

**USAID KENYA SUPPLY CHAIN SYSTEMS
STRENGTHENING ACTIVITY**

**KENYA SUPPLY CHAIN SYSTEMS
STRENGTHENING**

BASELINE ASSESSMENT REPORT

DECEMBER 10, 2016

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ACRONYMS

ACT	artemisinin-based combination therapy
AL	artemether lumefantrine
ARV	antiretroviral
BMGF	Bill and Melinda Gates Foundation
CDC	Centre for Disease Control
CEC	county executive committee
COH	chief officer of health
CHAI	Clinton Health Access Initiative
CMEP	country monitoring and evaluation plan
CS	commodity security
CSL	commodities security and logistics
DAR	daily activity register
DFH	Department of Family Health
EMMS	essential medicine and medical supplies
FCDRR	facility consumption data request and reporting
FP	family planning
GHSC	global health supply chain
GFATM	Global Fund for AIDS, Tuberculosis and Malaria
HIV/AIDS	human immunodeficiency virus/ acquired immune deficiency syndrome
IDIQ	indefinite delivery indefinite quantity contract
IUD	intrauterine device
MDAWG	market development approaches working group
MIS	management information systems
M&E	monitoring and evaluation
MNH	maternal and newborn healthcare
MOS	months of stock
NASCOP	National AIDS and STI Control Program

NCAHU	Newborn Child and Adolescent Health Unit
NMCP	National Malaria Control Program
PEPFAR	President’s Emergency Plan for AIDS Relief
PMI	President’s Malaria Initiative
PPB	Pharmacy and Poisons Board
PRH	population and reproductive health
PSM	procurement and supply management
QA/QC	quality assurance/quality control
RDC	regional distribution center
RDT	rapid diagnostic test
RFP	request for proposal
RTK	rapid test kits
RHGATG	Reproductive Health Global Advisory Traceability Group
RHSC	Reproductive Health Supplies Coalition
RHMSU	Reproductive Health & Maternal Services Unit
RMNCAH	Reproductive Maternal Newborn Child & Adolescent Health
SCMS	supply chain management system
SCOR©	Supply Chain Operations Reference Model
SDP	service delivery point
SOP	standard operating procedure
TA	technical assistance
TO	task order
TWG	technical working group
UNFPA	United Nations Population Fund
USAID	United States Agency for International Development
USG	United States Government
VMMC	voluntary medical male circumcision

EXECUTIVE SUMMARY

This document contains the baseline assessment report for the Kenya Supply Chain Systems Strengthening (KSCSS) project under the Global Health Supply Chain-Procurement and Supply Management (GHSC-PSM) project. The baseline report serves as a tool for establishing the situation prior to project interventions and will be used to gauge progress against planned activities. The baseline will contribute towards refining the indicators in the monitoring, evaluation and learning (MEAL) plan. The baseline report provides a snapshot of the status quo by examining the six pillars of a functioning pharmaceutical supply chain system that the project bases its interventions on:

- i. Leadership and governance – entails interventions to strengthen structures at national and county levels;
- ii. Financing – entails the development of strategic plans and mobilization of additional source of funds for health commodities;
- iii. Human Resources for Health (HRH) – defines workforce loss ratios, supply chain functions and capacity building initiatives;
- iv. Service delivery – addresses supply chain leakages, availability of commodities, quality of care, and rational drug use;
- v. Health products – addresses commodity selection issues, availability when required, quality assurance and pharmacovigilance; and
- vi. Information – reviews end-to-end data visibility, data quality elements and availability of data and information for decision making.

Alongside these pillars, an essential element of an effective supply chain management system is a robust monitoring, evaluation and learning (MEL) system. The baseline assessment ensures that the project and key counterparts have access to timely, and accurate information to benchmark project performance at the onset and to manage expectations based on the scope of the project activities. This will be primarily guided by the project results framework that shows the hierarchy of results that will achieve KSCSS's goal and objectives.

The baseline assessment was conducted at two levels: national and county. At national level, the assessment targeted established supply chain mechanisms and their associated technical organizations. These included Kenya Medical Supplies Authority (KEMSA), National Malaria Control Program (NMCP), National AIDS and STI Control Program (NASCO), Division of Family Health (DFP), Newborn Child and Adolescent Health Unit (NCAHU) and the Reproductive Maternal Health Services Unit (RMHSU). KEMSA is the local USAID-mandated warehousing and supply chain solutions provider with presence at national and regional/county levels; NMCP is the government agency responsible for coordinating malaria management issues.

NASCOP and DFH with its sub functional components NCAHU and RMHSU are responsible for coordinating reproductive health and family planning issues.

The baseline data was collected using pre-determined questionnaire to the county and facility officials which was then synthesized and aggregated, with quantitative data being analyzed to depict current situations and qualitative data assessed in a descriptive manner. At county level, the assessment targeted the county commodity management technical leadership, including the County Director of Health (CDH) and the County Pharmacist. Five health facilities per county were assessed on elements of commodity supply chain systems for both malaria and FP/RMNCAH commodities as applicable. Counties assessed for malaria commodities included the Western region and the lake endemic zones that included Kisumu, Homa Bay, Migori, Siaya, Busia, Bungoma, Kakamega and Vihiga counties. Counties assessed for FP/RMNCAH were Baringo, Samburu and Turkana counties.

Results from the baseline assessment indicated the lack of a comprehensive strategic document to guide national level health sector supply chain management. The national organizations are still utilizing pre-devolution supply chain strategies that are now incompatible with the current state of health sector devolution. However, there is a move towards tailoring existing strategies to respond to devolution. For example, KEMSA is implementing aspects of commodity risk management, NASCOP implementing mechanisms to empower counties on supply chain management at county level through training and establishing commodity management technical working groups (TWGs) and DFH considering a revision of its strategy to address post devolution issues. It was also found out that the national agencies already have established standard operating procedures (SOPs) within their current supply chain strategies and/or guidelines. NASCOP's SOPs have all been incorporated in their supply chain guidelines, while DFH have their SOPs and guidelines embedded in the RH Commodity Management Strategy 2012. However, NMCP does not have written guidelines and SOPs for the various supply chain functions.

Agencies also acknowledged having their own commodity TWGs, and also as members of the larger national TWG. KEMSA has its internal TWG as well and membership on the national Commodity Security Working group. NASCOP has a larger internal Commodity Security Committee within it, but has respective TWGs for the different commodities under its docket. DFH has a taskforce in place that attempts to address the glaring weaknesses in MNH commodity security at county level where it has no presence at the moment. NMCP on the other hand has a Case Management Technical Working Group (TWG) under which the drug management sub-committee falls. The drug management sub-committee is responsible for procurement and supply management for malaria commodities.

At the county level, oversight on malaria program activities in the 8 endemic counties is done by the county malaria Technical Working Group (TWG) led by the County Malaria Coordinator. Some of the TWGs are inactive and others are not necessarily focusing on malaria commodities exclusively. All the three FP/RMNCAH focus counties (Baringo, Samburu and Turkana) have

county commodity security TWGs in place with previous support from Global Fund but are currently inactive. Most supply chain functions are undertaken regularly by county and facility staff, but external assistance is required in aspects like storage infrastructure, redistribution of excess items, orientation of peripheral facilities in DHIS reporting and upward transmission of reports.

On human resources for health, management of malaria commodities was done mainly by pharmacists and pharmaceutical technologists at county and sub county hospitals and nursing staff at the health centers and dispensaries. None of the three FP/RMNCAH counties had a HRH strategy and current staffing especially in key supply chain positions was below the recommended norms and standards.

In service delivery: 17 of 41 facilities visited in malaria focus counties were stocked out of AL18s, 6 for Artesunate injection, 5 for AL 12s and one facility for AL 6s. However, none of the facilities visited had a stock out of all the AL pack sizes and were doing pack size substitutions. Only one of 25 health facilities using RDTs was stocked out of this commodity. For FP/ RMNCAH the 3 counties had experienced some stock out outs within the last three months, the main one being Emergency Contraceptive (EC) pills which were missing in all the facilities indicating a major stock out. Some commodities, among them DMPA, IUCD, ORS, and implants were overstocked in some facilities across the 3 counties. Twenty eight percent (28%) of the facilities stocking malaria RDTs had this commodity stocked according to plan and the proportion of anti-malarial medicines stocked according to plan was 24%. Ninety two percent (92%) of the stock cards were available for almost all commodities but only less than ¼ of these were being updated regularly.

Statistical findings and qualitative reports from this assessment will be made available to USAID entirely and to other stakeholders where necessary. KSCSS will endeavor to protect individual responses and user access and strictly sharing the findings for the purposes of learning and promoting change. Results from this assessment will also be used as evidence for intervention in critical areas that the project may deem necessary.

BACKGROUND

The purpose of the USAID | Global Health Supply Chain – Procurement and Supply Management Project (GHSC-PSM) is to ensure uninterrupted supplies of health commodities in support of U.S. government-funded public health initiatives around the world. The project provides direct procurement and supply chain management support to the President’s Emergency Plan for AIDS Relief (PEPFAR), the President’s Malaria Initiative (PMI), and USAID’s family planning and reproductive health program. To support U.S. government-funded global health activities, GHSC-PSM manages a wide array of health commodity procurement services and provides related systems-strengthening technical assistance encompassing all elements of a comprehensive supply chain.

At the country level, GHSC-PSM supports country strategies and priorities that fall under the following three project objectives:

- Global commodity procurement and logistics
- Systems strengthening technical assistance
- Global collaboration to improve long-term availability of health commodities

In Kenya, the USAID Kenya Supply Chain Systems Strengthening (KSCSS) activity will support pharmaceutical systems strengthening technical assistance to the national and 11 focus county governments. Nationally, the activity will provide direct technical assistance support to the Ministry of Health, the National AIDS and STI Control Program (NASCOP), the National Malaria Control Program (NMCP), The Department of Family Health (DFP) and the Pharmaceutical Services Unit.

I. Overview Of Strategic Vision In Kenya

Kenya is striving to ensure the delivery of quality health products and services to underserved areas in a sustainable, accessible, and donor independent way. This is the cornerstone of the objectives and principles of the KCSS activity. Over the next 5 years our goal is to catalyze a new level of supply chain performance, effectively solidifying Kenya at the vanguard of sub-Saharan Africa’s supply chain.

The project will strengthen pharmaceutical supply chain systems in high burden, under resourced and underserved areas specifically in the lake endemic regions and the northern frontier counties. The goal is to ensure that there is a well-functioning, high performance system that ensures that deserving populations have adequate, safe, affordable and reliable supply of health commodities when and where needed. To address each of these critical subcomponents, the project will focus on the 6 key pillars of a functioning pharmaceutical supply chain system namely:

- 1) Commodity Management System: an effective commodity management system that ensures that the right products in the right quantities, price and quality are available when and where needed. This will be done through capacity building national and county teams to do accurate forecasting and quantification, supply planning and budgeting for commodities, ordering, inventory management and reporting.
- 2) Governance: strong institutionalized and accountable leadership and governance structures that are responsive and have well defined roles and responsibilities. The project will focus on strategic planning for health commodities with a plan that helps define the future supply chain for Kenya. The project will also establish/ strengthen oversight and performance management structures that utilizes data to measure performance, productivity and quality assurance of the various interventions.
- 3) Safe health products: The project will ensure that the products supplied are safe and appropriate for use by support counties in putting systems for pharmacovigilance and post market surveillance and reporting. The project will also build the capacity of the counties to do product selection and rational use of medicines.
- 4) Workforce development: adequate, well trained and equitably distributed workforce that is responsive, fair and efficient in achieving desired health outcomes. Particular attention will be paid to training staff on the business elements of supply chain management, identifying training of trainers (TOTs) in the counties for sustainability and tracking and recognizing success as a way of motivation and encouraging behavior change. Standard Operating Procedures will be developed and innovative training and refresher approaches will be employed to make the training content interesting and meaningful to the learners.
- 5) Information Management: a commodity information management system that ensures end to end data visibility of accurate, reliable and timely data useful for decision making. The project will focus on elements of data capture and data capture tools, transmission processes, quality assurance and data analytics that are useful for decision making both at the national and county government level
- 6) Financing: a good commodity financing system that raises adequate funds to support needed commodities thus minimizing out of pocket payments. Whereas HIV/AIDS and Malaria commodities are well funded at the moment, there is inadequate funding for some family planning commodities whose procurement is done at the devolved government level. To address this gap, the project will capacity build the county level health commodity managers to do proper product selection and prioritization as well as accurate quantification and supply planning that informs county health budgets. The project will capacity build the county managers on how to make a business case for the health commodities so as to break the approval barriers with the county political leadership responsible for approving budgets. The project will also ensure that counties are minimizing waste by cutting back on expiries and obsolete products and ensuring that commodities are utilized for their intended use.

2. Baseline Assessment Objectives

The objectives of the baseline assessment were to:

- 1) Obtain relevant information that could assist in the development of the project's work plan and budgets from an informed point of view.

- 2) Review the current situation for key outcome indicators in health commodity management and services at national and facility levels.
- 3) Establish specific approaches against which program performance and progress will be measured across different time periods during the 5-year life of the project.
- 4) Document best practices and areas of improvement that could enhance decision making processes at county and national levels towards improvement of the health commodities supply chain systems.

The results of the survey are intended for the benefit of the KSCSS project and key stakeholders as a means to appropriately proceed with the implementation of planned health commodity and supply chain development activities.

3. Sampling Framework and Data Collection

Assessment Design

The baseline assessment employed typical baseline assessment methodologies, including health facility assessment using checklists, health worker interviews as well as secondary data abstraction from the facility and national mechanisms that relate to health supply chain commodities. Purposive sampling was done to identify five facilities in each county that had diverse levels of health supply chain systems utilization, with an aim to benchmark a typical county situation at that moment. These facilities were identified by county and sub-county pharmacists based on their accessibility, compliance to supply chain routines and commodity management practices.

Assessment Population

In the eight malaria endemic counties where the project intends to roll out activities, 40 health facilities in Kisumu, Homa Bay, Siaya, Migori, Busia, Bungoma, Kakamega and Vihiga were sampled and assessed. In addition, the assessment teams interviewed county pharmacists to get an overall perspective and to appreciate the structures on health commodity management, e.g. technical working groups (TWG), in each county.

The assessment team also visited three counties in Arid and Semi-Arid Land (ASAL) and hard to reach areas – Turkana, Samburu and Baringo (Note that Baringo about half of Baringo County is easily accessible and the other half classified as geographically hard-to-reach). Five health facilities were visited in each of these five counties, covering a total of 15 facilities.

Assessment indicators

The assessment reviewed existing structures and processes in the pharmaceutical, non-pharmaceutical and laboratory commodity management systems at national and county levels. At the national level, the assessment targeted the national supply chain agency, KEMSA, as well as affiliated agencies for commodity supply chain including NASCOP, DFH and NMCP in line with the project's mandate.

The baseline assessment tools were structured against the health system strengthening pillars on issues that relate to commodity management. These pillars are described at the introduction section of this report.

Performance level indicators that were assessed included:

Exhibit I: Performance Indicators Assessed:

HSS Pillar	Indicators assessed
Finance and Strategic Planning	<ol style="list-style-type: none"> 1. Existence of a strategic document or plan for the various health commodity supply chain agencies 2. Recommended reform strategies being implemented by the supply chain mechanisms that are consistent with USAID and PEPFAR benchmarks 3. Existence of supply chain SOPs and guidelines for commodity management 4. Existence of functional Commodity Security Technical Working Groups to coordinate elements of commodity security 5. Current M&E practices in supply chain monitoring in place 6. Facility level supervision and approaches used. 7. Utilization of the budgeted amounts for procurement of health commodities
Leadership and Governance	<ol style="list-style-type: none"> 1. Assessment reports for commodity security standards 2. Supply chain functions carried out without external Technical Assistance
Human Resources for Health	<ol style="list-style-type: none"> 1. No. of staff in supply chain structures 2. No of vacancies in the supply chain structures 3. Percentage of leadership positions held by women in supply chain structures
Service Delivery	<ol style="list-style-type: none"> 1. Stock status of the relevant tracer commodities for Malaria and FP/RMNCAH
Health Products	<ol style="list-style-type: none"> 1. No. of health commodity forecast reviews conducted 2. No. of emergency procurements undertaken 3. Frequency of updating the health system supply plans 4. No. of commodities purchased with US government funds 5. Forecast error for the different tracer commodities 6. Level of confidence with commodity management/data information systems
Information	<ol style="list-style-type: none"> 1. Cross cutting indicators on innovations and operation research studies conducted

At the county level the following indicators were assessed:

Exhibit 2: Baseline Assessment Indicators :

HSS Pillar	Indicators Assessed
1. Finance and Strategic Planning	<ol style="list-style-type: none"> 1. Utilization of budgeted amounts for the procurement of health commodities 2. Number of emergency procurements done 3. Number of counties that procured malaria commodities using own funds
2. Leadership and Governance	<ol style="list-style-type: none"> 1. Existence of a county commodity management coordinating mechanism
3. Human Resources for Health	<ol style="list-style-type: none"> 1. Supply chain functions undertaken without technical assistance 2. Leadership positions in supply chain held by women 3. Number of malaria specific training programs in the human and institutional capacity development plan 4. Number of staff in the supply chain structure 5. Vacant positions in the supply chain structure
4. Service Delivery	<ol style="list-style-type: none"> 1. Number of health commodity quantifications done 2. Forecast reviews conducted 3. Existence of guidelines and SOPs 4. County strategy document on supply chain reforms
5. Innovation	<ol style="list-style-type: none"> 1. Innovations and operation research studies conducted 2. Existence of parallel supply chains
6. Information	<ol style="list-style-type: none"> 1. Number of facilities using KEMSA LMIS 2. Use of installed electronic dispensing tools 3. Number of updates to DHIS2 from facilities
7. Health Products	<ol style="list-style-type: none"> 1. Stock level status for tracer commodities for malaria and FP/RMNCAH commodities

Data Analysis and Interpretation

Data collected at national and county level was assessed using Microsoft Access ® through customized data entry templates with in-built consistency checks. The data collection tools were all entered and double-checked for entry errors. All data entry and management was undertaken at the field and at the project offices in Nairobi by the project staff. Quality assurance procedures were applied throughout the data collection and management processes and each tool’s data were properly accounted for. Descriptive statistics formed the basis of analysis through proportions, graphs and charts prepared. Information from the tools was analyzed using a more qualitative approach and subsequently grouped into the six thematic pillars representing the technical areas, and discussed in light of the program’s objectives.

BASELINE ASSESSMENT FINDINGS

Findings from this assessment are described in this section. Data were collected from two levels, national and county, and findings will be described in the same pattern, following the pillars.

I. Overall Findings – National Level

Strategic Planning: Overall, the baseline assessment targeted the national mechanisms involved in health commodity supply chain for malaria and family planning (FP) commodities. The mechanisms assessed, including KEMSA, NASCOP and DFH all indicated the lack of a comprehensive strategic document to guide national level health sector supply chain management. Only KEMSA had an agency-wide strategic plan 2015-2019; NMCP has the Kenya Malaria Strategy 2009–2018 that guides the country towards a malaria-free Kenya. The strategy has a section that aims to ‘*Ensure commodity security of anti-malarials and diagnostics in the public sector*’.

NASCOP does not have a strategy document and relies on the Kenya Aids Survey (KAS) report to define its supply chain strategic needs, while DFH has a commodity management strategy document which was developed in 2012 (before the devolution process took place) and therefore does not address the current post devolution environment. Nevertheless, all three agencies reported to be currently implementing recommended reform strategies for supply chain, with KEMSA implementing aspects of commodity risk management that includes caging, installation of security devices and cameras in their warehouses, and reviewing standard operating procedures (SOP) for commodity handling and management. NASCOP, on the other hand, is reportedly implementing mechanisms to empower counties on supply chain management at county level through training and establishing commodity management TWGs, as well as integrating tools into the DHIS2 to capture service statistics for comparison with commodity utilization. NASCOP has also embarked on a process to revise the data collection tools at the county level to enhance data visibility at facility level, and ultimately aims at enabling counties to consolidate their orders into one with an overall vision of having a single consolidated order from a county as opposed to receiving multiple facility orders. DFH is currently considering revising its strategy to address post devolution issues, with particular focus on its relationship to the counties on health commodity management.

SOPs and guidelines: All three national agencies have established SOPs within their existing supply chain strategies and/or guidelines. NASCOP’s SOPs have all been incorporated in their supply chain guideline, while DFH have their SOPs and guidelines embedded in its Reproductive Health (RH) Commodity Management Strategy 2012. The NMCP does not have written guidelines and SOPs for the various supply chain functions.

Leadership and Governance: On this pillar, the agencies acknowledged having their own commodity TWGs, as well as being members of the larger national TWG. KEMSA has its internal TWG and participates in the National Commodity Security Working Group. NASCOP has a larger Commodity Security Committee within it, but also has 5 TWGs for the various commodities including: i) ARV TWG; ii) Lab Commodities TWG; iii) Nutrition TWG' iv) 2 pager TWG; and v) Key Populations TWG. The Key Populations TWG has not been well established due to staffing constraints but this is due to change with a recent addition on staffing. DFH on the other hand has a taskforce in place that attempts to address weaknesses in MNH commodity security at county level where it has no presence at the moment. Of these national agencies, only KEMSA has a supply chain M&E plan in place for both USAID and KEMSA commodities, that reports to have moved USAID funded commodities worth 124 million USD against a budget of 123 million. NASCOP and DFH do not have any concrete supply chain plans. Of the three agencies, only KEMSA conducts facility level support supervision. NMCP has a Case Management Technical Working Group (TWG) under which the drug management sub-committee falls. The drug management sub-committee is responsible for procurement and supply management for malaria commodities. The NMCP has an overall M&E plan for the period 2009 – 2018. The plan includes two supply chain indicators: *'Proportion of public health facilities having no stock-out of ACTs for 7 consecutive days in past 3 months (for ALL ACT weight bands)'* and *'Proportion of private facility outlets stocking quality assured ACTs'*.

In the last financial year, NMCP procured anti-malarials and RDTs worth US\$12,175,481. Of these US\$4,147,289 worth of commodities were funded by USAID – representing 34% of the total cost. USAID also procured long lasting insecticidal nets (LLINs) for the country. However, the value was not readily available at the time of the interview.

None of these agencies reported having any documented assessment report for commodity security standards. NMCP reported having documented bi-annual quality of care surveys which, among others, help to identify any issues related to availability and use of malaria commodities. These issues are taken up by the case management TWG which then works with partners to address them.

The three agencies had diverse experiences in supply chain functions as shown in the table below. It is evident that KEMSA performs most supply chain functions unlike NASCOP, DFH and NMCP.

Exhibit 3: Supply Chain Functions Performed by KEMSA, NASCOP, DFH, NCMP:

Supply Chain Function	KEMSA		NASCOP		DFH		NMCP	
	Regularly Carried Out? (Y/N)	With External TA (Y/N)	Regularly Carried Out? (Y/N)	With External TA (Y/N)	Regularly Carried Out? (Y/N)	With External TA (Y/N)	Regularly Carried Out? (Y/N)	With External TA (Y/N)
1. Product Selection	✓	×	✓	×	✓	×	✓	✓
2. Quantification	✓	×	✓	✓	✓	✓	✓	✓
3. Procurement	✓	×	×	✓	✓	×	✓	×
4. Receiving commodities	✓	×	✓	×	✓	×	×	
5. Storing commodities	✓	×	×		✓	×	×	
6. Issuing commodities	✓	×			✓	×	×	
7. Requesting / ordering commodities	✓	×	✓	✓	✓	×	×	
8. Quality Assurance	✓	×	×	✓	✓	×	✓	✓
9. Warehousing	✓	×			✓	×	×	
10. Distribution	✓	×	✓	✓	✓	×	×	
11. Commodity reporting and information management	✓	×	✓	✓	✓	×	✓	✓
12. Pharmacovigilance	×	×	×	✓	✓	✓	✓	✓

Human Resources for Health: The different agencies had diversity in their human resources requirement versus availability. KEMSA, as the mandated national supply chain agency has a workforce of more than 500 supply chain in its national and regional offices. The KEMSA workforce includes 5 pharmacists, 15 laboratory staff among other supply chain cadres, with women holding more than 50 percent of the job positions. In comparison, NASCOP, has 15 health commodity supply chain workers, who include four pharmacists, one pharmaceutical technologist, two laboratory staff and five supplies officers. DFH has only one officer who deals with supply chain management. While KEMSA has optimal levels of staffing for supply chain management (which is its core mandate), the situation is different in the other agencies since NASCOP has no definite supply chain structure as the staff allocated to commodity supply chain are also engaged in other organizational roles which makes it difficult to quantify its supply chain workforce needs.

As of November 2016, the NMCP had two pharmacists, one logistician and one laboratory technologist in the supply chain structure. However, one of the pharmacists is newly posted and not yet conversant with the program operations while the other one plays a dual role as a pharmacist in the Case Management unit as well as the Global Fund unit at NMCP.

Service Delivery: Available information on stocked tracer commodities shows that there is understocking of most malaria, HIV and FP/RMCAH commodities at the central level as shown in Exhibit below:

Exhibit 4: Stock levels of Tracer Commodities at Central Level:

Tracer Commodity	Pipeline Max/Min level in MOS	Stock level in MOS at end of last complete reporting period	Stock status
DMPA (injectable contraceptives)	18/30	24	Stocked to plan
AL 24s	6/12	7	Stocked according to plan
RDTs	6/12	8	Stocked according to plan
TDF/3TC/EFV 300/300/600 mg	9/12	7.6	Understocked by 1.4 months
HIV RTK – Screening test	6/9	1.6	Understocked/ pending 15.1 MOS
CD4 reagent bundle	6/9	25.4	Overstocked
EID bundle	6/9	3.2	Understocked
Viral load bundle	6/9	0.1	Understocked

MNH commodities do not have defined pipeline parameters and it is assumed that they will be replenished alongside essential medicines and supplies.

The assessment found that KEMSA conducts monthly commodity forecast reviews, while NASCOP, which is supposed to carry out quarterly forecast reviews, only conducts them on a semi-annual basis and DFH only conducts one annually. NMCP conducts annual quantification and reviews the forecasts at 6 months. Pipeline monitoring is done monthly by the drug management sub-committee of the case management technical working group. In the past 12 months, KEMSA conducted one emergency procurement for a single commodity Tenofovir Lamivudine Efavirenz (TLE). NASCOP and DFH did not make any emergency procurement.

Health Products: At national level, the forecast error for the procured commodities procured by KEMSA, NASCOP and DFH were as follows:

Exhibit 5: Level of Forecast Error:

Tracer Commodity	Unit of measure	Forecast quantity (last FY)	Actual consumption	Forecast error percent
DMPA (injectable contraceptives)	Vials	581,814 per month	233,908 per month	59.8%
AL 24s	Doses	370,091	322,680	13%
RDTs	Tests	1,838,667	No reliable data	No data
TDF/3TC/EFV 300/300/600 mg	Pack of 30 tablets	5,305,804	4,321,083	18.5%
HIV RTK - Screening test	Tests	12,180,300	10,772,069	11.5%

The table above shows an optimal forecasting situation for HIV commodities as well as anti-malarials. Overall, the national agencies reported having confidence in their commodity systems apart from DFH which was moderately confident based on their current understaffed situation. For malaria diagnostics (RDTs), the NMCP program does not yet have accurate and reliable consumption data and is working with partners towards strengthening the commodity data collection and reporting for RDTs.

Innovations and Studies: KEMSA informed of its recent innovation to enhance data sharing by development of a storyboard to share supply chain metrics that has been hailed as positive step towards data sharing and visibility. NASCOP on the other hand enumerated the studies conducted in the recent past relating to commodity management that included:

1. a survey to improve quantification processes for the HIV commodities supply chain
2. pharmacovigilance conducted in sentinel sites to ascertain commodity quality
3. a study on adverse drug reactions on new commodities among clients.

DFH listed its innovation as the establishment of a taskforce to handle its MNH commodity management issues which will go a long way in sealing evident gaps at national and county levels. NMCP mentioned two innovations listed below:

1. a malaria stock status dashboard linked to the DHIS2 that provides a summary of the stock status of anti-malarials at national and county level; this dashboard was developed with PMI funding and requires some enhancements particularly to the county and peripheral level outputs
2. an order rationalization template, also based on DHIS consumption and stock on hand data, that has ensured the use of DHIS2 data to inform re-ordering and has also led to a rise in the reporting rates from ~70% where they had stagnated to 84% as at October 2016.

2. Overall Findings – County Level

Malaria

In the 8 malaria endemic counties assessed (Kisumu, Siaya, Homa Bay, Migori, Busia, Bungoma, Kakamega and Vihiga) oversight of malaria program activities is done by the county malaria Technical Working Group (TWG) which comprises the County Malaria Coordinator, County Pharmacist, County Medical Laboratory Coordinator, County Public Health Officer and partners (including USG-funded implementing partners). In some counties, the commodity security TWGs were active and providing oversight to management of health commodities. However, they were not necessarily focusing on malaria commodities. Inventory, data management and reporting for malaria medicines and RDTs was generally sub-optimal in all the 8 counties.

Family Planning/Reproductive Maternal Child and Adolescent Health

All the three FP/RMNCAH focus counties (Baringo, Samburu and Turkana) have county commodity security TWGs in place. However the TWGs previously received support from the Global Fund but are currently not active. The baseline assessment found that there were stock outs, excesses and expiries of FP/RMNCAH commodities in two counties. Baringo County was found to have achieved >80% DHIS reporting rate for FP items; Turkana was in the 70% range while Samburu was trailing around 40%. Only two out of the three Samburu sub-counties have their data entered in DHIS. County level commodity managers were also not very confident with the Commodities Information Systems (CIS).

Most supply chain functions are undertaken regularly by county and facility staff, but external assistance is required in aspects such as storage infrastructure, redistribution of excess items, orientation of peripheral facilities in DHIS reporting and upward transmission of reports to sub county level etc. The counties are generally compliant with the 2010 Constitution of Kenya's one third rule by ensuring that women hold leadership positions in their supply chain structures. Both the CECs and COHs in Turkana and Samburu counties are women while in Baringo, the CHMT has at least a third of the positions filled with women. None of the counties had an active HRH strategy in place and their supply chain systems were significantly understaffed.

Allocations for health commodities procurement budgets were not based on quantification forecasts and were generally inadequate. In one instance, the assessment found that part of the allocated amount was redirected to a different county function, but was replaced during a subsequent supplementary budgeting process. Although FP, malaria and HIV commodities are provided free by national government, three counties reported having procured Artesunate injection and AL (Arthemether Lumefantrine) with their own funds due to stock-outs at KEMSA or delayed deliveries. Parallel supply chains exist in the counties for various categories of health products (nutrition, EMMS and FP items) and the CHMTs are well aware of their existence. There are at least five FP/MNCH service delivery implementing partners in each of the counties, but none of them has been focused specifically on commodity management support.

3. Findings By Health Commodities Supply Chain Pillars

I. Leadership and Governance

Although the Malaria TWGs include discussions on commodity management in their agenda, such discussions are largely limited to availability of the commodities. There is need to strengthen these committees to enhance the discussions on improving inventory management, commodity data quality and information management.

On FP/RMNCAH, Samburu County had an FP TWG in place which was active till early 2016 but became dormant when partner support ended. There were no sub-county TWGs reported to be active in the three counties. Baringo County has a county commodity security TWG comprising all heads of departments that handle commodities within the county (pharmacists, RH coordinator, KEPI logistics officer, TB coordinators, HIV coordinators among others). The CDH

or County Pharmacist provides leadership to the TWG. Baringo County has an inactive sub-county commodity security TWG which has never held a meetings since it was established. Sub County RH coordinators work in conjunction with Sub County Pharmacists to manage FP/RMNCAH commodities. At facility level, FP items are largely managed by the nurses in the FP section, while MNCAH items are handled by the Pharmacy staff.

2. Financing

Malaria diagnostics, first line anti-malarials and sulphadoxine-pyrimethamine for intermittent preventive therapy for malaria in pregnancy are funded by the Global Fund (GF) and the President's Malaria Initiative (PMI). There hasn't been a funding gap in the recent past and currently, as GF and PMI have committed funds to procure malaria medicines and RDTs until 2018. Counties are supposed to budget for, and procure, Dihydroartemesinine Piperaquine (DHAP) for the second-line treatment of uncomplicated malaria.

FP commodities are supplied to the facilities at no cost by the national government. Allocations are made by the FP Program Manager based on consumption data reported in the DHIS2. KEMSA then delivers items alongside the EMMS orders directly to the facilities and to the county store. However, the MNH commodities are procured by the counties alongside the essential medicines and medical supplies, mainly from the KEMSA and other sources as well. The county health departments develop budget estimates that include MNH commodities and forward the budget to their respective county assembly health committee for consideration and approval. This then informs county allocations for health department and commodities. In Baringo County, for instance, in the last financial year, the health budget was funded up to 110%.

3. Human Resources for Health

The assessment established that the management of malaria commodities at the county and sub county hospitals is done mainly by pharmacists and pharmaceutical technologists and by nursing staff at the health centers and dispensaries. All counties sampled had a county pharmacist. Baringo and Turkana counties were found better staffed than Samburu. Samburu County has sub-county pharmacists managing Rural Health Facility (RHF) issues from the County Referral Hospital while all sub county pharmacists in Baringo and Turkana are deployed at the sub-county level. No formal training was evidenced for almost all staff involved in commodity management, except for county pharmacists.

Most supply chain functions are undertaken regularly by county and facility staff, but external assistance is needed in aspects like storage infrastructure, redistribution of excess items, orientation of peripheral facilities in DHIS reporting and upward transmission of reports to sub county level etc. Significant gaps noted were skills set required for commodity management, particularly for quantification of health commodities – where estimates are largely based on previous procurements and not consumption/ demand at the health facilities.

None of the three FP/RMNCAH counties had a HRH strategy and current staffing especially in key supply chain positions was below the recommended norms and standards.

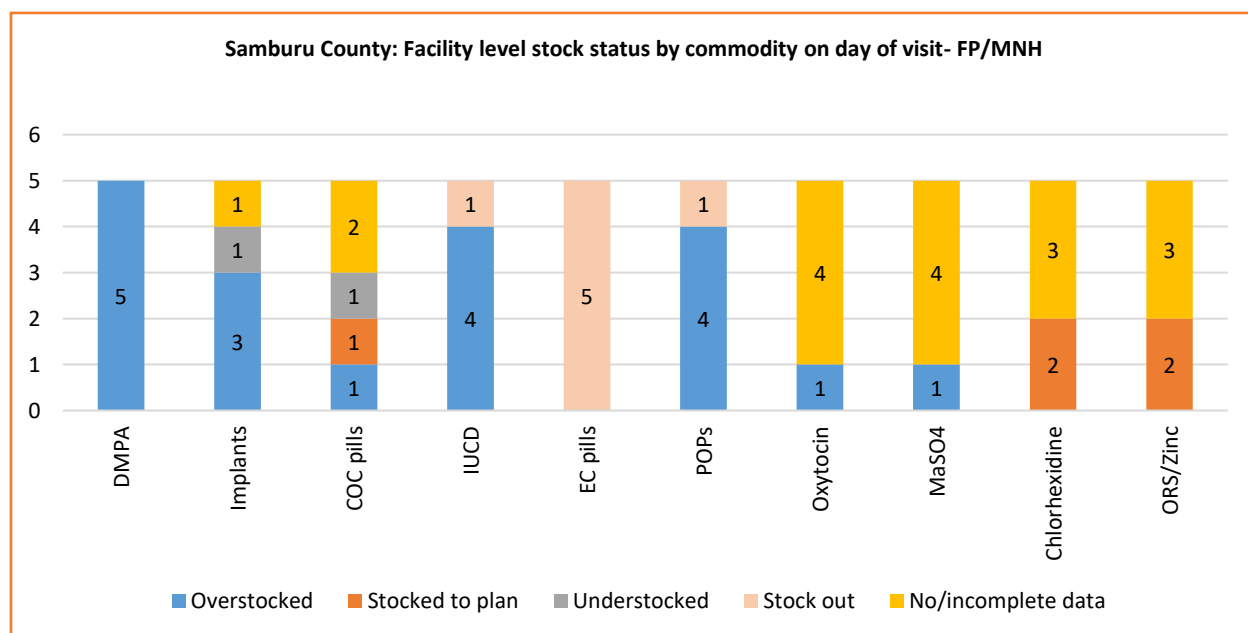
4. Service Delivery

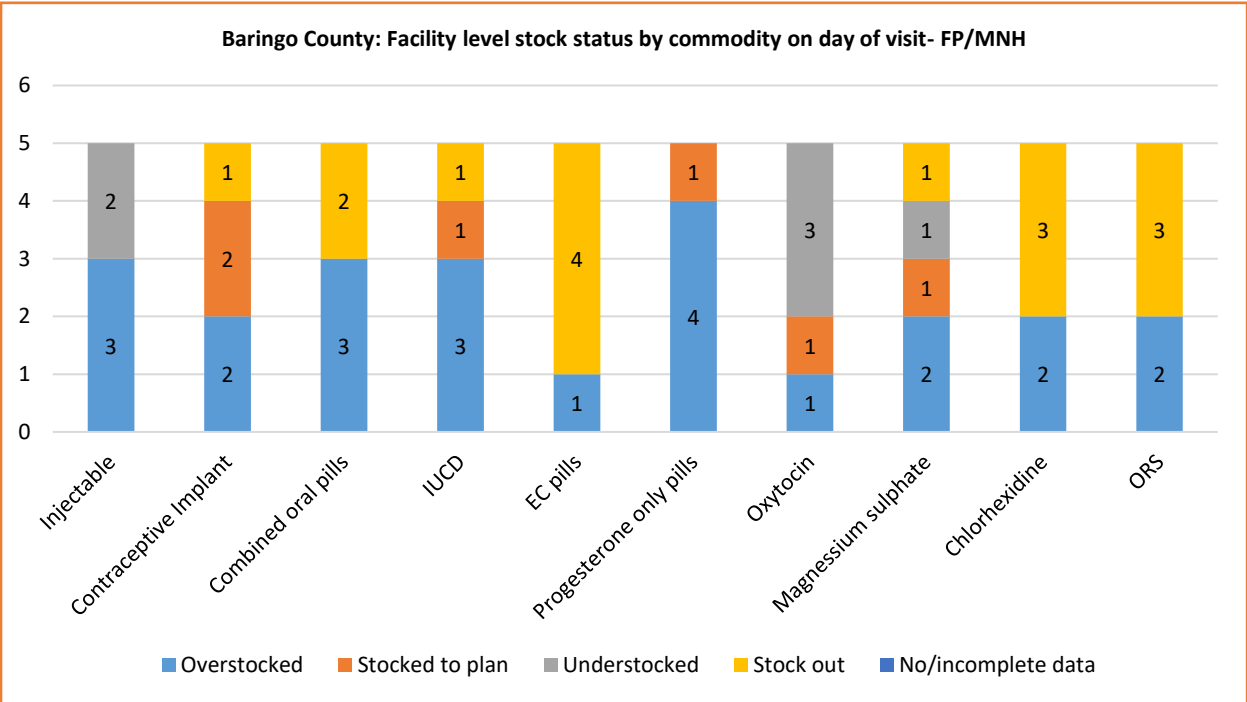
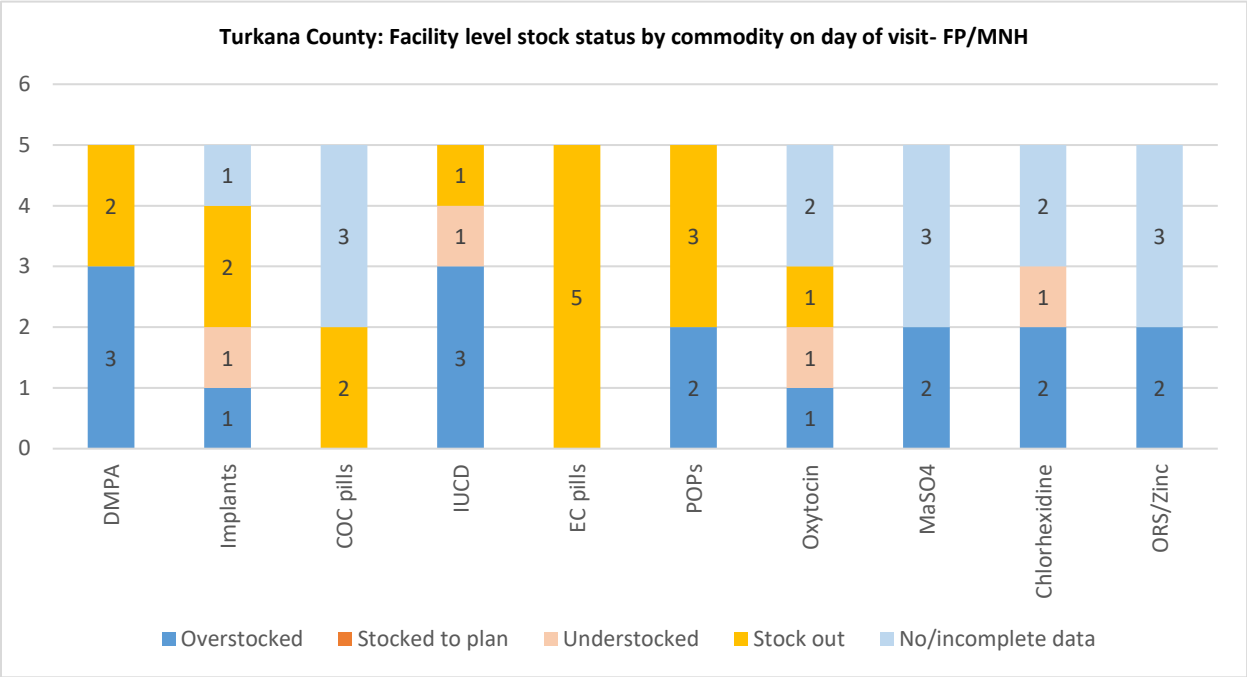
Of the 41 facilities visited in the 8 malaria focus counties, 17 facilities were stocked out AL (18s), six were stocked out for Artesunate injection, and five were out of AL (12s) and one facility for AL 6s. However, none of the facilities visited had a stock out of all the AL pack sizes. Only one of 25 health facilities using RDTs was stocked out of this commodity on the day of visit.

The stock outs of one or more of the AL pack sizes necessitating substitution, e.g. a patient who requires one blister of AL 24s would receive four blisters of AL 6s. This approach ensures that patients get the anti-malarial medicines they require but skews the consumption data at the health facility leading to inaccurate data for quantification.

A review of the availability FP/ RMNCAH commodities in the health facilities in the 3 counties revealed that the counties had experienced some stock outs within the last three months. On the day of the visit, major stock-outs were noted for emergency contraceptive pills in almost all health facilities and ORS in a number of facilities. Other commodities were overstocked included DMPA, IUCD, ORS, and implants in some facilities.

Exhibit 6: FP/RMNCAH Stock status in the three focus counties:





In Katilu health center, Turkana County, there was almost 24 months of supply for Chlorhexidine 7.5% which was not matching the overall demand for this commodity.

Exhibit 7: Overstock of Chlorhexidine 7.5% in a health center in Turkana County



Stacks of ORS 7.5% at Katilu health Centre, Turkana County

At the 3 county referral hospitals, some commodities were reflected as out of stock on the bin cards at the facility store although there was still enough stock at the service delivery points (FP room) presenting an inaccurate picture of the stock status if stock availability was checked at the store alone.

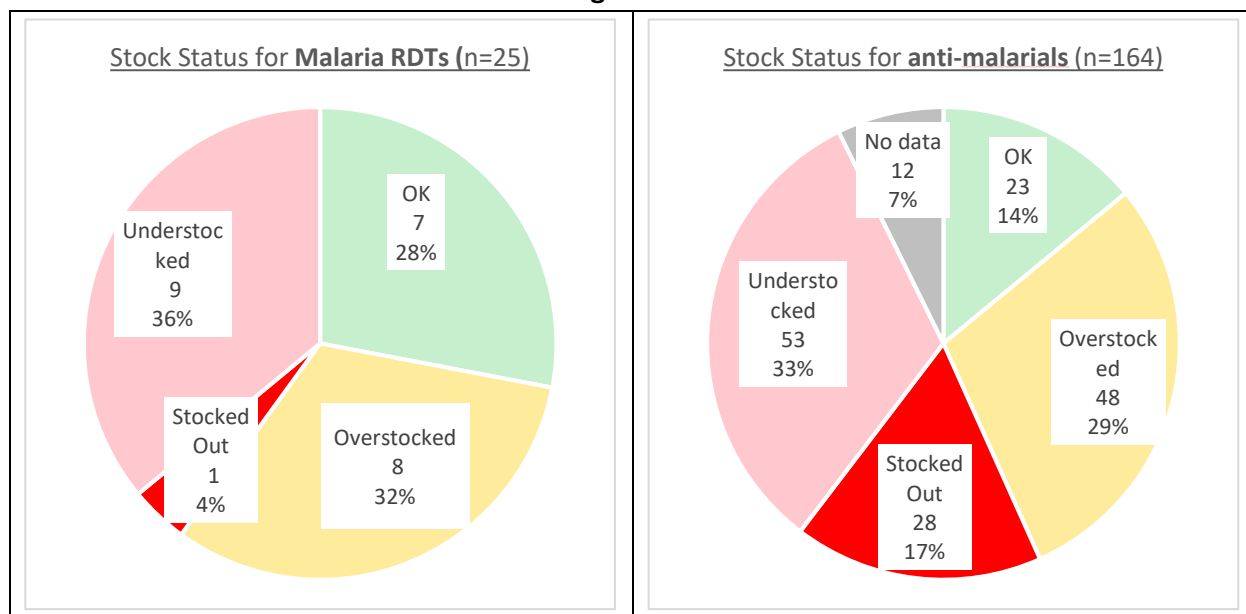
At one county referral hospital, staff were observed to make verbal requests for items at the main drug store. In another facility, staff reported that it was common practice for commodities to be brought to them without any accompanying documentation from facilities who could not use them, and this goes against the practice of commodity management. It was also reported that Family Planning SDPs, especially those at referral hospitals, received some commodities directly from the county stores without going through the facility store.

5. Health Products

a. Availability of malaria commodities

The stock status for malaria medicines and RDTs was assessed at each of the 41 health facilities visited by determining the actual stock on hand on the day of visit and dividing this by the estimated adjusted average monthly consumption. Facilities with over 6 months of stock (MOS) were considered over-stocked, stock levels between 3 to 6 MOS were considered adequately stocked, and those with less than 3 MOS were considered under-stocked. This is presented in the figure below;

Exhibit 8: Overall malaria stock status in the eight focus counties



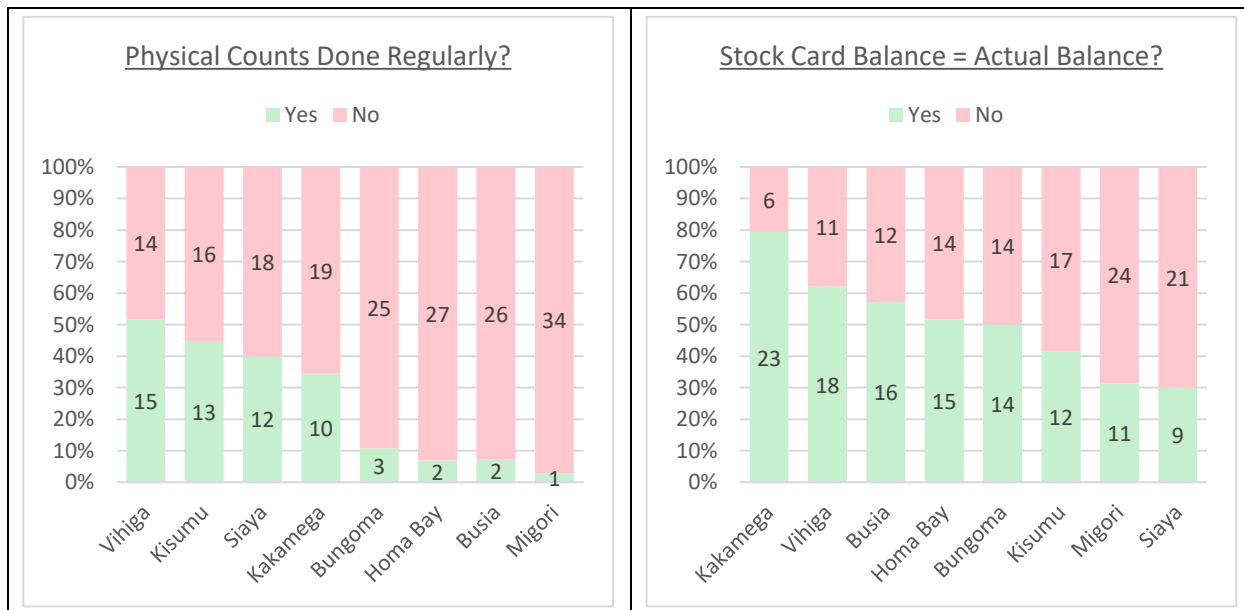
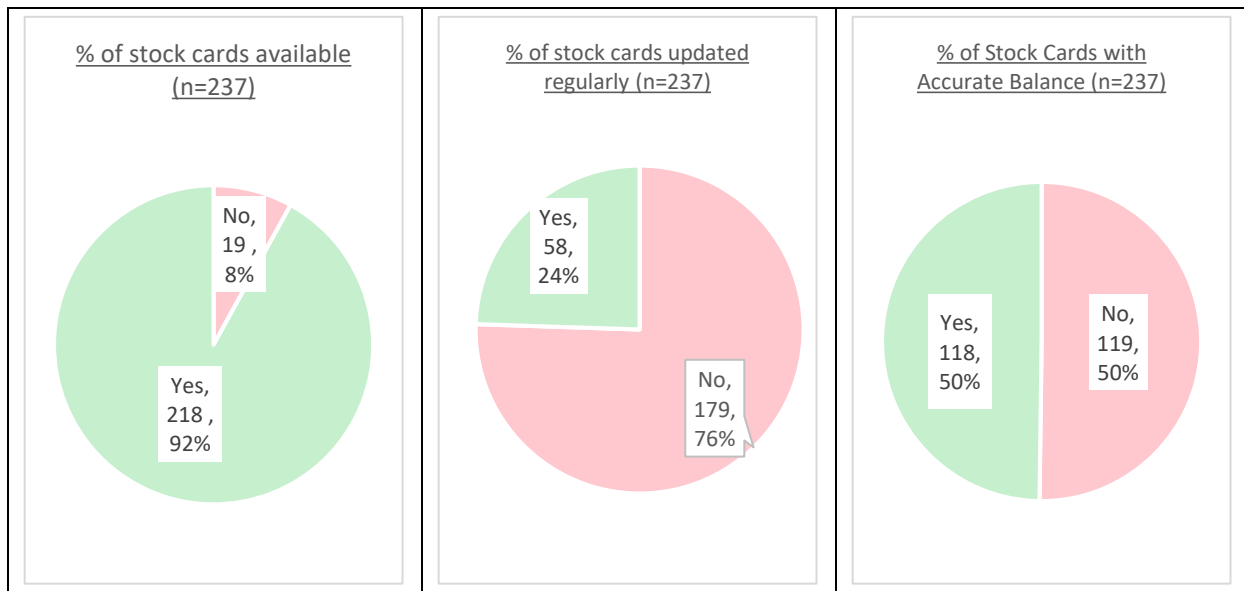
Data abstracted from the facility records on the day of visit showed variances in the stock status in different counties as shown in the figures below:

Twenty-eight percent (7) of the facilities stocking malaria RDTs had this commodity stocked according to plan (i.e. within the recommended level of 3 to 6 MOS), and the proportion of anti-malarial medicines stocked according to plan was just 24%. There were incidents of over-stocking and under-stocking for both RDTs and anti-malarial as well as incidents of stock outs as discussed earlier.

b. Management of malaria commodities

Assessment of the inventory management practices for malaria commodities was done, looking at the storage conditions, availability and updating of stock cards, and their accuracy. The results are as shown below

Exhibit 9: Inventory management practices for malaria commodities



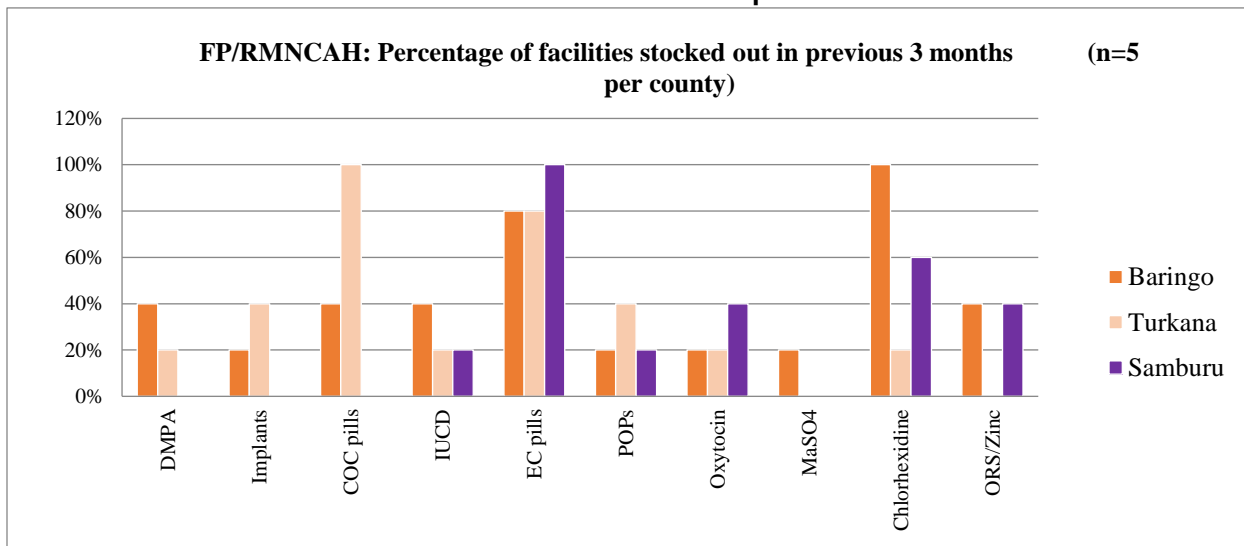
Whereas stock cards were mostly available for almost all commodities (92%), less than a quarter of these were being updated regularly (i.e. a physical count done and documented at least once a month for the preceding 3-month period). Only about 50% of the stock card figures were correct when compared to the actual physical count.

c. Management of FP/RMNCAH commodities

Stock-outs, excesses and expiries of FP RMNCAH commodities were noted in all 3 counties and active monitoring of expiry dates using any tool was not practiced in any facility. Expiries were noted for combined oral contraceptive pills in some facilities in Baringo and Turkana counties, for IUCD in Samburu, and for Magnesium Sulphate and Oxytocin in Turkana County.

Stock outs were observed for most items, the worst affected being Emergency Contraceptive (EC) and Combined Oral Contraceptive (COC) pills as well as Chlorhexidine.

Exhibit 10: Extent of stock outs for FP/RMNCAH in the sampled facilities



Storage practices for the health commodities in most facilities visited did not meet good practice standards. The stores were not arranged, there was lack of holding pallets, poor lighting, no temperature charting in some stores, and were untidy as evidenced in the images below.

Exhibit 11: Inadequate storage practices witnessed during assessment



6. Information

a. Information on Malaria commodities

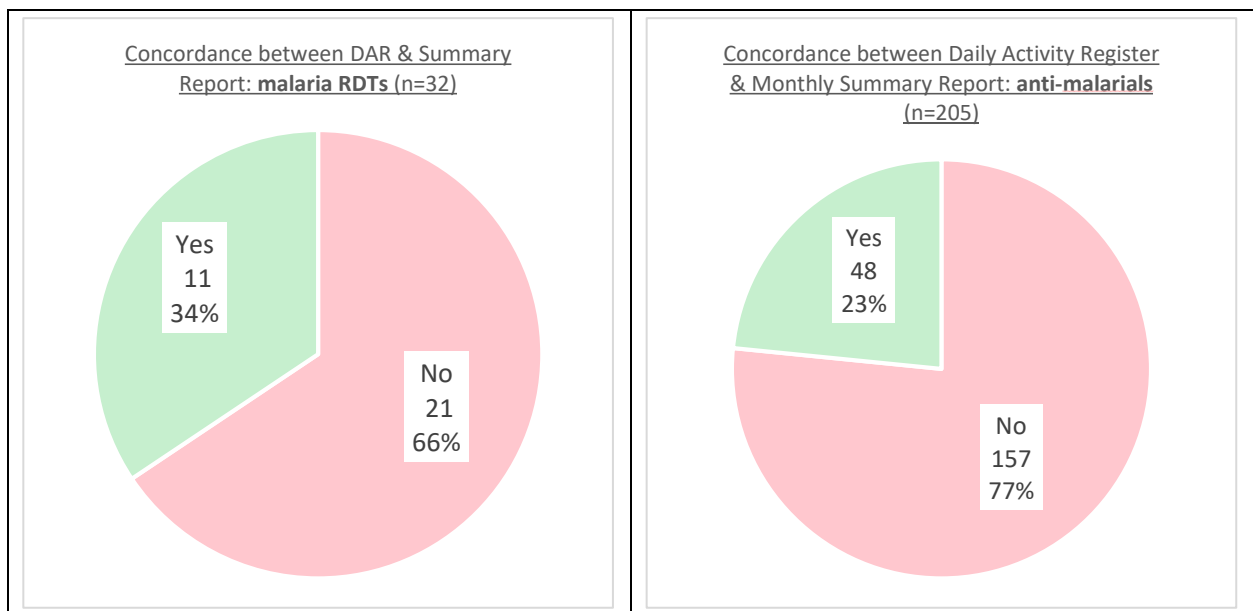
The assessment reviewed the commodity data collection registers and reporting forms for malaria medicines and RDTs. The concordance between consumption data in the daily activity registers and the monthly summary reports was also assessed. Information was also obtained on commodity and information flow of malaria commodities to and from Community Health Volunteers in the community units.

Exhibit 12: Commodity data collection and reporting tools in use at the sampled facilities

Commodity	Daily transactions	Monthly reporting
Malaria Medicines	<ol style="list-style-type: none"> 1. AL Daily Activity Register 2. Improvised book 3. Electronic dispensing tool (SANITAS) 	<ol style="list-style-type: none"> 1. Monthly Summary Report Form for Malaria Commodities
Malaria RDTs	<ol style="list-style-type: none"> 1. AL Daily Activity Register 2. MOH 240 3. MOH 514 4. Revenue Register 5. Improvised book 	<ol style="list-style-type: none"> 1. Monthly Summary Report Form for Malaria Commodities 2. MOH 643

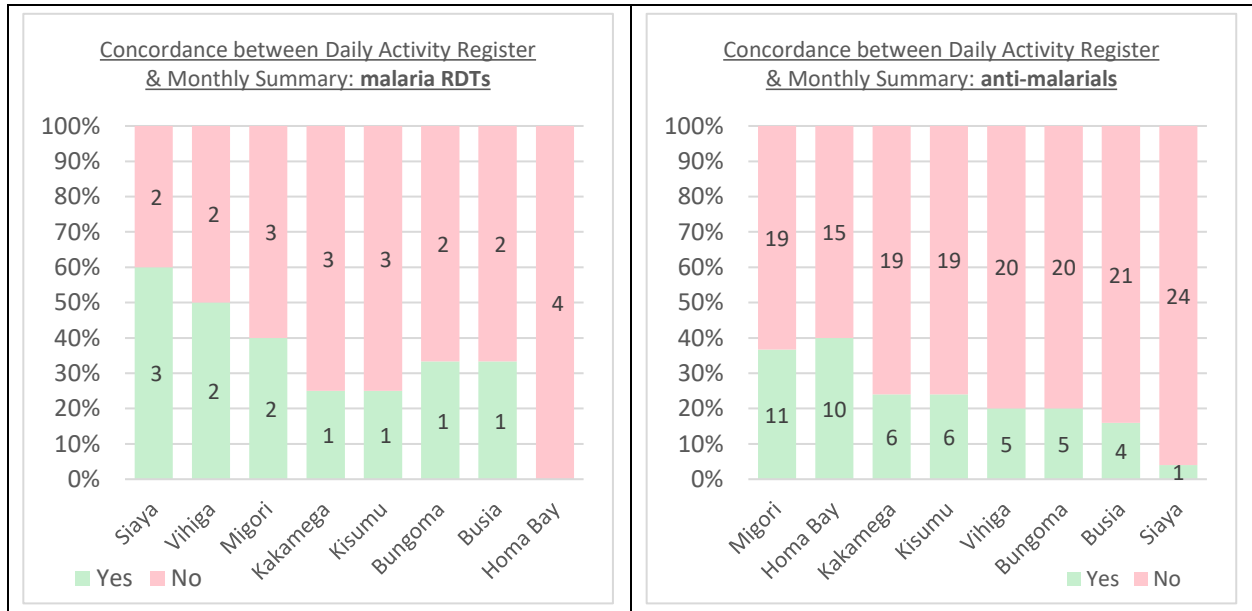
Results for concordance between the daily transaction registers and the monthly summaries is provided below:

Exhibit 13: Concordance summaries for malaria commodities



The quantities dispensed/used in the daily activity registers and the monthly summary reports were matched in 34% of the cases for Malaria RDTs and in 23% of anti-malarials. The variances between the two figures ranged from small variances of <10% to significant variances of >300%. These variances point to likely inaccuracies in either, or in both, of the sources of this data, which can result in inaccurate computation of required re-order quantities as well as in the quantification for malaria commodities at national level.

Exhibit 14: Concordance between daily and monthly registers for malaria commodities



b. Information on FP/RMNCAH commodities

The assessment reviewed the commodity data from use and entry of bin cards (stock control cards) to collection registers and reporting forms FP/RMNCAH commodities. Comparison between consumption data in the daily activity registers and the monthly summary reports was made. Apparent weaknesses were noted in the management of inventory and commodity information. Overall, only 53% of expected stock cards were available on the day of the assessment. Although blank stock cards were abundantly available in most facilities most items had stock cards that were mostly not updated. In some facilities, the stock cards were not used at all.

Regarding availability of stock cards per commodity, EC pills and Chlorhexidine mostly did not have stock cards. The stock availability for the various commodities was 64% in Baringo County; 40% in Turkana County and 58% in Samburu County.

Further analysis revealed that stocks cards were not regularly updated and used in stock management. Recording of physical counts on the bin cards was done for less than 10% of the items assessed. Additionally, there were discrepancies between closing balances on stock cards and the physical count for the respective commodities. Only 23% of the commodities had concurrence on balances; 33% did not have while 44% of the bin cards had incomplete data as shown in the figure below.

FP Daily Activity Registers (DARs or MoH 512) and FCDRRs were available and in use in 100% of the facilities to record daily transactions at Service Delivery Points (SDPs) and for monthly reporting of FP consumption data. Page summaries (top and bottom) of the DARs were not updated in most of the facilities.

MNCAH tracer items were found to be tracked only on bin cards from the refrigerator (for oxytocin) and at the stores for the other items. Daily transactions are however not recorded in one place for easy traceability.

Most facilities visited (including those in Samburu North sub county) had prepared and submitted their October FP commodities consumption reports to the sub county level. Some facilities did not retain a copy of the FCDRR for their records. There was also found to be some lack of clarity in who between the pharmacy and nursing officers is responsible for reporting of FP items consumption in the DHIS.

There is no daily activity register and monthly summary tool for recording MNH commodities, and this made it difficult to document and report facility level consumption.

DISCUSSION/CONCLUSION ON BASELINE FINDINGS

Leadership and Governance: It is evident that in both national and county levels a clear strategy on commodity management is still lacking, especially post devolution. All the agencies involved in commodity management at the national level have strategies that only addressed the environment before the advent of devolution when they had full leverage across the country, a situation that has radically changed. At the county level commodity management and security issues have not been prioritized by the county health departments, and there is guidance provided regarding who is should be responsible for commodity storage at facility level between nurses, laboratory technologists and pharmaceutical technologists. Formulation of strategic blueprints is therefore an area of priority for the project in conjunction with the respective actors and counties.

In addition to this, strengthening of commodity management TWGs at national and county levels is another area that requires strengthening. At the moment, the county TWGs are either inactive where previously established, or nonexistent in other counties.

Commodity Financing: As indicated in the findings, there is no funding gap for the procurement of malaria and FP commodities at present with GF and PMI committed to support malaria medicines and RDTs until 2018. Although this assurance is comforting, the challenge remains in allocation and distribution to prevent stock outs and expired commodities at facility level. Counties have been budgeting for procurement of MNH commodities and this should be rationalized to ensure that adequate quantities are forecasted through analysis of consumption data, which could be a priority area for the commodity TWGs.

Human Resources for Health: At national and county levels, it is apparent that commodity management issues are being handled by a basic number of staff, with key competencies missing altogether. Other than KEMSA and NASCOP, who have some degree of staffing, DFH is poorly staffed on commodity management with only one member staff managing the entire department. At the county level, almost all the staff handling health commodities do not seem to have any training, and therefore action is required to reverse this scenario. Adequate staffing especially at sub-county and health facility level is required, alongside adequate training, to instill best practices in this area.

Service Delivery: Stock-outs of malaria and FP commodities remain a concern even when stock is available at the central level. This situation arises from inadequate ordering and distribution capacity of the service providers resulting in delays of replenishing the orders of some facilities. Excess commodities were also found in some counties while other counties reported stock-outs

of the same as was the case with Chlorhexidine. There is need therefore to institute commodity structures, including county and sub county TWGs on commodity management that ensure data visibility and supports re-distribution of commodities from high stocked to low stocked facilities/counties. The overall goal however is to ensure that commodity managers are well trained on aspects of forecasting and quantification, supply planning and use of reliable and accurate data to make reorder decisions. The project should also be instrumental in advocating for cross county commodity management to help establish a horizontal approach in addressing stock imbalances.

Information: Despite availability of adequate stock cards, there was evidence of poor stock control for both malaria and FP/RMNCAH commodities. This could be largely due to inadequate capacity building, and infrequent support supervision by the county and sub-county teams. In addition, quantities dispensed in activity registers and the monthly summary reports were mismatching in a significant number of facilities pointing to inaccuracies in computation of required re-order quantities as well as in the quantification of commodities at national level. Cases of missing stock cards for some commodities, e.g. Chlorhexidine and other MNH commodities make it quite difficult to quantify facility level consumption, and some tools did not have adequate disaggregation to accommodate all products, leading to undocumented supply consumptions. This calls for a review of these tools, an area that could be supported by project interventions.

RECOMMENDATIONS

The findings from this assessment recommend the following interventions:

Cross Cutting

1. There is need for a comprehensive supply chain strategic plan that addresses the nuances of the devolved governance structure with well define roles and responsibilities at each level
2. There is need for a HRH strategy that ensures that all supply chain functions are carried out by qualified personnel and who are well trained and oriented on all aspects of commodity management
3. Harmonization of reporting tools is required to ensure accurate data capture, analysis and reporting.
4. Skills enhancement in areas of commodity and inventory management will be critical in ensuring that the right commodities at the right quality and quantity are available when and where needed.

Malaria

1. There is need to support the county malaria TWG (or commodity security TWGs) to:
 - Strengthen supportive supervision and mentorship of health workers involved in the management of malaria commodities
 - Conduct regular data quality reviews and assessments
2. Capacity building of health workers on commodity management, use of DHIS2 for commodity management, quantification, etc. is required at all levels.
3. Storage conditions need to be improved, e.g. infrastructural renovations, provision of pallets, shelves etc.
4. Provision of commodity data collection and reporting tools to the health facilities.
5. The National Malaria Control Program should provide guidance on the recommended tools for collection of data on daily usage of malaria RDTs.

FP/RMNCAH

1. County and sub-county commodity oversight operations need to be strengthened at all levels of commodity management.
2. Commodity information management systems need to be improved including building the capacity of staff on DHIS reporting and complete filling of daily transaction records at the stores and SDPs.
3. LMIS tools for tracking of MNCAH commodities need to be developed and implemented.
4. Where an EMR is being implemented, such as the Electronic Health Management System in Baringo and Turkana counties, this should be explored to support commodity reporting especially for MNCAH

5. Capacity building in basic commodity management concepts (including accurate quantification and ordering) should be enhanced for more hands on facility staff.
6. Regular commodity focused supportive supervision with OJT and mentorship is recommended.
7. A regular redistribution schedule of excess items needs to be implemented and the allocation of commodities from KEMSA streamlined to eliminate pushing of commodities.
8. Expired items should be removed from the facilities and be disposed of.
9. Storage infrastructure needs attention in several facilities; including lockable cabinets in the FP rooms, shelving, pallets and roof fans or ACs in stores.

ANNEXES

DATA COLLECTION TOOLS

U.S. Agency for International Development

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Washington, D.C. 20523

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