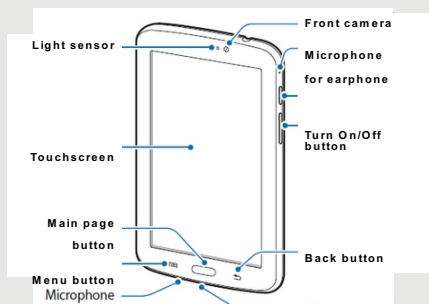
The tablet has a touch-screen, dragging your finger on the touchscreen lets you navigate and tapping your finger lets you select a function

Drag your finger to navigate

Tap the screen to select
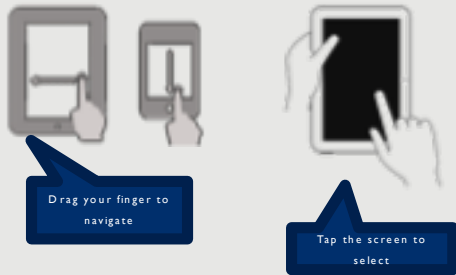
MAIN SCREEN –

available functions

To connect to the Wifi, select the *Setting*

icon present in your main screen

Tap on the Settings icon
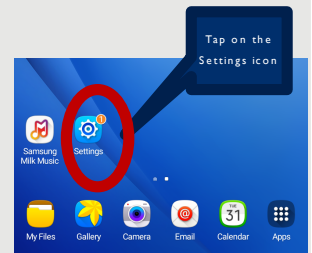
Drag the Wifi button to "ON" to activate the Wifi connection and select the network you want to connect to and enter the password
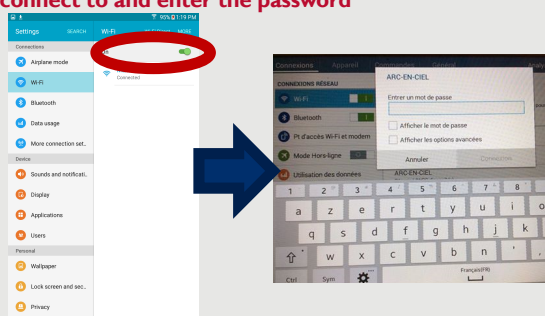
If necessary, you will be able to take photos of the archives with the tablet. In the main screen, select the Camera icon.

Select the camera icon by taping once
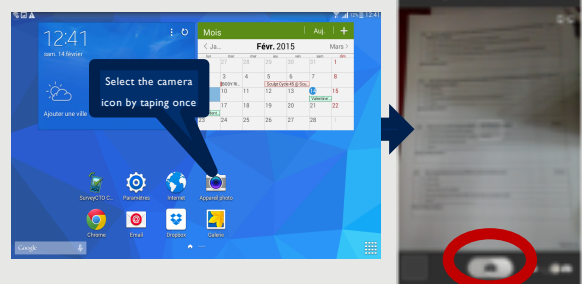
Camera – Please use!

- Photo of the week competition! With prizes!
- Different categories:
  - Best Practices (well-organized stores!)
  - Learning Opportunities (your choice!)
  - Actions shots (data collectors gettin' data!)
  - Documenting challenges (Flooded Roads, and more!)

You can also use the calculator.

Select the apps by tapping button

Select the calculator app
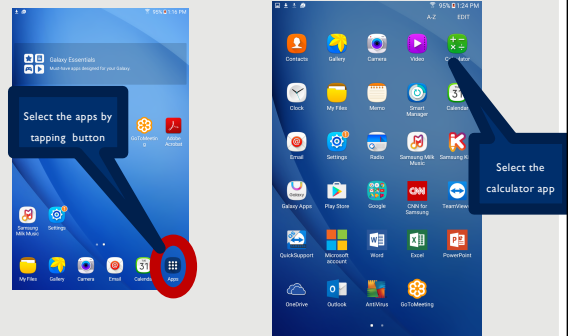
In order to extend the battery life, it is advised to shut off the tablet between use and make sure to charge it every night.

Switch off between use

Recharge **every night**
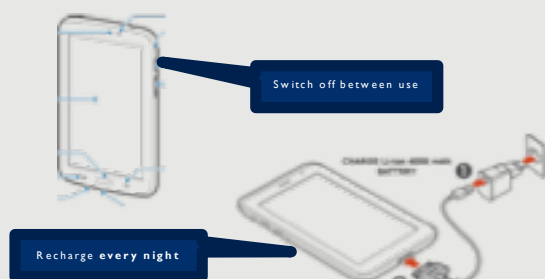
Caution is necessary: carefully store your tablet avoiding water contact and crashing it with heavier objects.

- Carefully store: always cover the screen of the tablet with the protective cover
- Do n**ot** crash
- Do **not** wet
- Do **not** download any apps
- Do **not** use for other purpose other than NSCA
- Do **not** touch the screen with a pen or other object
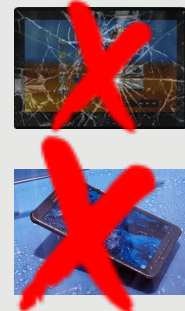
III. INTRODUCTION TO THE DATA COLLECTION TABLET
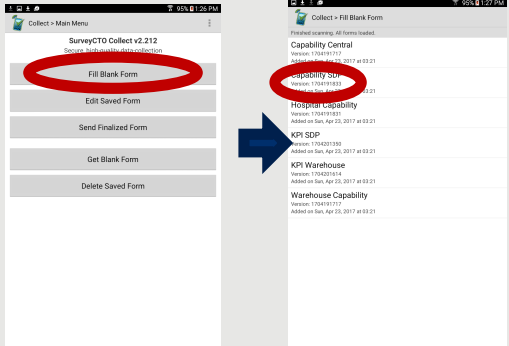
- Using CTO software
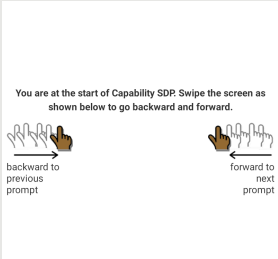
Open the CTO Survey app to start collecting data the data

Select the appropriate form for the type of center you are evaluating

Once you selected the form, drag your finger to THE RIGHT to start entering data in the tablet. You can go back at any time by swiping left.

You are at the start of Capability SDP. Swipe the screen as shown below to go backward and forward.

backward to previous prompt

forward to next prompt

Each form starts with general data about the facility you are visiting and an introduction

Start by selecting the facility/center you want to evaluate and his location

Once the facility is selected, information about the facility/center will automatically appear.

After selecting facility, capture the GPS coordinates of the center by clicking on the save the location coordinates button

Works better if you are outside to save the coordinates

Save the coordinates

The GPS coordinates of the center will appear in the general information of the site

PLEASE ENSURE that the geo-tracking coordinates appear on the page of the general information of the center.

NSCA – Capability Maturity Model

USAID | The Global Fund

CAPABILITY AND FUNCTIONALITY ASSESSMENT

The capability and functionality assessment is made up of questionnaires across 11 functional areas of the supply chain.

Each questionnaire, includes a supervisory interview to validate results and requires the validation of supporting documents.
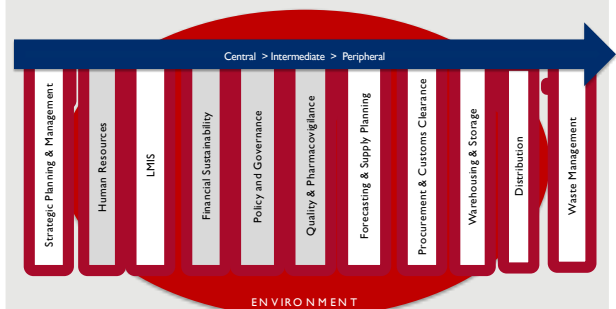
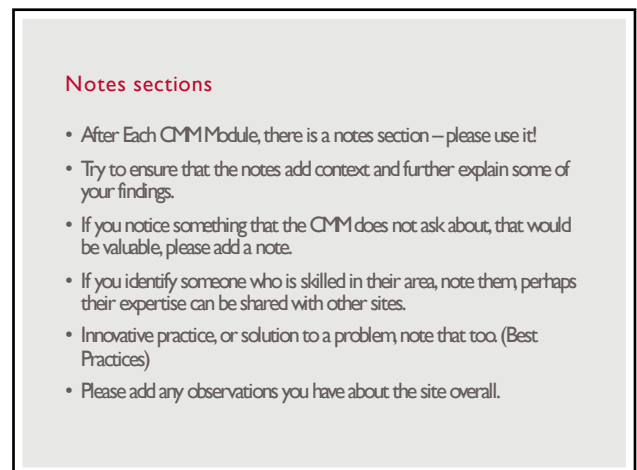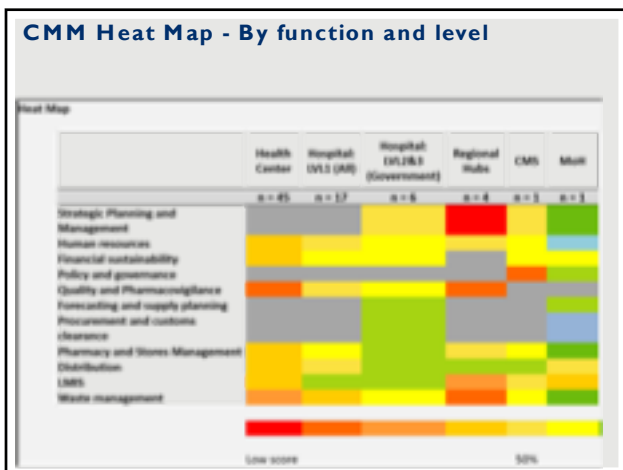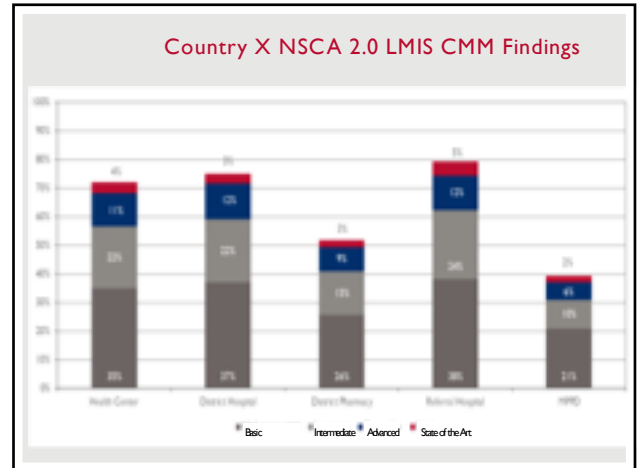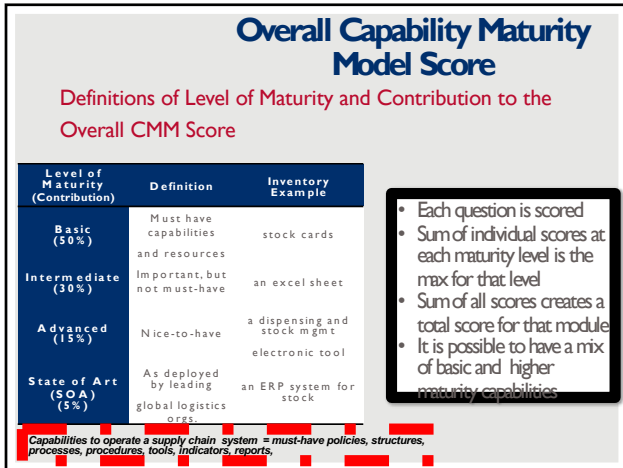An update to NSCA 2.0 is that all questions are binary to ensure objectivity.

National
Supply Chain Assessment
V2.0

Hospital Sites

Date of Visit:	Day Month Year
Starting time:	Hour Minutes am/pm (circle one)
Finishing time	Hour Minutes am/pm (circle one)
Name(s) of Assessor(s)	

CAPABILITY MATURITY MODEL

- Borrowed from the private sector.
  - Used for Software Development, Supply Chain, US Department of Defense
- Lochamy and McCormack developed, after seeing gaps in explanations for weak/strong performance.
- Originally, the CMM was divided into five levels (Ad hoc to Integrated).
- Refined now, for ease of data collection into binary questions, where questions are scored and weighted depending on their relative need to ensure functionality.
  - Most questions are yes/no.
- 11 modules (KPIs compliment each module).

NSCA 2.0 HAS 11 FUNCTIONAL AREAS THAT ARE MEASURED AS PART OF THE ASSESSMENT

Central > Intermediate > Peripheral

Strategic Planning & Management | Human Resources | LMIS | Financial Sustainability | Policy and Governance | Quality & Pharmacovigilance | Forecasting & Supply Planning | Procurement & Customs Clearance | Warehousing & Storage | Distribution | Waste Management

ENVIRONMENT

Slide 1

Overall Capability Maturity Model Score

Definitions of Level of Maturity and Contribution to the Overall CMM Score

Level of Maturity (Contribution)	Definition	Inventory Example
Basic (50%)	Must have capabilities and resources	stock cards
Intermediate (30%)	Important, but not must-have	an excel sheet
Advanced (15%)	Nice-to-have	a dispensing and stock mgmt electronic tool
State of Art (SOA) (5%)	As deployed by leading global logistics orgs.	an ERP system for stock

- Each question is scored
- Sum of individual scores at each maturity level is the max for that level
- Sum of all scores creates a total score for that module
- It is possible to have a mix of basic and higher maturity capabilities

Capabilities to operate a supply chain system = must-have policies, structures, processes, procedures, tools, indicators, reports,

Slide 2

Country X NSCA 2.0 LMIS CMM Findings

Legend: Basic · Intermediate · Advanced · State of the Art

Slide 3

CMM Heat Map - By function and level

	Health Center	Hospital LVL1 (All)	Hospital LVL1&3 (Government)	Regional Hubs	CMS	MoH
	n = 45	n = 17	n = 6	n = 4	n = 1	n = 1
Strategic Planning and Management						
Human resources						
Financial sustainability						
Policy and governance						
Quality and Pharmacovigilance						
Forecasting and supply planning						
Procurement and customs clearance						
Pharmacy and Stores Management						
Distribution						
LMIS						
Waste management						

Low score ... 50%

Slide 4

Notes sections

- After Each CMM Module, there is a notes section – please use it!
- Try to ensure that the notes add context and further explain some of your findings.
- If you notice something that the CMM does not ask about, that would be valuable, please add a note.
- If you identify someone who is skilled in their area, note them, perhaps their expertise can be shared with other sites.
- Innovative practice, or solution to a problem, note that too. (Best Practices)
- Please add any observations you have about the site overall.

Actor	Strategic Planning and Management	HR	LMIS	Financial Sustainability	Policy & Governance	Quality and Pharmacovigilance	Forecasting & Supply Planning	Procurement & Customs Clearance	Warehousing and Storage	Distribution	Waste Management
National Referral Hospital	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	no	Yes
Regional Referral Hospital	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	no	Yes
DHOs	no	Yes	no	no	Yes	no	no	no	no	no	no
Hospital	no	Yes	Yes	Yes	Yes	Yes	no	no	Yes	no	Yes
Health Center IV	no	Yes	Yes	Yes	Yes	Yes	no	no	Yes	no	Yes
Health Center III	no	Yes	Yes	Yes	Yes	Yes	no	no	Yes	no	Yes
Health Center II	no	Yes	Yes	Yes	Yes	Yes	no	no	Yes	no	Yes

Strategic Planning & Management - only at Regional/National Referral Hospitals

Who to talk to?

- **NATIONAL or REGIONAL REFERRAL HOSPITAL:** Interview the hospital director, if available. If not, interview the deputy hospital director or another person knowledgeable about overall supply chain management at the facility.
- **LOWER LEVEL SERVICE DELIVERY POINTS:** Not Applicable.

Rationale?

- Determine if all levels are aware of and utilizing an existing strategic plan (NPSSP III).
- Ensure that each level is monitoring their own performance in order to improve.

Validation?

Yes, interviewee will be asked to product the strategic plan and the DC will be added to quickly review to ensure it contains several components.

Human Resources – Everywhere!

- **REFERRAL HOSPITAL:** Interview the head of human resources for the hospital, if available. If not, interview the head of pharmacy or the storeroom, or another knowledgeable person
- **SERVICE DELIVERY POINTS:** Interview the facility head if available. If not, interview the deputy facility head or another knowledgeable person.

Rationale?

- Ensure that staff have the needed professional resources to support the supply chain.

Validation?

- Yes, recruitment policy, job descriptions, work force plan, staff development plan and supportive supervision guidelines.

Financial Sustainability – everywhere but DHOs

- **REFERRAL HOSPITAL:** Interview the hospital director if available. If not, interview the deputy hospital director, financial manager, or another knowledgeable person.
- **SERVICE DELIVERY POINTS:** Interview the facility head if available. If not, interview the accountant or another knowledgeable person.

Rationale?

- Ensure supply chain operations are sufficiently funded and to identify gaps if not.

Validation?

- Depending on responses, the data collector may ask to see financial records, costing strategies, and a cost sharing plan.

Logistics Management Information System (LMIS) – everywhere but DHOs

- **REFERRAL HOSPITAL:** Interview the storeroom manager if available. If not, interview the deputy storeroom manager, data/information systems manager, or another knowledgeable person.
- **SERVICE DELIVERY POINTS:** Interview the storeroom manager if available. If not, interview the deputy storeroom manager, data entry person, or another knowledgeable person.

Rationale?

- Ensure that the right tools and guides are in place to enable a site to order required product on-time.

Validation?

- SOPs/Guidelines for LMIS, evidence of LMIS performance monitoring and DQAs.

Policy & Governance – everywhere!

- **REFERRAL HOSPITAL:** Interview the hospital director, if available. If not, interview the deputy or another knowledgeable person.
- **SERVICE DELIVERY POINTS:** Interview the facility head if available. If not, interview another knowledgeable person.

Note: This module has **only a few questions about standard treatment guidelines (STGs) for service delivery points.**

Rationale?

- Ensure availability of STGs at all sites.

Validation?

- Supply chain guidelines and STGs

Quality & Pharmacovigilance – everywhere but DHOs

- **REFERRAL HOSPITAL:** Interview the head of pharmacy at the hospital, if available. If not, interview the head of the storeroom or another knowledgeable person.
- **SERVICE DELIVERY POINTS:** Interview the head of pharmacy at the facility, if available. If not, interview the head of the facility, head of the storeroom, or another knowledgeable person.

Relatively short!

Rationale?

- Ensure a resourced quality system for commodities

Validation?

- Product quality assurance guidelines, quarantine SOP,

Tools/SOPs for pharmacovigilance/quality assurance.

WHOOSH!

Forecasting & Supply Planning – only at Referral Hospitals

- **REFERRAL HOSPITAL:** Interview the head of forecasting and supply planning at the hospital, if available. If not, interview the head of hospital procurement or another knowledgeable person.
- **SERVICE DELIVERY POINTS:** N/A

Rationale

- Ensure forecasts are being done, utilizing quality data and sound methodologies, monitored frequently and ultimately informing procurement.

Validation?

- Forecasting SOPs, supply plans, evidence of performance monitoring.

NORTH POLE DEMAND PLANNING GROUP

"Of course demand is highly seasonal. Are you new?"

Procurement & Customs Clearance only at Referral Hospitals

Eeny, meeny, miny, mo...

With all three suppliers evenly matched on price, quality and technical expertise, Mark resorts to his last remaining selection tool.

Search ID: shhn51

- **REFERRAL HOSPITAL:** Interview the head of procurement at the hospital, if available. If not, interview the head of the hospital or another knowledgeable person.
- **SERVICE DELIVERY POINTS:** N/A

Rationale?

- Determine that procurements are done transparently and in accordance with best practices.

Validation?

- Procurement SOP, performance monitoring of vendors, evidence of a transparent procurement system.

Warehousing & Storage – everywhere but DHOs

- **REFERRAL HOSPITAL & SDP:** Interview the storeroom manager if available. If not, interview the deputy storeroom manager or another knowledgeable person.

***Note: For this module, you will be expected to **go to the storeroom(s)** and verify information during the interview.

*****This is the only module where verification will be done during the interview**, as opposed to at the end of the module.***

Rationale: Ensure pharmaceuticals are stored using method which ensure their quality for patients.

Waste Management - everywhere but DHOs

- **REFERRAL HOSPITAL & SDP:** Interview the storeroom manager or head of pharmacy at the hospital, if available. If not, interview another person knowledgeable about the waste management processes at the hospital.

Rationale?

- Guarantee that national waste management plan is being followed and that unusable products are quarantined.

Validation?

- SOPs,

CHEMICAL WASTE | HUMAN AND ANIMAL ANATOMICAL WASTE | SOLID OR SHARP MEDICAL WASTE | PLASTIC WASTE

NSCA ACTIVTY

CMM Role play

USAID

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USAID

NATIONAL SUPPLY CHAIN ASSESSMENT (NSCA)

DATA COLLECTION TRAINING

May 8-11, 2018

Kampala, UGANDA

NSCA – Key Performance Indicators

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Criteria for inclusion of additional KPIs

- Core KPIs are always done.
- Data must be available, uniform in definition and standardized in data collection.
- Data cannot be disparate – given time.
- Data from calculated metric must be actionable for performance improvement.
- Metric must be something GOU would recalculate, regularly.

Key Performance Indicators in Uganda NSCA

Category	Core KPI	Optional KPI
Forecasting	• Forecast accuracy • Source of funds	• Supply plan accuracy
Procurement	• Vendor on-time and in full delivery rate • Percent of international reference price paid	• Number of emergency orders placed on vendors, as a % of total orders placed • Supplier fill rate • Procurement methods employed • Percentage of product selection based on NEML
Warehousing and inventory management	• ▮▮▮▮▮▮▮▮▮▮▮ • ▮▮▮▮▮▮ • ▮▮▮▮▮▮▮ • ▮▮▮▮▮▮▮	• ▮▮▮▮▮▮▮▮▮▮ • ▮▮▮▮▮▮▮ • Cost of warehousing operation (TBD from Costing Studies at JMS and NMS) • Order lead time (order turn around time)
Distribution	• ▮▮▮▮▮▮▮▮▮ • ▮▮▮▮▮▮▮▮	• Cost of distribution operation (TBD from Costing Studies at JMS and NMS)
HR	• ▮▮▮▮▮▮	• Percent of key positions vacant
Data and information	• Facility reporting rates on time	• Facility reporting rates (complete)

Core KPIs done where?

Metric	Health Centre	DHO	Hospital	Regional Referral Hospital	National Referral Hospital
SATP	Yes	No	Yes	Yes	Yes
Stockout by tracer, by level	Yes	No	Yes	Yes	Yes
Stock accuracy	Yes	No	Yes	Yes	Yes
Order fill rate	Yes	No	Yes	Yes	Yes
Waste	Yes	No	Yes	Yes	Yes
On-time delivery	Yes	No	Yes	Yes	Yes
Emergency Orders	Yes	No	Yes	Yes	Yes
Staff turnover	Yes	Yes	Yes	Yes	Yes
Facility reporting rate	Yes	No	Yes	Yes	Yes

Optional KPIs done where?

Metric	Health Centre	DHO	Hospital	Regional Referral Hospital	National Referral Hospital
Supply Plan Accuracy	No	Yes	No	Yes	Yes
Emergency orders on vendors	No	No	No	Yes	Yes
Temperature Excursions	Yes	No	Yes	Yes	Yes
Stockout rate of >1 tracer	Yes	No	Yes	Yes	Yes

Data collection for KPIs

- No calculation on your part.
- Tablets will direct you to look for pieces of information, or ask questions for pieces of info.
- All calculation will be done after site-level data is submitted.
- Performance will not be linked to a site; there are no penalties.

KPIs Narrative Section

• Specifics

  – Note if you see Depo stored on its side.

  – Note if you see Oxytocin outside of cold chain.

  – Note if products are stored outside of the storeroom (hallways, etc.)

- NSCA Activity!

  KPI Role Play

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- Uganda NSCA Timeline

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NSCA Timeline

* Indicative timeline to accomplish the NSCA

| Develop terms of reference, organize the team. | Desk review, mobilize selected team | In country assessment | Analyze data & final report | Track performance |

Week 1 – Supply Chain Mapping and 4 day data collector training (NOW).
Week 2 – Data collection at all levels begins.
Week 3 – Data collection at all continues and concludes.
Week 4 – Stakeholder Outbrief (May 30) on preliminary findings presented

Estimated GF Transformational Plan Development timeline...

| NSCA report materials | Agree ambition levels and scope of work | Agree workstreams and operating model | Set-up Terms of Reference | Initiate transformation | Implement transformation |

The USAID NSCA 2.0 spans the Global Fund Supply Chain Diagnostic from Stage 1 to Mid Stage 6

The Global Fund – 7 Stage Supply Chain Diagnostic   Start of Transformation ▶

Develop ToR		Select/mobilize Supplier		Conduct Supply Chain Diagnostic			Develop Transform Project RFP	Select/mobilize Supplier	
❶	❷	❸	❹	❺	❻	❼			
Engage/ Desk	Develop ToR	Issue/ Assess	Mobilize Vendor	In-country / data	Analyze	Solution/ Plan	Develop	Issue/ Assess	Select/ Mobilize

Uganda – NSCA 2.0

1. Supply Chain Mapping
Develop a visual representation of the supply chain

2. Capability and Functionality Assessment
Measure the capability and functionality of a supply chain

3. Key Performance Indicators (KPIs)
Measure the performance of a health supply chain

- USAID NSCA 2.0 captures valuable supply chain data and seeks correlation of data and information
- Root Causes of the issues (opportunities) will require further deep dives
- Ultimate objective being to develop a collaborative transformational plan

---

Initial GPS coordinates – will be refined further

Data Collector Timeline

= Half of a day

District Health Office

Two hours =

Data Collector Timeline

Hospital

= One day

If you fall behind or get ahead, contact your team POC and tell them!

WhatsApp
Phone call
Text

One to 1.5 days =

Uganda NSCA Sample
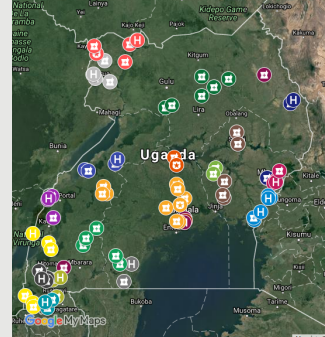
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Sample

Central Warehouse	2
Health Center II	31
Health Center III	31
Health Center IV	22
Hospitals	17
MoH or similar institution	3
DHOs	31
Regional Referral Hospital	8

A total of 145 sites.

*Districts were selected randomly, then sites within districts were randomly selected to be representative by level and nationally.

IV. DATA COLLECTION: HEALTH CENTRE & GENERAL HOSPITAL LEVEL

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Before Site-level Data collection – what to bring

- Introduction Letters, to be filled in by the team
- Extra paper copies of the forms, just in case something goes wrong with the tablet
- Copy of the letter sent to the site, informing them of inclusion
- A pen/pencil
- Chargers
- Always charge your tablet the night before
- Water

Before Site-level Data collection

- Check in with the District Health Office
  - Introductions
  - Describe NSCA
  - List facilities randomly selected
  - Request for a District person to accompany and assist the team.
- Pick up a colleague from the District Health Office
  - Safari Day Allowance
  - Mobile Money
  - 20,000 USH
  - Report name and the Safari Day Allowance will be sent upon return.
  - Use the forms provided to document the name/host name/SIM

At the SDP level:

- Introduce yourself – use the letters brought to assist
- Inform the site staff that you will collect data on the following areas:

HR	LMIS
Financial Sustainability	Policy & Governance
Quality & Pharmacovigilance	Waste Management
Warehousing & Storage	

- Ask for:
  - Stock Data for tracer commodities (day of visit as well as previous months)
  - Order data (over last 6 months)
  - Temperature excursion data (over last 6 months)
  - HR data (number of positions, number filled, number vacated)

Ask the manager for the following documents:

- ✓ Current month's inventory record (Stock card AND LMIS if available) and
- ✓ Monthly inventory records from November 2017 to April 2018 for the 13 tracer commodities
- ✓ LMIS records (order forms) from November 2017 to April 2018
- ✓ Temperature log
- ✓ Human resources data can be obtained by interview

STEP 2: Complete the questionnaire

STEP 3: Conduct interview with supervisor

- Each team will have to use the questionnaire as a guide
- Ask the questions to the interviewed persons and make the necessary remarks to confirm or refute their responses
- Ask additional questions if necessary to make sure to assess properly the maturity of the capacity
- Make sure not to skew the interview by simply asking specific and precise questions but ask open questions instead.

Initial question: What is the receipt of goods process in this establishment?

Response: The products are counted then the quantities are compared with the ones registered in the delivery note.

Additional question: How do you then register the received goods?
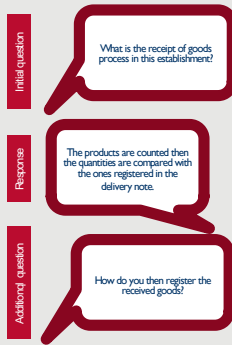
KEY CONSIDERATION:

Techniques to improve the responses during the interviews

- Repeat the question
- Pause and *pretend to expect* a more developed answer
- Use the prompts noted in the survey
- Rephrase the response. Make comments or ask neutral questions: "Nothing else?" "Is there another reason?" "Is there anything else to be added about this?"
- Gently ask questions about what you identify as inconsistencies, contractions or ambiguity

---

KEY CONSIDERATION:

How to address "I don't know" answers

- Use the prompts available
- Ensure that the respondent is the right person to answer this question – ask if he/she would like to defer to another colleague on-site.
- Include information at the end of each module if "I don't knows" were plentiful.

"We're wavering between 'Undecided' and 'no opinion.'"

KEY CONSIDERATION:

Interviews should be supported by direct/visual observations to confirm what has been said

- In addition to the interviews, the interviewers will have to make observations (of documents, infrastructure etc.) to confirm or refute the answers received.
- Each document which is mentioned in the questionnaire should be reviewed by the interviewers

There are several variables to be observed in each domain.

4. WAREHOUSING AND INVENTORY MANAGEMENT	
Capacity	Observations
Power supply	If the interviewed person declare that there is in the establishment a back up power supply like a back-up generator, ask to see the mentioned back-up generator
Conditions of the building	Inspect the building and how the established capacity standards are met.

STEP 4. When the questionnaire and interview is completed, form is filled in, press the "SAVE AND QUIT" button

You are at the end of Capability SDP.

Name this form
Capability SDP
☐ Mark form as final

Save Form and Exit

97

Changes can be made by clicking on "EDIT THE SAVED FORM"

Select the question you want to change.

When the changes are done, click on SAVE FORM AND EXIT.

Collect > Main Menu

SurveyCTO Collect v2.212
Secure, high-quality data-collection

Fill Blank Form

Edit Saved Form (1)

Send Finalized Form

Get Blank Form

Delete Saved Form

Collect > Capability SDP

District:
Kwong
Facility Name:
BIRAMBO CS-155
Facility Name: BIRAMBO CS-155
Facility Identifier: F29
Facility Type: Health Center
Level: District
Record the GPS location of the site
... Jump to Human Resources
... Jump to Logistics Information Management System
... Jump to Financial Sustainability
... Jump to Policy and Governance
... Jump to Forecasting and Supply Planning
... Jump to Quality and Pharmacovigilance
... Jump to Pharmacy Stores Management
... Jump to Distribution
... Jump to Waste Management
INTRODUCTION
This tool is used to conduct a National Supply Chain Assessment (NSCA) at the Service Delivery Point level with the aim of assessing the overall capability maturity and performance of a health supply chain. The information obtained from the NSCA will enables supply chain managers and implementing partners to monitor wether program activities are achieving their expected outcomes

Resume

Go Up   Go To Start   Go To End

STEP 5. Once the form is saved, click on the "SEND FINALIZED FORM." Select the form to be submitted, and press on "SEND THE SELECTION"

Collect > Main Menu

SurveyCTO Collect v2.212
Secure, high-quality data-collection

Fill Blank Form

Edit Saved Form (1)

Send Finalized Form

Get Blank Form

Delete Saved Form

Collect > Envoyer un formulaire finalisé
KPI 4: Upstream
Finalisé le Déc 14 févr., 2015 à 19:18

Submit the data every day after each visit of a center

Please note that submission of the data requires an internet connection.

Collect > Envoyer un formulaire finalisé

Résultats du chargement
KPI 4: Upstream - Succès

OK

IMPORTANT THINGS TO REMEMBER

At the end of each day, you will submit your collected data using the Survey CTO software.

IT IS VERY IMPORTANT.

101

Creating a Hotspot on your mobile phone to share internet access on tablet

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Creating a Hotspot on an Android Mobile Phone

- On the home screen navigate to Settings.

    - Swipe down from top of screen then select settings.

    - Or click on "Apps" and select "Settings"

Creating a Hotspot on an Android Mobile Phone cont'd

- Click on **Settings**
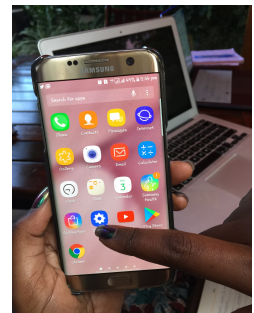
Creating a Hotspot on an Android Mobile Phone cont'd

- Click on **Connections**

Creating a Hotspot on an Android Mobile Phone cont'd

- Select **"Mobile Hotspot and Tethering"**
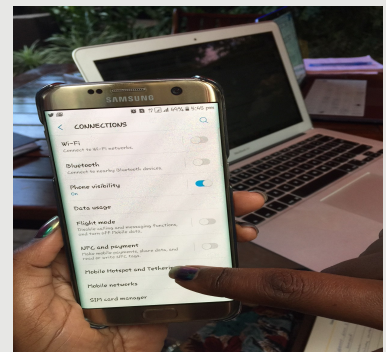
Creating a Hotspot on an Android Mobile Phone cont'd

- Drag **"Mobile Hotspot" button to "on" with blue light showing.**
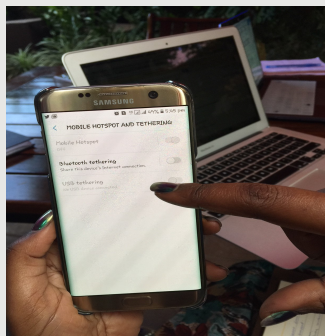
Creating a Hotspot on an Android Mobile Phone cont'd

- Hotspot successfully created!
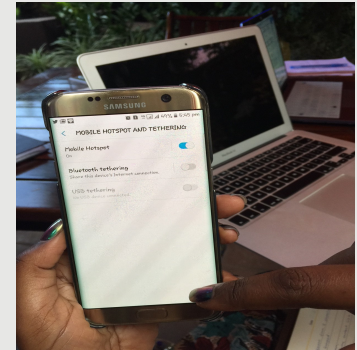
Connecting your Tablet to the Mobile Hotspot

- On your Tablet
  – Click on "Settings"
  – Click on Wifi
  – Select your mobile phone name on the Wifi list.
  – Voila! You are connected!!!

iPhone Personal Hotspotting

First, make sure
cellular data is
turned on…

iPhone Personal Hotspotting

Then turn on personal
hotspot…
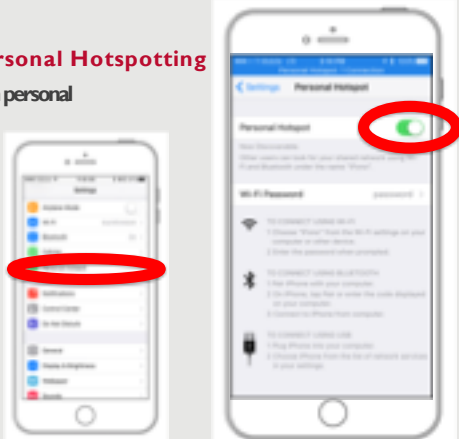
- Activity!

  Use of the tablets

  How to deal with an I don't know
  responses…

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Slide 1

VI. DATA COLLECTION:
CENTRAL LEVEL

- Data collection implementation

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Slide 2

Central Level Data Collection

- Data Collected on all 11 modules, across numerous institutions.
  - NDA, MOH, MOF, JMS, NMS, & the Medical Bureaus
- Amount of data is multiplied.
- CMM interview questions are more detailed, assuming more responsibility at the central level.
- Standards increase – what is "State of the Art" at a facility, may only be an intermediate capability at the central level
  - Ex: Excel spreadsheet used for inventory management at a health center is State of the Art, at the central level an excel sheet used for inventory management is an intermediate.
- More KPIs for each module.

Slide 3

Key Performance Indicators in Uganda NSCA

Category	Core KPI	Optional KPI
Forecasting	• Forecast accuracy • Source of funds	• Supply plan accuracy
Procurement	• Vendor on-time and in full delivery rate • Percent of international reference price paid	• Number of emergency orders placed on vendors, as a % of total orders placed • Supplier fill rate • Procurement methods employed • Percentage of product selection based on NEML
Warehousing and inventory management	• ████████████ • ████████████ • ████ • ██████████	• ████████████████ • ████ • Cost of warehousing operation (TBD from Costing Studies at JMS and NMS) • Order lead time (order turn around time)
Distribution	• ████████████ • ████████████	Cost of distribution operation (TBD from Costing Studies at JMS and NMS)
HR	• ████████████	• Percent of key positions vacant
Data and information	• Facility reporting rates on time	• Facility reporting rates (complete)

Slide 4

IMPORTANCE OF DATA QUALITY

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HOW TO ENSURE STRONG DATA COLLECTION

- Prepare before site visit
- Ensure full familiarity and understanding of NSCA processes and tools before the visit. If you are not sure, don't hesitate to ask questions.
  - Use the What'sApp group, liberally
  - Contact your POC whenever
- Validate responses – make sure information recorded is accurate
- Collect tangible data, materials, information to back up the answers provided
- Be observant
- If the responses doesn't seem right, respectfully inquire further
- If you don't understand the response, inquire further
- **Take pictures!**
- **Take notes!**

117

Best Practices for data collection

- Contact the site you are planning to visit the day before the visit, so they expect you.
- Do not give away answers – always report what the interviewee says.
  - Even if you know they are wrong
  - Even if you see they are wrong
- Always add narrative notes in the final question of the module to represent what you saw, especially if it contradicts the responses.
- Try to capture any success stories that you see, or best practices that could be shared across the system.
- Check in on What'sApp, daily.
  - Document sites completed
  - Any challenges with tomorrow's sites
  - Any concerns, delays, or if you are ahead.
  - Encourage each other!

118

FIELD PRACTICE

- Practice
- Debrief

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FIELD TEST DEBRIEF

- What went well?

- What challenges did you face? Consider challenges in each of the following areas:
  - ✓ Questionnaire
  - ✓ Supervisor interviews
  - ✓ Background information collection
  - ✓ Use of tablet
  - ✓ Others?

- How did you overcome the challenges?

- Key learnings and considerations for the future

120

IX. PREPARING FOR REAL-LIFE IMPLEMETATION

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IMPORTANT THINGS TO REMEMBER

At the end of each day, you will submit your collected data using the Survey CTO software.

IT IS VERY IMPORTANT.

122

The teams should have the following documents and materials:

	Documents or Materials	# of copies
1	List of the sites to be visited and the team structure	1 for each team
2	Paper Copies of the Questionnaire	1 each site
3	Contact information for DHOs and Sites to be visited	**1 each**
4	KPIs	1 for each site
5	Data Collectors Checklist	1
6	Safari allowance forms	1
7	Training materials	1 for each data collector
8	List of the tracer products	1
9	Points of Contact list for each team	1
10	Tablet	2
11	Battery charger	2
12	Power adapter	2

123

X. CLOSING

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Parking lot and Report out!

Asante Sana!

Eyalama!

Thank you!

Apoyo!

Awadiffo!

Mwebale!

1. National Supply Chain Assessment 2.0

SUPPLY CHAIN MAPPING WORKSHOP

May 7, 2018

Welcome and Remarks

-Morrise Seru, Ministry of Health

Uganda NSCA 2.0 Agenda

- Background & Purpose

- Experience

- Supply Chain Maps

- Capability Maturity Model (CMM)

- Key Performance Indicators

- Tracer Commodities

- Preparations for Uganda

- Mapping Activity with feedback

- Timeline

- Sampling

- CMM Activity with Tablets

NSCA 2.0 BACKGROUND & PURPOSE

Harriet Akello, Ministry of Health

NSCA 2.0 – Sources

Compass   EVM   MER

LIAT   NSCA   LSAT

SLICE   EUV   SIMS

GENERAL PURPOSE OF NSCA 2.0

Performance Management
1. Measure supply chain capability, functionality and performance
2. Identify bottlenecks and gaps across the supply chain for improvement
3. Monitor the impact of specific supply chain improvement activities and/or investments

Planning Optimization
4. Inform country strategic planning, policy and management
5. Inform and guide supply chain country and donor investments

PURPOSE OF UGANDA'S NSCA 2.0

1. Provide a comprehensive view of Uganda's public sector pharmaceutical supply chain maturity and performance to inform further customization of interventions to directly address facility-level needs. (NMS- and JMS-supported sites)
2. Analyze and measure the performance and capability of the public sector supply chain.
3. Identify focus areas of opportunity for MOH planning and stakeholder coordination to inform the development of transformational plan(s) to guide system strengthening investments

USE OF UGANDA'S NSCA 2.0

1. Aligning partners work plans to address gaps or bottlenecks found.
2. Document current performance and share best practices from site to site.
3. Advocacy tool for further funding.
4. Inform Government of Uganda and stakeholder investments in the public health supply chain.
5. Inform strategic planning with regard to Medicines Policy, and the National Pharmaceutical Sector Strategic Plan III.

NSCA 2.0 Experience

Paul Okware, National Medical Stores

THE NSCA 2.0 HAS 3 PARTS
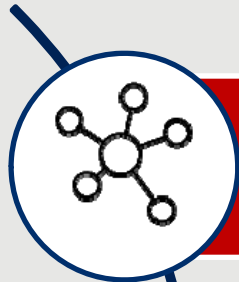
1. Supply Chain Mapping
   Develop a visual representation of the supply chain
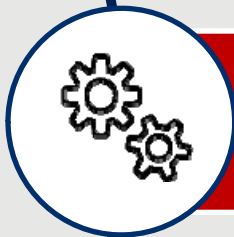
2. Capability and Functionality Assessment
   Measure the capability and functionality of a supply chain

3. Key Performance Indicators (KPIs)
   Measure the performance of a health supply chain

Countries, NSCA Scope, & Year

Country	Scope	Year	Country	Scope	Year
Angola	Full Scale	2016	*Lesotho*	*Snapshot*	*2013*
Benin	Full Scale	2015	Mozambique	Full Scale	2014
Botswana	1.0 Pilot	2012	Namibia	Targeted	2013
Burma	Full Scale	2014	Nigeria	Full Scale	2014
Burundi	Full Scale	2014	Panama	Targeted	2013
Cote d'Ivoire	Full Scale	2014	Paraguay	1.0 Pilot	2012
DRC	Targeted	2014	Rwanda*	Full Scale 1.0, 2.0 Pilot	2013/5/7
Djibouti	*Snapshot*	*2015*	South Africa (Gauteng)	1.0 Pilot	2012
El Salvador	Targeted	2012	Uganda	1st Full Scale 2.0	Happening now!!
Eritrea	*Snapshot*	*2014*	Ukraine	Full Scale	2015
Guinea	Full Scale	2017	Zambia	2.0 Pilot	2017
Jamaica	Snapshot	2016			

NSCAs in *BLUE* were supported by the Global Fund
*Rwanda has implemented the NSCA three times.

11

NSCA – Supply Chain Maps

Joanita Lwanyaga, Joint Medical Store

SUPPLY CHAIN MAPPING
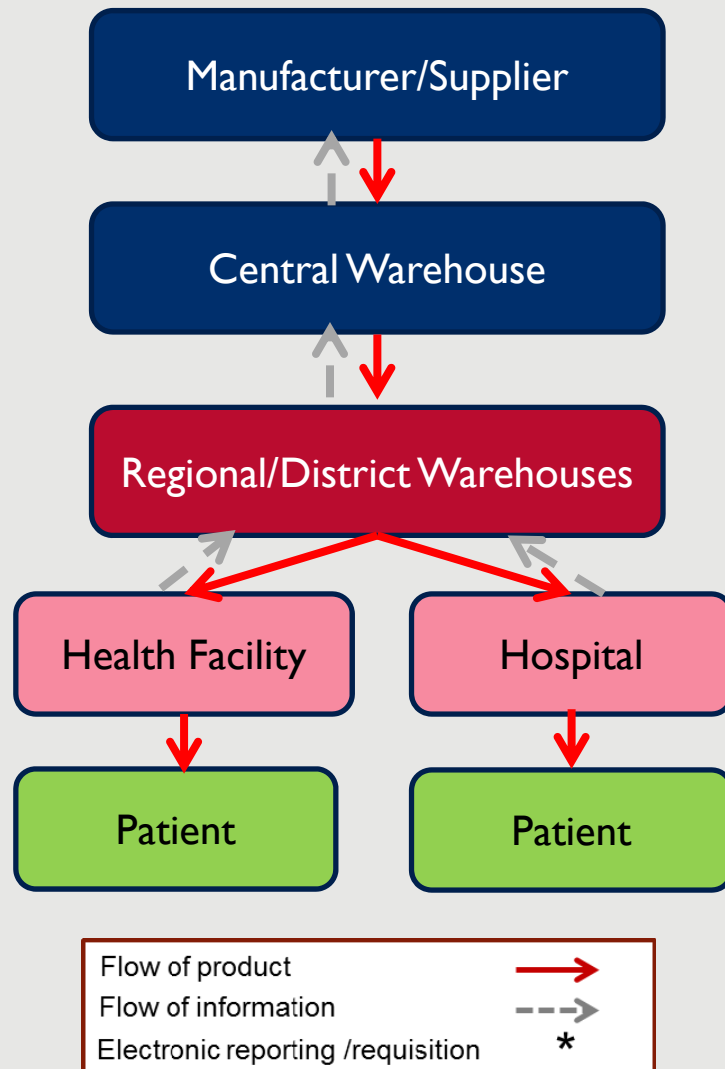
A first step in the assessment is the supply chain process mapping workshop.

This exercise aims to capture key stakeholders and the flow of products and information in the supply chain, to ensure an accurate picture of the public health supply chain(s) before the data collection phase.

SUPPLY CHAIN MAPPING

Now, let's see some different examples of supply chain maps…

Example Complex Supply Chain Map
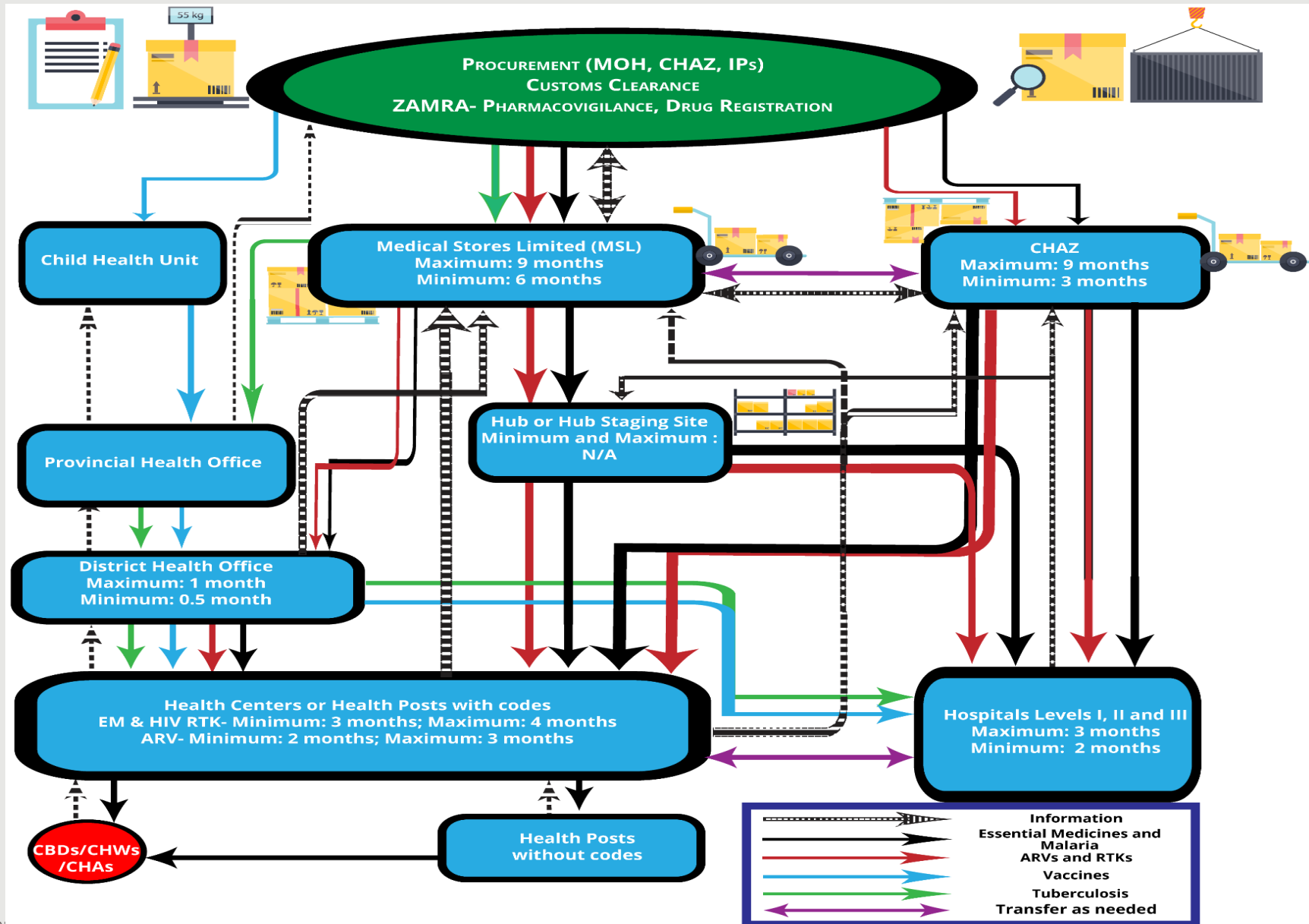
Example Global to Patient Supply Chain Map

Acronyms list:
MOH - Ministry of Health
NFPB - National Family Planning Board
NGO - Non-Governmental Organization
NHF - National Health Fund (Central Stores)
NPHL - National Public Health Laboratory

KEY
Blue = sites going to get product
Green = distribution of product to sites
Orange = sites which are allowed to transfer HIV commodities among themselves

Suppliers

Customs

Clearance Entity

NPHL   NHF   MOH   NFPB

Storage site

NPHL Warehouse   NHF Warehouse   Sundries stored At MOH   Region

Regional lab

Site Labs   Private Lab   Hospital Pharmacy   Drug serve pharmacy   Treatment site pharmacy   NGOs

Private pharmacy
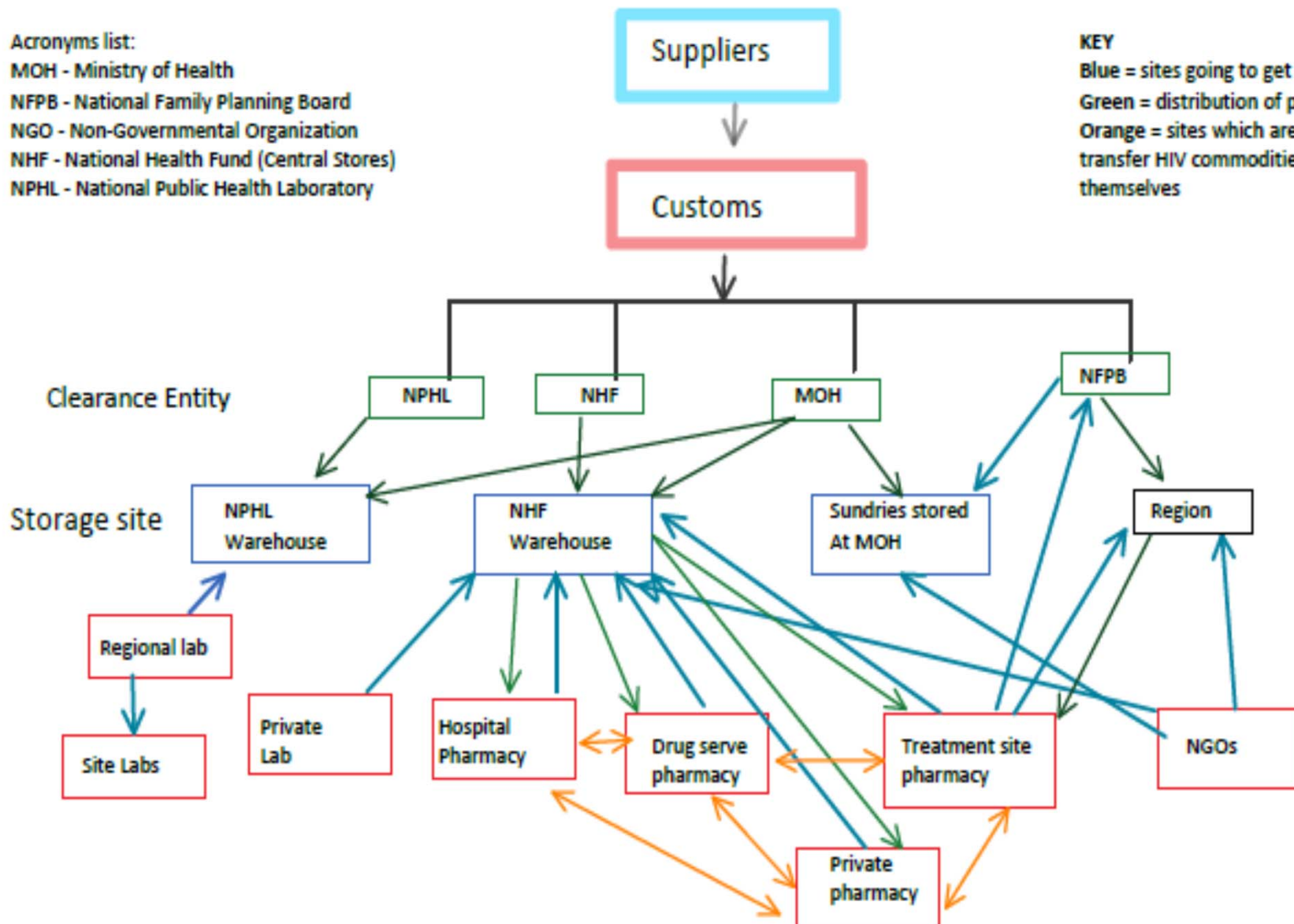
VERY Clear Example of a Unified Supply Chain Map
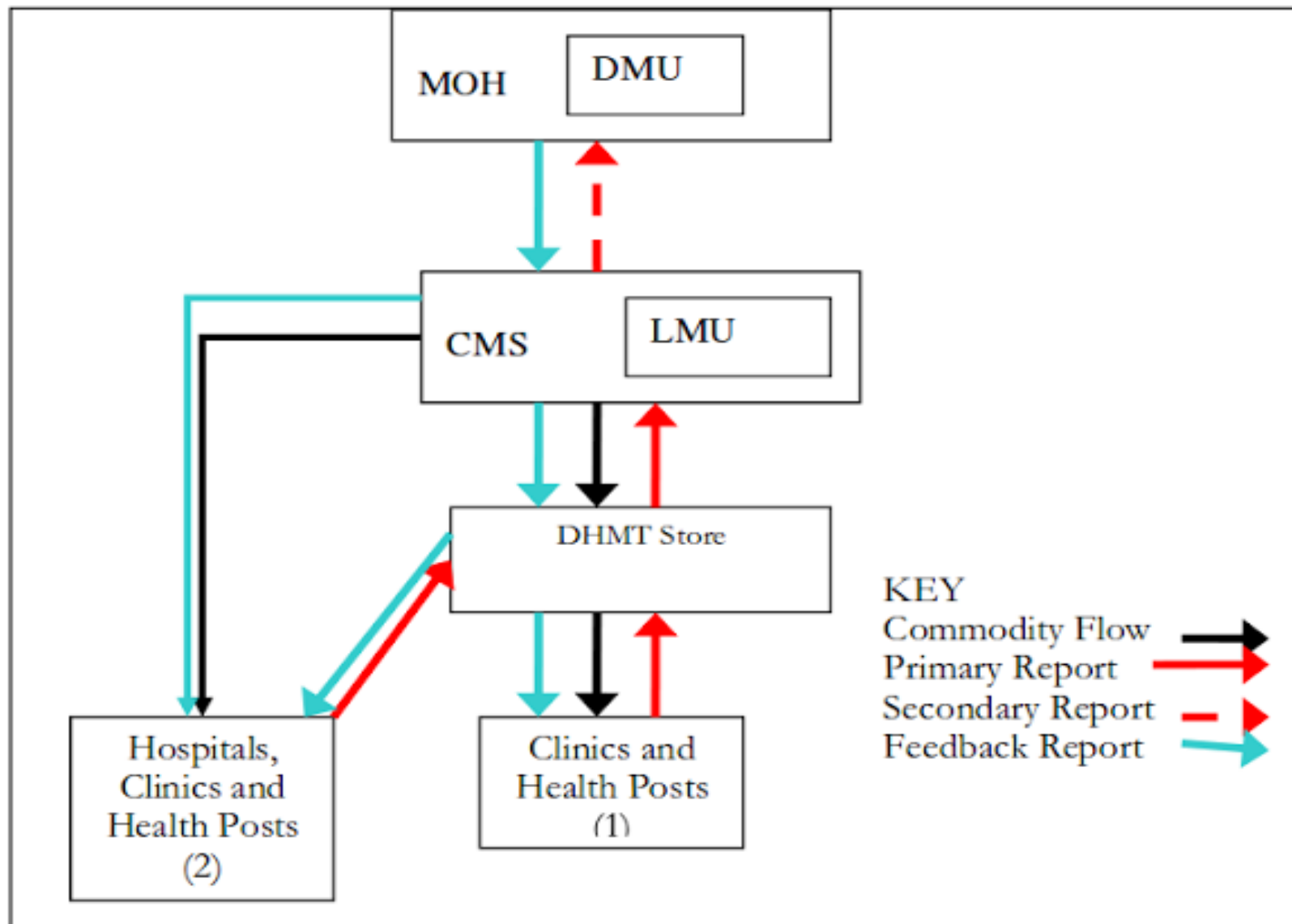
Example – Map of Parallel Supply Chains
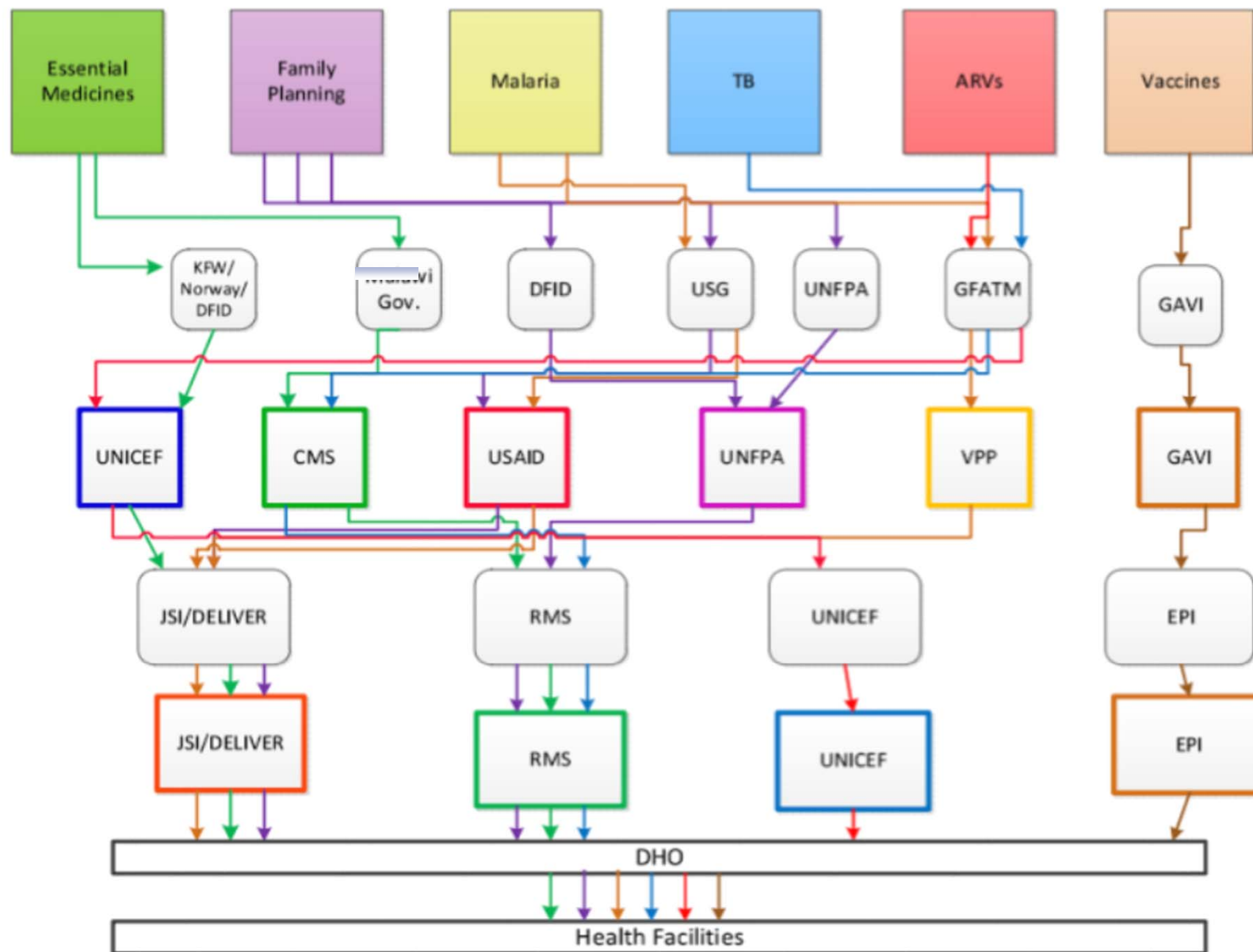
NSCA – Capability Maturity Model

Dr. Noah Kafumbe, USAID/Washington

CAPABILITY AND FUNCTIONALITY ASSESSMENT

The capability and functionality assessment is made up of questionnaires across 11 functional areas of the supply chain.

Each questionnaire, includes a supervisory interview to validate results and requires the validation of supporting documents.

An update to NSCA 2.0 is that all questions are binary to ensure objectivity.

**National
Supply Chain Assessment
V2.0**

Hospital Sites

Date of Visit:	[__|__] [__|__] [__|__|__|__] Day Month Year
Starting time:	[__|__] [__|__] am/pm *(circle one)* Hour Minutes
Finishing time	[__|__] [__|__] am/pm *(circle one)* Hour Minutes
Name(s) of Assessor(s)	

CAPABILITY MATURITY MODEL

- Borrowed from the private sector.

  – Used for Software Development, Supply Chain, US Department of Defense

- Lochamy and McCormack developed, after seeing gaps in explanations for weak/strong performance.

- Originally, the CMM was divided into five levels.

- Refined now, for ease of data collection into binary questions, where questions are scored and weighted depending on their relative need to ensure functionality.

- 11 modules (KPIs compliment each module).

NSCA 2.0 HAS 11 FUNCTIONAL AREAS THAT ARE MEASURED AS PART OF THE ASSESSMENT

Central > Intermediate > Peripheral

Strategic Planning & Management

Human Resources

LMIS

Financial Sustainability

Policy and Governance

Quality & Pharmacovigilance

Forecasting & Supply Planning

Procurement & Customs Clearance

Warehousing & Storage

Distribution

Waste Management

ENVIRONMENT

22

Overall Capability Maturity Model Score

Definitions of Level of Maturity and Contribution to the Overall CMM Score

Level of Maturity (Contribution)	Definition	Inventory Example
Basic (50%)	Must have capabilities and resources	stock cards
Intermediate (30%)	Important, but not must-have	an excel sheet
Advanced (15%)	Nice-to-have	a dispensing and stock mgmt electronic tool
State of Art (SOA) (5%)	As deployed by leading global logistics orgs.	an ERP system for stock

- Each question is scored
- Sum of individual scores at each maturity level is the max for that level
- Sum of all scores creates a total score for that module
- It is possible to have a mix of basic and higher maturity capabilities

Capabilities to operate a supply chain system = must-have policies, structures, processes, procedures, tools, indicators, reports,

Country X NSCA 2.0 LMIS CMM Findings

CMM Heat Map - By function and level

Heat Map	Health Center	Hospital: LVL1 (All)	Hospital: LVL2&3 (Government)	Regional Hubs	CMS	MoH
	n = 45	n = 17	n = 6	n = 4	n = 1	n = 1
Strategic Planning and Management						
Human resources						
Financial sustainability						
Policy and governance						
Quality and Pharmacovigilance						
Forecasting and supply planning						
Procurement and customs clearance						
Pharmacy and Stores Management						
Distribution						
LMIS						
Waste management						
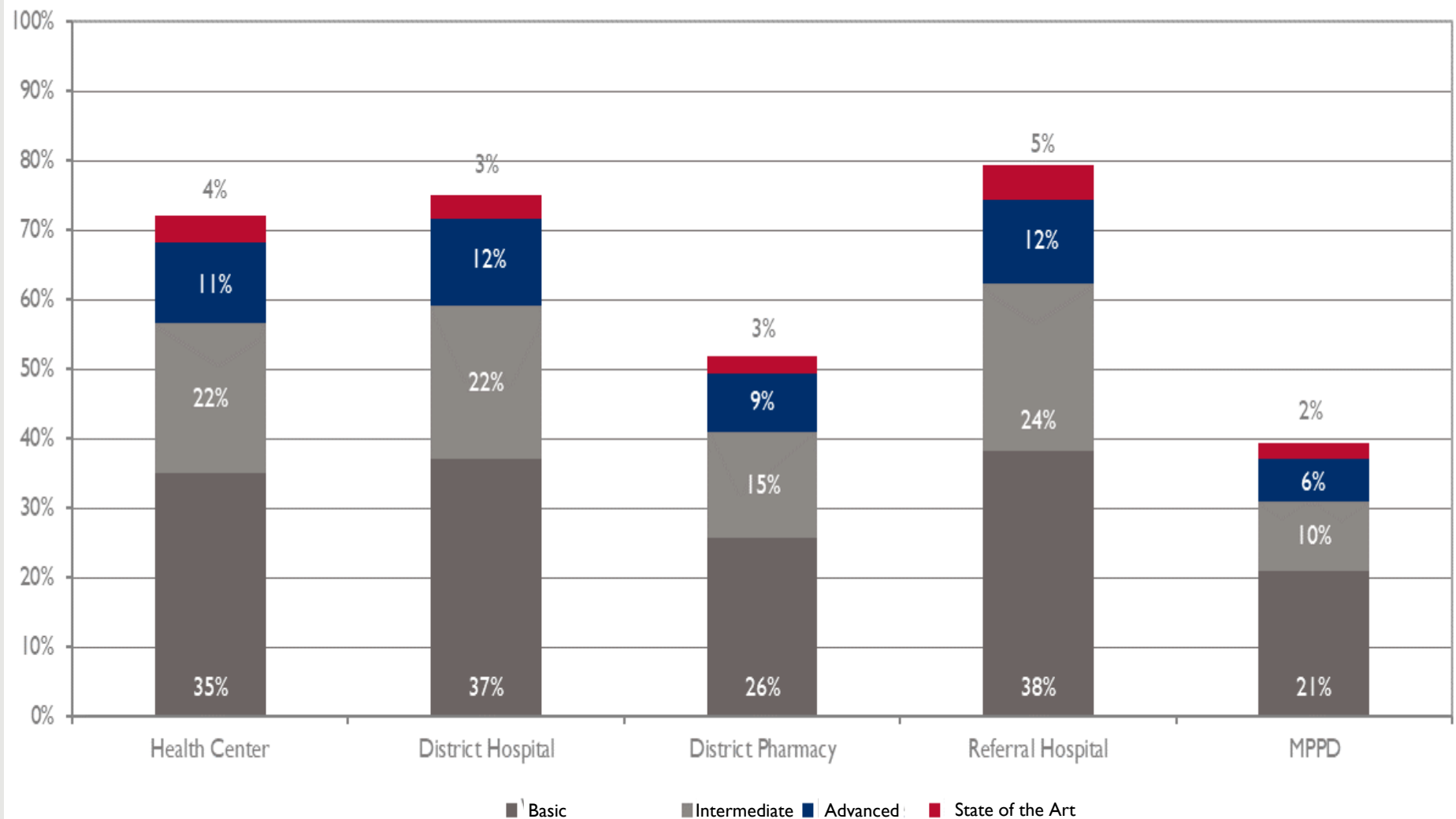
Low score   50%

NSCA – Key Performance Indicators

Meaghan Douglas, USAID/Washington

Criteria for inclusion of additional KPIs

- Core KPIs are always done.

- Data must be available, uniform in definition and standardized in data collection.

- Data cannot be disparate – given time.

- Data from calculated metric must be actionable for performance improvement.

- Metric must be something GOU would recalculate, regularly.

Key Performance Indicators in Uganda NSCA

Category	Core KPI	Optional KPI
Forecasting	• Forecast accuracy • Source of funds	• Supply plan accuracy
Procurement	• Vendor on-time and in full delivery rate • Percent of international reference price paid	• Number of emergency orders placed on vendors, as a % of total orders placed • Supplier fill rate • Procurement methods employed • Percentage of product selection based on NEML
Warehousing and inventory management	• **Stocked according to plan** • **Stockout rate by tracer commodity by level in the system** • **Stock accuracy** • **Order fill rate** • **Wastage from damage, theft and expiry**	• **Number and duration of temperature excursions in cold storage facility** • **Stockout rate of one or more tracer products by facility** • Cost of warehousing operation (TBD from Costing Studies at JMS and NMS)
Distribution	• **On-time delivery to facility** • **Percentage of orders placed by health facilities as emergency orders**	Cost of distribution operation (TBD from Costing Studies at JMS and NMS)
HR	• **Staff turnover rate**	• Percent of key positions vacant
Data and information	• Facility reporting rates on time	• Facility reporting rates (complete)

28

Bold-Underline= Facility KPIs

NSCA – Tracer Commodities

Harriet Akello, Ministry of Health

Tracer Commodity Criteria

- Tracer List should be:

  - Fair representation of all Ministry of Health Programs

  - Should provide enough information for the MOH to make decisions

  - Represent a unique supply chain challenge

  - Represent unclear reporting channels resulting in critical challenges

  - Product should be available, at least to Health Centre III, according to Essential Medicines and Health Supplies List of Uganda (EMHSLU)

TRACER COMMODITIES

Commodity	Associated Program	Unit of Measure	Special Handling
Tenofovir/Lamivudine/Efavirenz 600/300/300	HIV	Bottle of 30 tabs	None
Male Condoms	RMNCAH	Condom	None
Malaria RDTs	Malaria & Lab	Test, normally in packs of 25	None
Long-lasting Insecticidal Nets	Malaria	Single LLIN	None
Rifampicin/INH/Pyrazinamide/Ethambutol 150/75/400/275 mg	TB	Bottle of 500	Cool, dry place, less than 25C
Depot Medroxyprogesterone Acetate Intra-muscular	RMNCAH & Family Health	Vial	20-25C - Cool storage, vials must be up-right
ORS + Zinc	RMNCAH	Sachet	None
Tetanus Toxoid	VMMC and RMNCAH	Vial	Cold storage 2-8C
Oxytocin International Units	RMNCAH	Vial	Cold storage 2-8C
ACTs (AL) 6x4	EMHS & Malaria	Packet	None
Amoxicillin 250mg Capsule	EMHS	Bottle of 1000 capsules	None
Metformin 500mg tablets	EMHS & NCD	Bottle of 100 tablets	Cold storage
Determine HIV RTK	HIV	Test normally in packs of 100	None

Uganda NSCA Preparation

Joanita Lwanyaga, Joint Medical Store

NSCA Preparation

- SOW was finalized engaging:

  - Ministry of Health

  - USAID/Washington and Uganda Mission

  - Global Fund

  - UHSC/MSH

  - Stakeholder Meeting on December 20, 2017

- Selection of implementers traveling for Uganda NSCA from:

  - USAID/Washington and Uganda Mission

  - GHSC-PSM

  - Global Fund

  - NMS & JMS

  - Ministry of Health

NSCA Preparation

NSCA Preparation

- NSCA International Training on revised tool including: NMS, JMS, MOH and USAID colleagues

- Additional days to identify key central level respondents AND tailored questions for Uganda

  - Ex: Changing Supply Chain Strategic Plan to "National Pharmaceutical Sector Strategic Plan III"

THE REPUBLIC OF UGANDA
MINISTRY OF HEALTH

NATIONAL PHARMACEUTICAL SECTOR STRATEGIC PLAN III

2015–2020

NSCA Preparation

- Review of the randomly sampled sites to ensure data collection teams are geographically grouped and that sites are accessible.

- Shortlist data collectors for sampled sites

- Develop presentation and data collector training slides

- Review of all pertinent background information
  - National Pharmaceutical Sector Strategic Plan III and associated costing report
  - National Medicines Policy
  - Health Management Information System Vol. 1
  - USAID-MOH Implementation Letters

- Finalize local logistics

- Cross-country exchange of NSCA experiences – Rwanda, Cote d'Ivoire, Eritrea, Jamaica, Nigeria, Zambia

II. SUPPLY CHAIN MAPPING STAKEHOLDER GROUPS DISCUSSION GUIDE

Paul Okware, National Medical Stores

Discuss the product and information flows within the supply chain(s) and create a supply chain map

Manufacturer/Supplier

Central Warehouse?

Regional/District Warehouses?

Health Facility?   Hospital?

Patient?   Patient?

Flow of product →
Flow of information ---→
Electronic reporting /requisition *
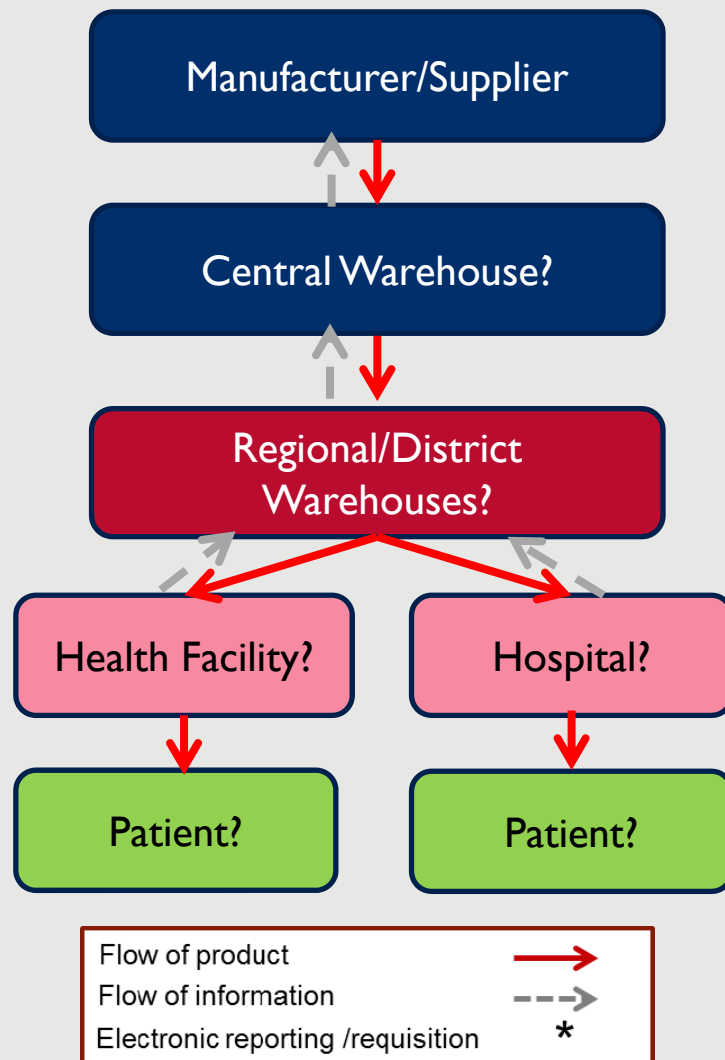
- Where do products enter the country?

- What are the points of storage (CMS, regional warehouse, Provincial/District warehouse, etc.)

- How are products transported (staff at lower warehouse collects, 3rd party provider, etc.)

- How frequently are shipments received?

- Min/Max

- What is the flow of information (both up & down the chain)?
  - Requisitions
  - LMIS reports
  - Electronic or paper-based?

- Identify key strengths, weaknesses, opportunities and threats

- Discuss finances/budgets and policies that impact the supply chain

GROUP WORK: Supply Chain Mapping

- **Draw a map of the supply chain in Uganda**

- **Be sure to include the following in your map**
  – Where do products enter the country? Does this look different for different supply chain programs? (Stakeholders for all levels)
  – What are the points of storage (Central, Intermediate warehouse, health facilities etc.)
  – Who are the players at various levels of the SC?
  – How are products transported (staff at lower warehouse collects, 3rd party provider, etc.)
  – How frequently are shipments received or collected? Does it differ by product type?
  – Min/Max levels at each type of site? Do they differ by product type?
  – What is the flow of information (both up & down the chain)?
    - Requisitions
    - LMIS reports
    - Electronic or paper-based?

Take 15 minutes to draw your map…

throw a spanner
in the works

SPANNER!!!

SPANNER!!!

GROUP WORK Cont'd

- Is the Map of the SC similar for all donor supported programs in Uganda? (Malaria, RMNCAH, HIV/AIDS, Nutrition, Vaccines, EMHS, TB, Lab, etc)
- Is there a different system for emergency orders?
- Is there a different system for specific products?
- What about financial flow?

- **Please address the following supply chain questions**
  - Identify key strengths, weaknesses, opportunities and threats
  - Discuss tracer commodities
  - Discuss any recommendations you feel might improve the system.

III. SUPPLY CHAIN MAPPING GROUPS FEEDBACK/VALIDATION

Meaghan Douglas, USAID/Washington

II. Uganda NSCA Timeline

Martin Ellis, GHSC-PSM Consultant

NSCA Timeline

* Indicative timeline to accomplish the NSCA

12 weeks   *3 weeks*   *4 weeks*   *8 -12 weeks*

Develop terms of reference, organize the team. → **Desk review, mobilize selected team** → **In country assessment** → **Analyze data & final report** → **Track performance**

Week 1 – Supply Chain Mapping (NOW!) and 4 day data collector training.
Week 2 – Data collection at all levels begins.
Week 3 – Data collection at all continues and concludes.
Week 4 – Stakeholder Outbrief (May 30) on preliminary findings presented

Estimated GF Transformational Plan Development timeline…

NSCA report materials → **Agree ambition levels and scope of work** → **Agree workstreams and operating model** → **Set-up Terms of Reference** → **Initiate transformation** → **Implement transformation**

The USAID NSCA 2.0 spans the Global Fund Supply Chain Diagnostic from Stage 1 to Mid Stage 6

The Global Fund – 7 Stage Supply Chain Diagnostic   **Start of Transformation** ▶

Uganda – NSCA 2.0
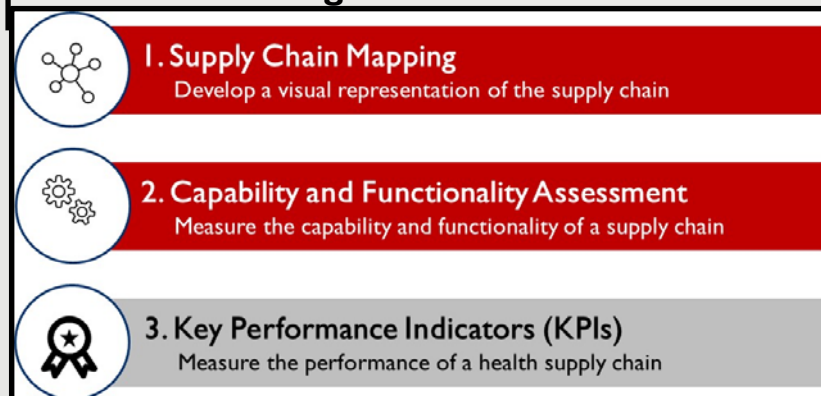
1. **Supply Chain Mapping**
   Develop a visual representation of the supply chain

2. **Capability and Functionality Assessment**
   Measure the capability and functionality of a supply chain

3. **Key Performance Indicators (KPIs)**
   Measure the performance of a health supply chain

- USAID NSCA 2.0 captures valuable supply chain data and seeks correlation of data and information
- Root Causes of the issues (opportunities) will require further deep dives
- Ultimate objective being to develop a collaborative transformational plan

II. Uganda NSCA Sample

Dr. Ben Johns, Abt Associates

Sample

Central Warehouse	2
Health Center II	31
Health Center III	31
Health Center IV	22
Hospitals	17
MoH or similar institution	3
DHOs	31
Regional Referral Hospital	8

A total of 145 sites.

*Districts were selected randomly, then sites within districts were randomly selected to be representative by level and nationally.

Referral Hospital Selected

District Selected

The tablet will be used to collect the data at the peripheral, middle and Central levels of the supply chain.

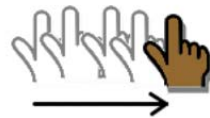**Open the CTO Survey app to start collecting data the data**

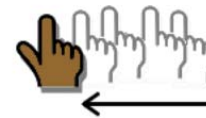# Select the appropriate form for the type of center you are evaluating

Once you selected the form, drag your finger to THE RIGHT to start entering data in the tablet. You can go back at any time by swiping left.

You are at the start of Capability SDP. Swipe the screen as shown below to go backward and forward.

backward to
previous
prompt

forward to
next
prompt

Parking lot and Report out

Asante Sana!

Eyalama!

Thank you!

Apoyo!

Awadiffo!

Mwebale!

Uganda's National Supply Chain Assessment
Supply Chain Mapping Workshop
May 7, 2018

Title	Timing
Opening Remarks - Introductions - Opening Remarks - Housekeeping issues	8:30 – 9:00
Purpose of the National Supply Chain Assessment (NSCA)	9:00-9:15
About the NSCA - Supply Chain Mapping - Review of different maps	9:15 – 9:30
Capability Maturity Model - Origin, Design, Modules & Methods for data display	9:30-10:15
Key Performance Indicators - Complete list, Criteria for inclusion & list of KPIs for Uganda NSCA	10:15-10:30
Tea Break	10:30-10:45
Review of Tracer Commodities - Criteria for inclusion & Final List of Tracers	10:45-11:00
Preparation for NSCA in Uganda	11:00 - 11:15
Activity One – Reviewing CMM questionnaires with tablets	11:15-12:00
After Activity CMM Discussion	12:00-12:30
Lunch	12:30-1:30
Activity Two – Small Group Work to Develop the Uganda Supply Chain Map	1:30 to 3:00

Out-brief on each Map	3:00 to 4:00
NSCA Timeline	4:00-4:10
NSCA Sampling in Uganda	4:10-4:20
Debrief from the Day and Parking Lot Questions	4:20 – 5:00

UGANDA NATIONAL SUPPLY CHAIN ASSESSMENT (NSCA)

SUPPLY CHAIN MAPPING WORKSHOP - 7 MAY 2018

	NAME	POSITION TITLE	INSTITUTION	EMAIL
ATTENDED				
1	Morries Seru	Acting Assistant Commissioner/Pharmacy Department	Ministry of Health (MOH)/Pharmacy Department (PD)	serumorries@gmail.com
2	Harriet Akello	Senior Pharmacist	MOH/PD - NSCA POC	harakello@gmail.com
3	Thomas Obua Ocwa	Senior Pharmacist	MOH/PD	obthoc@gmail.com
4	Jakira Ambrose	Tech Officer	National TB and Leprosy Program (NTLP)	ajakira@msh.org
5	Joanita Lwanyaga	Director Customer Care	Joint Medical Stores (JMS) - NSCA POC	JoanitaN@jms.co.ug
6	Paul Okware	Head of Stores	National Medical Stores (NMS) - NSCA POC	pokware@nms.go.ug
7	Dr Patrick Kerchan	Program Manager	Uganda Protestant Medical Bureau (UPMB)	pkerchan@upmb.co.ug
8	Denis Kibira	Director	Coalition for Health Promotion and Social Development (HEPS)	dkibira@heps.or.ug
9	Dr Jacinta Apio	Pharmacist	St Mary's Hospital Lacor	joyelah.329@gmail.com
10	Mawadri Charlse Onigo	District Pharmacist	Adjumani Hospital	onigomc@gmail.com
11	Vicky Nyombi	Senior Pharmacist	Mulago National Referral Hospital	Nyombi.vicky@yahoo.com
12	Timothy Kabonero	Pharmacist	Masaka RRH	tim.kabonero@gmail.com
13	Pito Jjemba	Supply Chain Management Specialist	Centers for Disease Control (CDC)/Uganda	ybk3@cdc.gov
14	Suzan Nakawunde	Supply Chain Management Specialist	USAID/Uganda	snakawunde@usaid.gov
15	Suzie Jacinthe	Health Development Officer	USAID/Uganda	sjacinthe@usaid.gov
16	Bradley Barker	Supply Chain Advisor	USAID/Uganda	bbarker@usaid.gov
17	Norbert Mubiru	Programme Management Specialist/Civil Society-Community	USAID/Uganda - NSCA POC	nmubiru@usaid.gov
18	Meaghan Douglas	Supply Chain M&E Technical Advisor	USAID/Washington - NSCA POC	medouglas@usaid.gov
19	Annika Gerken	Administrative Assistant	USAID/Washington - NSCA POC	agerken@usaid.gov
20	Noah Kafumbe	Commodities and Supply Chain Advisor	USAID/Washington - NSCA POC	nkafumbe@usaid.gov
21	Clarice Johnson	Financial Budget Analyst	USAID/Washington - NSCA POC	clajohnson@usaid.gov
22	Dr. Ben Johns	Senior Scientist	Abt Associates - NSCA POC	ben_johns@abtassoc.com
23	Martin Ellis	Consultant	GHSC-PSM/Washington - NSCA POC	martin.ellis@optimisedoperations.com
24	Kathryn MacAulay	Senior Consultant/Digital Strategy Practice	USAID GHSC-PSM/Washington - NSCA POC	kmacaulay@ghsc-psm.org
25	Mohamad Khalid	Country Director	USAID GHSC-PSM/Uganda	KMohammed@ghsc-psm.org
26	Joyce Achan	M&E	USAID GHSC-PSM/Uganda	jachan@ghsc-psm.org
27	Dennis Girardot	Resident Advisor - Uganda	U.S. Department of Treasury	Dennis.Girardot@otatreas.us
28	Jon Blasco	Supply & Logistics Manager	UNICEF	jblasco@unicef.org
29	Lawrence Were	Reproductive Health Commodity Security Coordinator	UNFPA	were@unfpa.org
30	Nancy Miriam Amony	Supply Chain Advisor	USAID UHSC	namony@uhsc.ug
31	John Obicho	Supply Chain Advisor	USAID Regional Health Integration To Enhance Services/Southwest (RHITES SW)	jobicho@pedaids.org
32	Peter Niwagaba	Supply Chain Advisor	USAID RHITES (EC)	pniwagaba@urc-chs.com
33	Amy Boore		CDC	
34	Dr Flavia Mpanga Kaggwa	Health Specialist	UNICEF	0772244345 / fmpanga@unicef.org
35	Florence Nampijja		Global Fund	florence@globalfundccm.org.ug
36	Anthony Kirunda		USAID/UHSC	akirunda@uhsc.ug
37	Olivia Kiwanuka	Logistics Consultant	GHSC/PSM	okiwanuka@gmail.com
DELEGATE				
	Jimmy Ameny	Procurement Specialist	MOH/GAVI	
	Andrew Kiberu	Supply Chain Advisor	Infectious Disease Institute (IDI)	akiberu@idi.co.ug
DECLINED				
	Dr. Opar Bernard	Acting Assistant Commissioner/Expanded Immunization Program (EPI)	MOH/Programs	bopato@gmail.com
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	William Olum	Senior Pharmacist	Jinja Regional Referral Hospital (RRH)	pjathim@gmail.com
	Samwel Wasike	Supply Chain Management Specialist	Centers for Disease Control (CDC)/Uganda	hnp0@cdc.gov
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	Rita Nakigudde	Health Advisor	DFID	r-nakigudde@dfid.gov.uk
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	Juliet Kyokuhaire		MoFPED	juliet.kyokuhaire@finance.go.ug
	Paulo Kyama		Focal Coordination Office (FCO)	
	Patrick Kagaba		Focal Coordination Office (FCO)	
	Phellister Nakamya		Global Fund	
	Dr. David Ivan Kamya	District Health Officer in Kiruhura/SW	Head of District Health Officers (DHO)	ivankamya@yahoo.co.uk
	Joseph Mwoga	Supply Chain Advisor	World Health Organization (WHO)	mwogaj@who.int

CMM Modules – Document Reviews Required	
Module	**Documents Reviewed**
1. Strategic Planning and Management **Approximately** 2 hours	• Supply Chain Strategic Plan • Stakeholder Map • Monitoring of Implementation Plan • Roles and Responsibilities RACI/Org Chart • Implementation Plan Budget • Performance Monitoring Plan • Risk Mitigation Plan • PPP (Public, Private Partnership) Meeting Record / Agreements
2. Human Resources **Approximately** 2 hours	• HR workforce plan (document to project workforce needs) • Job descriptions with appropriate qualifications • Staff development (capacity building) plan for current employees • Database to keep track of staff • Documents surrounding supportive supervision
3. Financial Sustainability **Approximately** 2 hours	• Cost sharing plan with donors • Funding strategy – for example, as part of an overall business plan/strategic plan • Supply Chain operational costs (financial statements)
4. Policy and Governance **Approximately** 2 hours	• Management Policies for Supply Chain Management • Copy of the Standard Treatment Guideline • Copy of the National Medicines Policy • Have guidelines prepared in relation to Supply Chain (Annual Good Distribution Guidelines) • Strategic Plan and Annual Workplan • Strategic Plan and Annual Workplan
5. Quality and Pharmacovilance Approximately 1-2 hours	• A formally approved Medicine Quality Assurance Strategy • A Quality Assurance manual, • Certificates of Analysis for International and domestic sources, • An approved Pharmacovigilance strategy, • Data collection tools for pharmacovigilance,

	- Standard operating procedures for medicine quality assurance, and - Standard operating procedures (SOPs) for pharmacovigilance
6. Forecasting and Supply Planning **Approximately** 4 hours	- Standard operating procedures for forecasting - A copy of the computation of the forecast accuracy - A copy of the supply plan, - procedure for collecting the data for the supply plan, - Procedure for adjusting and updating the supply plan, - Documentation of the most recent data sources, methodologies and assumptions
7. Procurement and Customs Clearance Approximately 24 hours (come and go) **Who**: Minimum of 2 people required for this interview: - One who knows capability of the procurement unit - One who knows the procurement data.	- Standard operating procedures (SOPs) for procurement - A copy of a prequalification document, - A copy of a database for vendor information - Copies of communication6 to vendors sharing feedback after the qualification process is completed, - A copy of a tender document - Copies of notifications to both successful AND unsuccessful bidders after procurement evaluations - Copies of purchase orders - Copies of communication to vendors about vendor performance results - Copies of a documented appeals process - Copies of insurance covers taken for products in transit - A copy of a policy or guidelines for customs clearance - Procurement manual
8. Warehousing and Storage Approximately 24 hours (come and go) **Who:** Someone who can pull eLMIS data and the WMIS as well as assist in a physical count	- Copies of Standard Operating Procedures (SOPs) for operations of the Warehouse - Any repair and maintenance plan for equipment in the Warehouse

9. Distribution Approximately 8 hours for CMM Approximately 1 hour for the distribution data	• Verify the existence of an approved distribution plan and SoPs • Copies of previous distribution plans • Minutes from distribution meetings for review of distribution routes at least annually (or more often) • Copies of communication of health facilities about the distribution plan • Copies of POD records • Documents regarding any supply chain indicators regularly tracked for transportation operations
10. Logistics Management Info Systems **Approximately** 2 hours	• Policies that guide the paper LMIS • Policies that guide the eLMIS • SOPs for paper and electronic LMIS • Documents related to data quality assessments
11. Waste Management Approximately 2 hours for CMM **Who:** Interviewed data collectors who serve as Provincial chief pharmacists. At HQ someone at the Pharmacy Unit is best Loss KPI could take longer, depending on if they destroy	• SOPs for waste management/disposal • Destruction certificates