AFYA UWAZI
Third Party Monitoring of Kenya's Health Supply Chain

Annual Report, July 2021-September 2022

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FY22 Annual Report

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Acronyms

3PL	Third-party logistics
AL	Artemether Lumefantrine
ARPA	American Rescue Plan Act
CDRR	Consumption Data Report and Requisition
CHMT	County Health Management Team
CLA	Collaboration, Learning and Adaptation
COG	Council of Governors
COR	Contracting Officer Representative
DAR	Daily activity register
DN	Delivery note
FP	Family Planning
FY	Fiscal year
HPTU	Health Products and Technologies Units
IMAT	Inventory Management Assessment Tool
IMS	Imperial Managed Solutions (MEDS sub-contractor)
IP	Implementing partner
KHIS	Kenya Health Information System
KPI	Key Performance Indicator
LLIN	Long Lasting Insecticidal Net
MEDS	Mission for Essential Medicines and Supplies
MEL	Monitoring, Evaluation & Learning
MOH	Ministry of Health
mRDT	malaria Rapid Diagnostic Test
PEPFAR	President's Emergency Plan for AIDS Relief
PMI	President's Malaria Initiative
POD	Proof of Delivery
PPB	Pharmacy and Poisons Board
RACF	Risk and Control Framework
SVS	Stock Visibility System
TLD	Tenofovir, Lamivudine, and Dolutegravir

TPM	Third-Party Monitoring
USAID	United States Agency for International Development
USG	United States Government

Executive Summary

Afya Uwazi is a five-year (2021-2026) third-party monitoring task order funded by USAID to monitor United States Government (USG)-funded health products and technologies for HIV, malaria, TB, laboratory, maternal and child health in both public and private health facilities.

This is the first annual report of Afya Uwazi task order covering 15 months beginning with the start-up period and activities implemented between July 2, 2021, up to the end of the first project year on September 30, 2022. During this period, Afya Uwazi designed and implemented a comprehensive commodity surveillance system and developed a set of tools for monitoring, analyzing and visualizing supply chain performance and risk by county, facility, and health program area. Afya Uwazi supported USAID's efforts to establish an accountable, and transparent TPM system and improve availability, quality, and use of data by stakeholders in public health.

Using its independent performance data that verified (a) deliveries of USG health commodities to last mile health facilities and (b) management of health commodities at the last mile, Afya Uwazi estimated commodity risk ratings and continuously updated and displayed the performance data and risk ratings on a web-based dashboard. Afya Uwazi developed scorecards that summarized the data and risk ratings at the county and health program levels. The risk ratings, scorecards and accompanying narrative reports shared by Afya Uwazi provided USAID, supply chain implementing partners (IPs) and other stakeholders with timely, action-oriented information to guide decision-making. The risks were categorized by type and level of risk and assigned based on observed irregularities in the supply chain, such as shortages and overages in commodity deliveries from the central warehouse, incomplete, inaccurate, or non-existent stock cards, requisition, and issue vouchers (S11 forms), registers and monthly report forms.

In FY22, Afya Uwazi verified United States Government (USG)-funded tracer commodities delivered to **851** health facilities across **44** counties in Kenya and conducted inventory assessments in **279** health facilities across **18** counties. The tracer commodities were identified from a list provided by USAID and included (a) HIV/AIDS program treatment, testing commodities and laboratory reagents, specifically Tenofovir/ Lamivudine/ Dolutegravir (TLD)-90s and rapid test kits; (b) malaria commodities, i.e., artemether lumefantrine (ALs), long-lasting insecticide-treated bed nets (LLINs), and malaria rapid diagnostic test kits (mRDTs); and family planning commodities, specifically contraceptive implants.

Overall findings showed that delivery and handover of HIV/AIDS, malaria, and family planning commodities from the transporter to the health facility presented a low risk across the three program areas. However, capturing of commodity receipts into stock cards and stock accuracy presented a modest to medium risk for HIV/AIDS program commodities and a modest risk for malaria and family planning commodities. The total value of USG-funded tracer commodities verified was $6.93 million. Out of these, the total value of commodities at risk

was $1.46 million (21%). The risk was primarily due to poor documentation at the health facility.

In conclusion, Afya Uwazi made considerable achievements during its first year of implementation, specifically in developing the RACF and TPM platform, conducting field visits to health facilities in 44 counties, and disseminating findings, risk ratings and scorecards to all 44 counties visited. The evidence generated informed USAID decision to pivot the focus of TPM towards more in-depth inventory management assessments, where higher risks were identified, compared to risks associated with delivery, transportation, and handover processes from the warehouses to the last mile.

Introduction

The *Afya Uwazi* – Kiswahili for 'openness' and 'transparency' – activity is a task order awarded by USAID in July 2021 to conduct third-party monitoring (TPM) for the health supply chain in Kenya (late in the project year, the TPM scope was modified to include Covid-19 activities, which are not included in this report). The task order provides USAID, the Government of Kenya (GOK), counties and other stakeholders with tools for monitoring, analyzing, and visualizing supply chain performance and risks. Afya Uwazi visits health facilities to assess the quality of deliveries made by USAID-contracted warehousing and distribution partners, verify, and assess inventory management practices for HIV, malaria, TB, laboratory, maternal and child health in both public and private non-profit health facilities at the last mile. Afya Uwazi uses a set of tools to collect data on supply chain risks and assess inventory management practices at the health facility.

Afya Uwazi is implemented by the American Institutes for Research, which is a not-for-profit organization that conducts research to generate and use rigorous evidence in areas of health and education to create a more equitable world. Afya Uwazi activities are implemented by a core team comprising of three key personnel: the Chief of Party (COP), monitoring, evaluation, and learning (MEL) Specialist and a Finance Manager. The project has two additional professional staff, a Health Supply Chain Expert (HSCE) and a project manager. The core team is supported by a research manager and two team leads who coordinate and supervise field activities conducted by trained data collectors hired on a short-term basis. The project operates from an office located in Nairobi, Kenya.

Activities implemented in FY22

Strategic Engagement with Stakeholders

In conjunction with USAID, Afya Uwazi obtained a formal introduction to the Council of Governors (COG) from the Ministry of Health (MOH) leadership and worked collaboratively with Afya Ugavi and other supply chain partners to establish contacts with the health products and technology units (HPTU), county health management teams (CHMT) and county pharmacists of all 44 counties visited in FY22. These interactions entailed introducing Afya Uwazi task order to the counties, explaining its scope of work and seeking concurrence of the CHMTs to conduct unannounced visits to health facilities sampled for commodity verifications and inventory management assessments.

Afya Uwazi participated in annual work planning workshops for Afya Ugavi and MEDS and identified areas of collaborations. During these workshops, Afya Uwazi presented on TPM findings on commodity verifications and risks identified and clarified its scope of work. Afya Uwazi also engaged with the USAID regional supply chain consultants who took the lead in disseminating Afya Uwazi feedback to county HPTUs. Afya Uwazi participated in the bi-weekly

USAID order progress meetings hosted by MEDS and the weekly supply chain partners strategy meetings organized by USAID.

Afya Uwazi also established contacts with some service delivery partners and learnt more about identified risks in the supply chain, challenges in data collection, and opportunities related to the emerging HPTUs across various counties covered by the partners. Afya Uwazi met regularly with the COR and A/COR to get clarifications and guidance on USAID expectations and priorities from the TPM activities. Afya Uwazi aligned its activities to match USAID priorities and shared its findings and reports before making the final submissions.

Developed a Risk and Control Framework

Afya Uwazi developed a Risk and Control Framework (RACF) that identifies the range of typical risks across the downstream health supply chain. The RACF describes what data will be collected and how the data collected will be used to measure the risks in the supply chain by assigning risk scores to the different risk types according to likelihood and impact i.e., the algorithm for estimating risk scores. The RACF also seeks to identify control gaps and appropriate response measures and what actions the different supply chain stakeholders need to take to mitigate risks.

Afya Uwazi used the RACF to classify supply chain risk on a 5-point graduated scale, from low risk, modest risk, medium risk, high risk to critical risk. These levels were assigned different color codes starting with green for low risk to red for critical risk; where data is not available, the RACF uses a grey color code. To develop the RACF, Afya Uwazi reviewed key supply chain policy guidance documents and supply chain risk mitigation documents including the *Health Products and Technologies Supply Chain Strategy 2020 – 2025*, *Guidelines on the Management of Health Products and Technologies in Kenya*, the *Supportive Supervision Manual for Health Products and Technologies*, and the Ministry of Health (MOH) data capture and reporting tools, among others.

The RACF kept evolving as Afya Uwazi commenced field visits, starting with commodity delivery verifications which had not been factored in the original structure of the RACF. Therefore, Afya Uwazi routinely adapted the RACF based on refinements to the data collection tools, experience from field data collection, analysis and emerging contextual information and used this framework to set expectations for supply chain accountability and guide implementation of its activities including sampling health facilities based on risks.

Established and implemented the commodity surveillance system

In FY22, Afya Uwazi had originally planned to conduct field visits to 120 health facilities across the country selected through a risk-based methodology. However, based on discussions and guidance from the USAID COR and A/COR, the task order pivoted to commodity delivery verifications, planned immediately after conclusion of a distribution cycle of USG commodities

by MEDS and other warehousing and distribution partners. While this approach stretched the task order resources and capacity, it resulted in rapid coverage of many counties and health facilities across the country. Out of the 47 counties, Afya Uwazi managed to cover 851 health facilities in 44 counties by the end of the project year. The geographic coverage of 269 (91%) of Kenya's 295 subcounties is a marker of Afya Uwazi's deliberate efforts to reach difficult-to-reach last mile health facilities across the country. Multiple visits were made to 110 facilities based on distribution cycles of the different tracer commodities and their identified risks.

Monitoring and verification field visits commenced in December 2021 after an initial delay advised by the USAID Mission, attributed to sensitivities around high-level discussions between the Mission and the MOH, and the need to establish relationships with government counterparts. Before embarking on the inaugural field visits, Afya Uwazi developed and piloted data collection tools and trained an initial cohort of data collectors who would then be deployed on a need basis to conduct field visits. Sampling of health facilities to be visited was based on the volume and value of commodities distributed to the health facilities with consideration made for coverage of facilities at all levels, from clinics at level 2 to national referral hospitals at level 6.

Development and piloting of data collection tools

Afya Uwazi developed a commodity delivery verification tool, called the proof of delivery (POD) checklist, to collect data on the following key stock receipt quality assurance parameters: quantities of commodities received against the quantity supplied, quantity captured into the facility stock keeping records, stock card balance versus physical stock count on the day of visit, stock-outs of tracer commodities and any evidence of commodities damaged during shipment.

Similarly, Afya Uwazi developed an inventory management assessment tool (IMAT) to capture data on completeness and accuracy of stock keeping records and month-end reports. The following parameters were assessed: availability of MOH commodity registers (Daily Activity Registers (DAR), Consumption Data Report & Requisition (CDRR), positive and negative adjustments and accompanying requisition and issue vouchers (S11 forms), quantity of tracer commodities received during the period under review versus consumption data, expiries, loses, wastages and stock holding.

Both the POD checklist and the IMAT were piloted, refined and deployed in generating evidence on the performance and risks in the health supply chain.

Training of data collection teams

Afya Uwazi conducted two rounds of intensive training for data collectors. In the first round of training, ten field data collectors and two field team leaders were trained on the Afya Uwazi data collection tools and field procedures. The training also covered aspects of preparation for field visits, the use of KoBoCollect App for data collection and synchronization of the data

to a cloud server, how to conduct interviews, infection prevention and control measures (against COVID-19) and a mock data collection exercise. The training included a module on ethical conduct of research on human subjects, as a standard good practice even though no person-level data was collected or stored. Afya Uwazi required each participant to complete a mandatory online research ethics course and present a certificate of completion by the last day of the training. The Afya Uwazi core team provided the data collectors further on-the-job training and mentorship during the initial field monitoring visits in December 2021. The core team also used the field experience to refine the POD checklist, identify gaps in the training provided to the data collectors and develop standard operating procedures (SOPs) for data collection.

In the second round of training, Afya Uwazi trained 28 data collectors (14 males and 14 females) on the use of its refined data tools, as a key step to scaling up data collection. The training was held in Nakuru from March 21 to 25, 2022. The data collectors were divided into two groups, based on documented experience in data collection and the scores in an aptitude test administered online prior to the training. The first group comprising of 17 data collectors underwent a five-day training on how to conduct in-depth supply chain system assessment including warehousing and storage, inventory management and logistics management information system (LMIS) functions. The second group of 11 data collectors had an intensive two-day training on commodity delivery verifications using the POD checklist developed by Afya Uwazi in November 2021 and refined following the first round of data collection.

Afya Uwazi developed a training package that included the following: introduction to the Kenyan health system; introduction to health commodity logistics and supply chain; overview of the storage and warehousing and LMIS modules of the USAID national supply chain assessment tool kit; orientation on the MOH data collection and reporting tools for tracer commodities; how to complete the proof of delivery (POD) checklist and inventory management assessment tools using the KoBoCollect App on Android tablets and general conduct during data collection.

Training and mentorship of the data collectors continued throughout the year, especially during the after-action reviews following each round of field monitoring visits. The data collectors gave their experiences and observations during the data collection and Afya Uwazi core team provided further guidance on unique experiences and observations. These debrief sessions were also valuable learning opportunities. Afya Uwazi held two virtual and three in-person half-day training sessions with the data collectors to enhance their skills in completing the POD checklist, ensure data confidentiality during field work, including topics on capturing meaningful photos. The team also mentored the data collectors on how to interact with health workers during data collection and how to work together as a team.

Sampling of facilities

Afya Uwazi liaised with MEDS and Imperial Managed Solutions (IMS) to obtain a list of the latest distributions, reviewed the volume of commodities distributed and previously identified risks to select facilities in each round of distribution. Afya Uwazi reviewed additional data from KHIS and identified facilities at higher risk based on data submitted. The final sampling of health facilities for site visits was based on (a) the value and volume of USG commodities distributed; (b) blocking by KEPH levels of the health system, from level 2 dispensaries to level 5 and 6 tertiary referral hospitals; (c) geographic distribution across sampled counties. Of the three counties not visited – West Pokot, Elgeyo Marakwet and Lamu – the reasons included low volumes of USG commodities distributed, such that visits and data from those counties would not have provided value to USAID, and/or ongoing local instances of insecurity that would have hampered data collection and put enumerators at risk.

Data collection and analysis

Data collection teams comprising of an enumerator and a team lead were recruited on a short-term basis to verify commodities delivered, stocks of verified commodities available at the health facilities and document relevant supply chain related practices observed at the facilities. All data were captured electronically using tablets and transmitted to a secure AIR server. Data pipelines were designed to facilitate data cleaning, analysis, and estimation of selected supply chain risks. At the end of each round of commodity verification visits, Afya Uwazi's risk algorithm updated the risk ratings and visualizations on the dashboard. The findings from the commodity verification visits were also summarized in county and health program specific score cards.

Commodity Delivery Verifications

In FY22, Afya Uwazi verified 1608 commodity deliveries to 851 health facilities (Figure 1).

Figure 1: Commodity delivery verifications in numbers

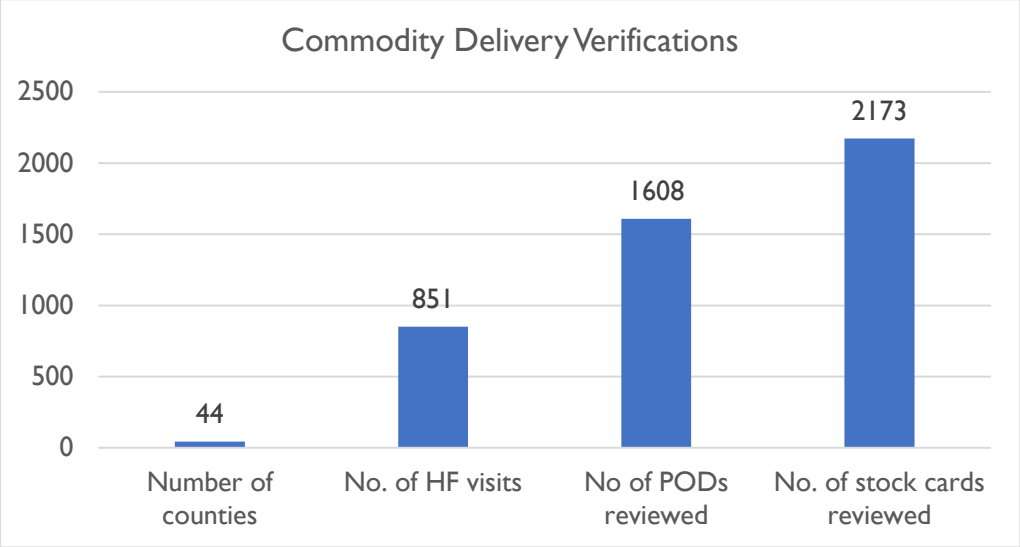
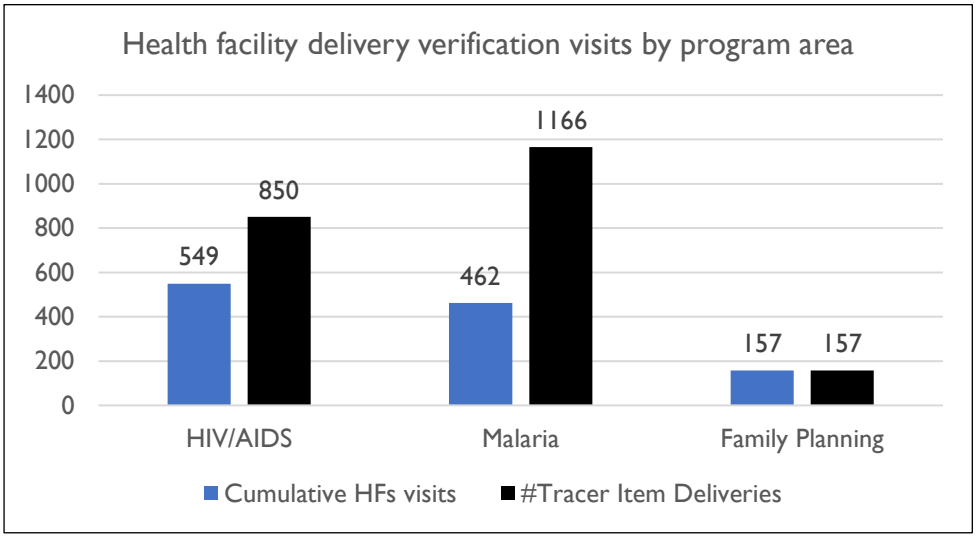


Figure 1 shows the number of health facilities and commodities verified by the health program area. Of the 850 HIV tracer commodities verified, stock cards were available for 84% of the items. Eighty-five percent of the stock cards available were updated with the most recent delivery of the commodity verified. However, only 59% of the stock cards were accurately updated resulting in a record keeping validity of 42%.

Afya Uwazi verified 1,166 malaria program commodities. Eighty-five percent of the malaria program commodities verified had stock cards available and 90% of the stock cards available had been updated with the most recent delivery of the commodities verified. Only 70% of the stock cards had an accurate stock balance compared to the physical count done on the day of the visit resulting in a record keeping validity of 53%.

Figure 2: Number of health facilities and tracer items verified by program area



Eighty percent of the family planning commodity verified (1-rod implants) had stock cards available. Ninety-four percent of the stock cards had been updated with the most recent delivery. Stock card accuracy was high at 96% resulting in a record-keeping validity of 73%. In most health facilities across the country, the family planning commodity had been stocked out for more than six months and was anticipated to be at an elevated risk of diversion. It was therefore verified within two weeks of delivery, leading to high stock accuracy and record keeping validity compared to the other tracer commodities verified given that most health facilities opened and completed new stock cards upon receipt of their order.

Estimated value of USG-funded commodities found to be at risk

Afya Uwazi sampled its verifications on US government donated pharmaceutical commodities worth **$142,152,931** between June 2021 and July 2022 based on data provided by MEDS, USAID's distribution contractor. HIV/AIDS, malaria and family planning commodities accounted for $81,316,663 (57%) of the total value of USG-funded commodities while TB, laboratory and other pharma accounted for the remaining $60,836,267 (43%) of commodities

funded between June 2021 and July 2022. Afya Uwazi verified 8.5% of the tracer commodities for HIV/AIDS, malaria, and family planning commodities (Table 1).

Table 1: Value of HIV/AIDS, malaria and family planning tracer commodities verified and value at risk

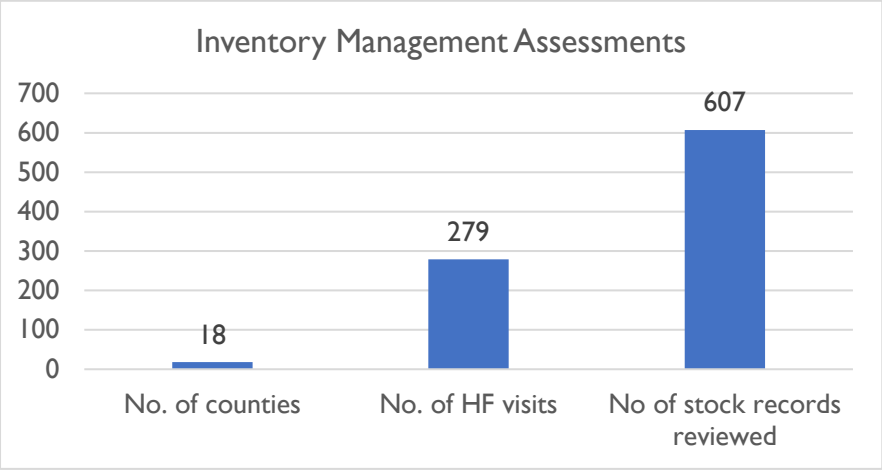
Health Program	Value of ALL USG Program Commodities Distributed ($) *	Value of Tracer Commodities Verified ($)	Percent of Tracer Commodities Sampled	Value at Risk ($)	Percent at Risk
HIV/AIDS	73,850,233	5,659,243	7.6%	1,229,735	22%
Malaria	6,109,813	832,129	13.6%	161,944	19%
Family Planning	1,356,617	437,946	32.3%	70,958	16%
TOTAL	81,316,663	6,929,317	8.5%	1,462,637	21%

** Total Value of commodities donated by the United States Government June 2021 to July 2022*

Inventory Management Assessments

In-depth inventory management assessments were conducted in 279 health facilities across 18 counties, all of which had been visited earlier for commodity delivery verifications (Figure 3). These assessments found significant risks to the management of USG-donated health commodities at the last mile, mostly attributed to poor record keeping. Record keeping for inventory management of HIV and malaria commodities assessed at health facilities requires significant improvement, starting with availability and use of stock cards and ensuring accuracy in recording receipts, issues, adjustments, and other transactions.

Figure 3: Inventory management assessments in numbers



Major findings from this exercise included:

- 32% of the tracer items reviewed did not have a daily activity register or DAR for recording routine dispensing to patients
- 33% of the tracer items did not have a monthly stock report or CDRR for March 2022

- 71% of tracer item records were found to match when the quantity dispensed based on the service statistics captured in the DAR was compared with the consumption data captured in the CDRR available at the health facility. However, only 64% of the CDRR value for 'quantity dispensed' matched with the entry in the report extracted from the KHIS for the same item and review month.
- 51% of tracer commodity records showed meaningful differences in stock balances and consumption data arising from transactional inaccuracies, representing a risk for loss of USG-donated health commodities after delivery to the health facilities.
- Only 63% of the positive adjustments and 69% of negative adjustments had been documented with a verifiable requestion and issue voucher (S-11) on file.

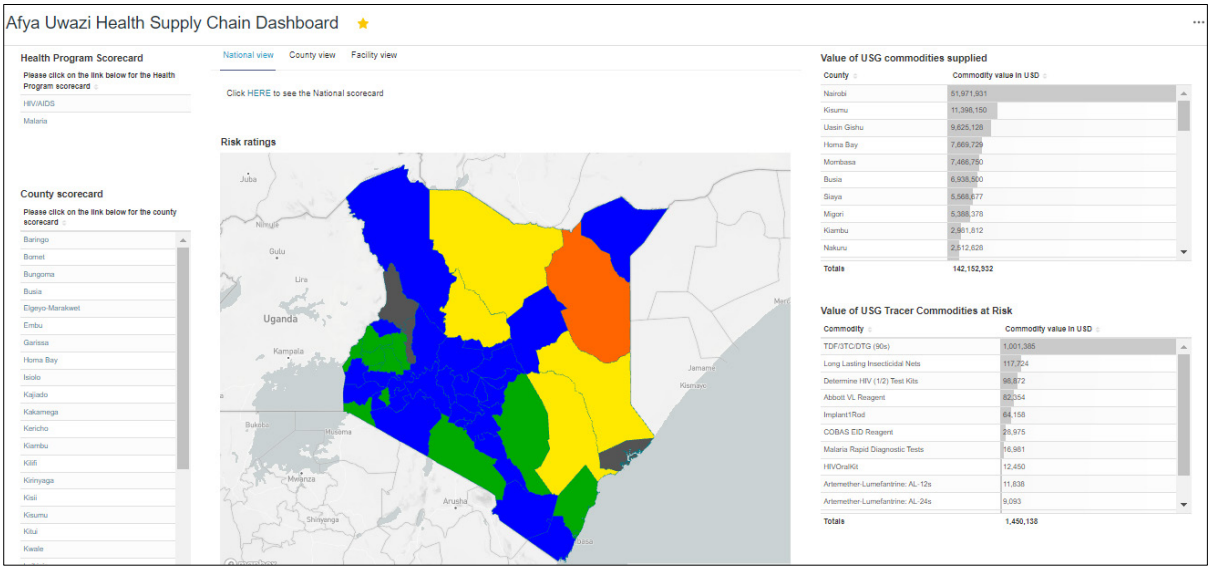
It is evident from this inventory management assessment that many of the data elements captured in month-end reports submitted by health facilities were not supported by source documents at the health facility, putting to question the reliability of these reports and presenting a significant risk to USG-funded commodities. While most of these inaccuracies could be attributed to poor record keeping, triangulation of stock receipt data, consumption data and service statistics would provide a better estimate of how much stock is unaccounted. In Year 2 of implementation, Afya Uwazi intends to focus more effort on data triangulation to accurately estimate risks of fraud, abuse, and waste of USG-funded health commodities.

Developed the TPM Platform

Afya Uwazi developed the TPM platform including data processing pipelines, data analysis processes and data visualization on a web-based dashboard. The Afya Uwazi TPM dashboard visualizes the actual performance and estimated risks for USG-funded commodities across counties and last-mile health facilities. The dashboard can be accessed at the following link (password-protected access for assigned users):
https://dashboards.afyauwazi.com/superset/welcome/.

The dashboard displays the value of USG commodities supplied by county, health facility and health program and the value of tracer commodities at risk. Additionally, TPM findings are summarized in the form of scorecards for each county and health program area (HIV/AIDS, malaria, and family planning). Afya Uwazi routinely updates and shares the county supply chain scorecards and feedback reports with recommendations for action by HPTUs, working in collaboration with other USAID IPs. Afya Uwazi granted access rights to the TPM dashboard to USAID and key supply chain actors.

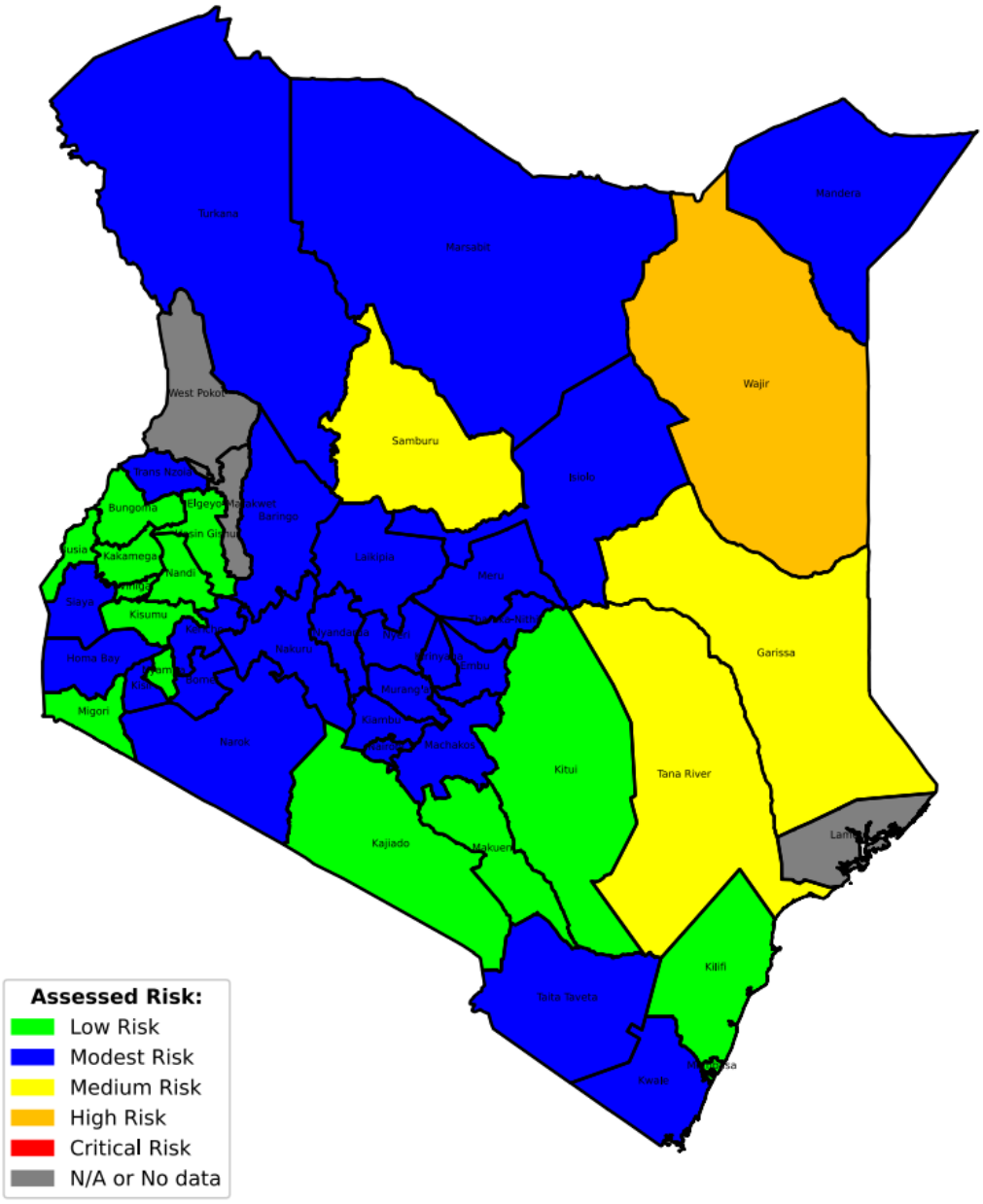
Figure 4: A screenshot of the Afya Uwazi Health Supply Chain Dashboard



In quarter three, Afya Uwazi oriented USAID health supply chain partners on the TPM dashboard and demonstrated how to navigate the different visualizations of risks displayed on the dashboard (Figure 4). The supply chain partners included USAID regional supply chain consultants, Afya Ugavi, MEDS, IMS, Mezzanine (SVS) and the global health supply chain procurement and supply management (GHSC-PSM). Afya Uwazi also shared with the participants a quick guide on how to navigate the dashboard, how to download the national, county and health program scorecards from the dashboard. Afya Uwazi also used the opportunity to explain how to interpret the information displayed on the dashboard including the data on value of commodities supplied nationally, by county and by health program, the corresponding risk estimates, and other key performance indicators. The USAID partners provided immediate feedback on some aspects of the dashboard data such as possible different interpretations of the financial value risk. Afya Uwazi continues to undertake further development and refinement of the dashboard based on feedback received from these stakeholders.

The map below (Figure 5) and related charts show the different supply chain risk ratings by county and health program area, color-coded based on the RACF, that were estimated from primary data collected during verification of tracer commodities.

Figure 5: Screenshot of counties color-coded by risk rating



Kenya counties color coded by risk rating

Figure 6: HIV/AIDS program tracer commodities

Risk Type	Risk Rating			
	Determine	OraQuick	TLD-90s	VL & EID Supplies
Primary Risk Overall	Modest risk	Modest risk	Modest risk	Modest risk
Delivery Risk	Low risk	Low risk	Low risk	Low risk
Receipt Record Risk	Modest risk	Medium risk	Modest risk	Medium risk
Stock Accuracy Risk	Modest risk	Modest risk	Modest risk	Modest risk
Stock Recording Risk	Modest risk	Modest risk	Modest risk	Medium risk

Figure 7: Malaria program tracer commodities

Risk Type	Risk Rating		
	ALs	LLINs	mRDTs
Primary Risk Overall	Modest risk	Modest risk	Modest risk
Delivery Risk	Low risk	Low risk	Low risk
Receipt Record Risk	Modest risk	Modest risk	Modest risk
Stock Accuracy Risk	Modest risk	Modest risk	Modest risk
Stock Recording Risk	Low risk	Modest risk	Modest risk

Figure 8: Family planning program tracer commodities

Risk Type	Risk Rating
	Implant1Rod
Primary Risk Overall	Modest risk
Delivery Risk	Low risk
Receipt Record Risk	Modest risk
Stock Accuracy Risk	Low risk
Stock Recording Risk	Modest risk

Brief definitions

- *Delivery Risk - Quantity not received in full as supplied by MEDS*
- *Stock Recording Risk - Stock card not available or accessible*
- *Receipt Record Risk - Stock card not updated at receipt of new deliveries*
- *Stock Accuracy Risk - Stock card balance inaccurate (does not match physical count)*

Collaboration, Learning and Adaptive Management

Afya Uwazi's learning agenda sought to answer two broad questions, that is, "*How has Afya Uwazi adopted and adapted best practices for conducting TPM and sharing results for improvement?"* and *"In what ways do Afya Uwazi's TPM activities improve health supply chain accountability?"* The Afya Uwazi team held five internal pause-and-reflect sessions to deliberate on TPM processes. Specifically, the pause-and-reflect sessions sought to clarify Afya Uwazi field implementation strategy, document emerging/unforeseen risks that would inform updating the RACF, document additional stakeholders identified during county visits as well as determine opportunities and barriers to engagement with stakeholders.

Additional probing questions helped elicit views on follow-up visits to some facilities that had higher risks, refine future procedures for data collection, and informed the development and administration of the inventory management assessment tool. Key lessons learned included working closely with the team leads to plan and coordinate field work in order to enhance their field coordination skills; advanced planning for field work in Arid and Semi-Arid Lands (ASALS) while leveraging on other AIR research activities in these regions; emerging risk (such as co-mingling - transportation of non-USG commodities, non-compliance with MEDS contract on last mile delivery, and deliveries made to the wrong health facilities), and lastly, the inclusion of additional stakeholders, i.e., clients and health facility staff, and cluster sites such as faith-based operated networks of health facilities.

Afya Uwazi also conducted three after action reviews with the data collectors to review the data collection processes and experiences in the field. The action reviews provided opportunities to refine the health facilities sampling plan, revise the field schedule considering security concerns in ASAL counties, and revision of the POD checklist.

The Afya Uwazi team provided orientation sessions on the TPM dashboard to various USAID's supply chain stakeholders and received feedback on navigating the dashboard, improving the dashboard user-friendliness, provided clarity on the key performance indicators presented, as well as presentation of additional information that should be included in the scorecards such as feedback to counties, and recommendations.

Dissemination of Findings

Afya Uwazi provided regular feedback to USAID, and through the COR and A/COR, to Afya Ugavi, MEDS, and other USAID supply chain partners on the findings from the commodity delivery verifications and monitoring visits to the health facilities. Afya Uwazi disseminated customized supply chain scorecards and feedback reports to all county HPTUs in the 44 counties visited. The feedback reports summarized the scope of the field visits, the list of health facilities visited, commodities verified, risks identified and recommendations to the county HPTU. The county scorecards presented the value of USG-funded tracer commodities, supply chain risk rating and five key performance indicators (KPIs):

- Value of unaccounted tracer commodities
- Percentage of stock cards available/accessible

- Percentage of stock cards updated
- Stock card accuracy
- Record keeping validity.

Twelve of the 44 counties responded acknowledging receiving the reports and/or requesting follow-up meetings and further information. Afya Uwazi worked through the regional supply chain consultants engaged by USAID to further disseminate feedback reports and county scorecards at county level. The consultants attended HPTU meetings for 6 counties (Kiambu, Kirinyaga, Baringo, Kwale, Kilifi and Trans Nzoia) in person and discussed the scorecards and feedback reports with county teams, which subsequently agreed on actions to address the recommendations.

Subsequently, Afya Uwazi received feedback from counties on the supply chain scorecards and reports relayed through the USAID consultants or follow-on emails. The feedback dwelt on Afya Uwazi interaction with CHMTs with the HPTUs expecting more face-to-face engagements, expansion of the list of commodities tracked and disaggregation of the data presented in the feedback reports and the TPM dashboard. Afya Uwazi clarified its role as a third-party monitor thus having a limited opportunity to interact directly with the counties to maintain an independent eye. Afya Uwazi will accommodate the requests made by the counties in future modifications of the dashboard.

Afya Uwazi compiled six reports of the commodity delivery verification and one report of inventory management assessments, providing detailed findings from the field visits, and made more than 80 recommendations to USAID, and its service delivery and supply chain strengthening partners. About a quarter of the recommendations were directed at MEDS and its warehousing and distribution partners, based on health facility staff feedback on their experience working with MEDS and its transport service providers and independent observations made by Afya Uwazi data collectors.

As a result of the feedback and evidence from Afya Uwazi, MEDS and its subcontractors fully addressed more than half of the recommendations. For example, MEDS and its 3PL partners harmonized their delivery notes to include relevant information required to verify health commodities during receiving at the last mile. In addition, MEDS revised its list of prequalified transport service providers after sanctioning some of its subcontractors for failing to deliver commodities to the last mile, MEDS was also able to use some of the findings from Afya Uwazi to trace deliveries made to the wrong facilities and ensured they got to the intended facilities.

Afya Uwazi participated in annual work planning sessions organized by Afya Ugavi and MEDS and shared evidence generated from its TPM activities, recommendations for action and areas of collaboration in line with the TPM's second learning question *"In what ways do TPM activities improve health supply chain accountability?"* Afya Uwazi provided specific recommendations for USAID, its supply chain partners and the county HPTUs for action.

Produced Periodic Reports

Afya Uwazi submitted monthly progress reports summarizing the task order actions using a standard template and performance monitoring framework. The task order also compiled and submitted seven detailed reports on verification and monitoring activities conducted in FY22. The scope and findings of the seven reports are summarized in Annex 3.

Key Lessons Learned

Afya Uwazi found a low risk of commodity loss during the distribution and handover process from MEDS warehouse through its third-party logistics (3PL) to the health facilities. Specific instances of losses and potential fraud were reported to the USAID COR and A/COR. Moreover, inventory management at health facilities documented modest to medium risks of loss due to poor documentation and failure to record commodity movements and transfers. Going forward in FY23, Afya Uwazi will pivot towards conducting a larger number of inventory assessments and fewer commodity verifications which was the focus in FY22, in order to document potential mismanagement and/or leakage of health commodities post-delivery at the last mile.

In FY23, Afya Uwazi will focus on only 25 counties across the country that receive high volumes of USG-funded commodities based on the risk profiles. This reduced focus aligns with the priorities of the primary USG programs (PEPFAR and PMI) that fund USG-donated health commodities, as well as the resource constraints for the task order in the coming year.

As a TPM activity, Afya Uwazi has limited opportunities to interact and share its findings and recommendations to the counties. Afya Uwazi will therefore channel its findings and recommendations to the counties through the identified USAID-funded supply chain and service delivery partners on the ground. These IPs have the resources and existing relationships to support counties with technical assistance, capacity building and supply chain tools that were found to be lacking.

Afya Uwazi learned that its periodic reports were too lengthy and that the Mission sought shorter reports produced immediately after data collection. Afya Uwazi has revised its approach to include a debrief on key issues identified after each round of field visits and a short (1-3 pages) flash reports produced within 10 days upon completion of an activity. This will provide an opportunity for USAID, IPs, and other stakeholders to take timely corrective actions to reduce supply chain risks.

Summary and Conclusions

Afya Uwazi accomplished all the activities planned for FY22, except those that were removed based on USAID direction (as documented in the revised BY 1 workplan). Based on guidance from USAID, Afya Uwazi conducted commodity verifications in a more extensive number of health facilities than planned. The extensive coverage of this activity was made possible by

reprogramming funds from other activities that were no longer in scope based on the revised workplan. Per the MEL framework, (Annex 4) Afya Uwazi exceeded the targets set in three of the tasks that had set targets. In one task, tracking tracer commodities, Afya Uwazi tracked 12 of the 25 products on the list of tracer commodities. The tracer commodities that were not tracked were either not procured with USG-funding in FY22 or were not distributed by MEDS and partners during the 15-month period. These included products used in maternal and child and tuberculosis programs.

In conclusion, Afya Uwazi delivered on its commitments and made considerable achievements during its first year of implementation, specifically in developing the RACF and TPM platform, conducting field visits to health facilities in 44 counties, and disseminating findings, risk ratings and scorecards to all 44 counties visited. The evidence generated informed USAID decisions to pivot the focus of TPM towards more in-depth inventory management assessments, where higher risks were identified, compared to risks associated with delivery, transportation, and handover processes from the warehouses to the last mile.

Annex 1: County Score Card

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Nairobi County

Supply Chain Scorecard

USG commodity value, delivered to Nairobi County

Program Area	Total Cost Value	
	USD	KSH
Family Planning	170	20,107
HIV/AIDS	13,055,109	1,480,908,381
Laboratory	38,675,821	4,517,715,699
Malaria	40,899	4,608,275
Other Pharma	1,728	198,406
TB	198,203	22,742,336
Total	51,971,931	6,026,193,203

Data Source: MEDS Issues Data: Period: Jul-2021 - to - Jul-2022

Summary: Quality assurance and verification

Program Area	% of sampled delivery notes fully supplied	Date of Recent Assessment
HIV/AIDS	100.0%	19-May-22
Malaria	100.0%	17-May-22

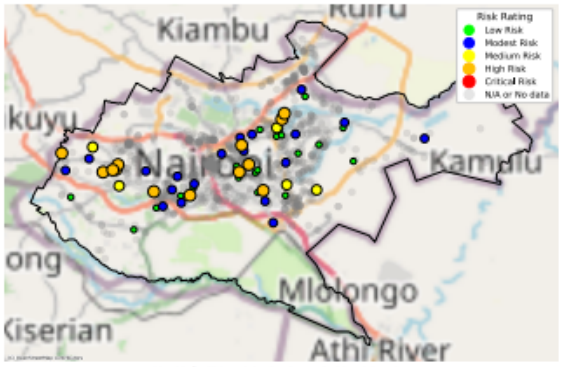
Data Source: Post-Delivery Verification Data: Period: 14-Dec-2021 - to - 19-May-2022

Supply Chain risk ratings

Risk Type	Risk Rating
Primary Risk Overall	Modest risk
Delivery Risk	Low risk
Receipt Record Risk	Medium risk
Stock Accuracy Risk	Modest risk
Stock Recording Risk	Modest risk
Secondary Risk Overall	Low risk
Concordance Risk	Modest risk
Internal Consistency Risk	Low risk
Overall Risk	Modest risk

Definitions

Delivery Risk - Quantity not received in full as supplied by MEDS
Stock Recording Risk - Stock card not available or accessible
Receipt Record Risk - Stock card not updated at receipt of new deliveries
Stock Accuracy Risk - Stock card balance does not match physical count
Concordance Risk - Opening balance does not match previous month closing balance in KHIS data
Internal Consistency Risk - End month stock balance is not equivalent to all stock that was available during the month, less all issues/deductions in KHIS data
KHIS - Kenya Health Information System



Health facilities visited color coded by risk rating

Key performance indicators (KPI)

KPI 1 **Value of USG tracer commodities at risk: 27%**

In verifying 166 deliveries of USG health commodities through unannounced visits to 67 health facilities across Nairobi County, out of the Ksh 133,500,264 worth of deliveries, 27% of USG commodities equivalent Ksh 36,483,046 (US$ 321,985) could be at risk. This represents risks due to poor documentation as well as potential losses.

KPI 2 **Stock card available and accessible: 65%**

108 (65%) of 166 USG commodity deliveries had stock cards made available for review.

KPI 3 **Stock card updated: 93%**

Of the 108 stock cards reviewed, 8 (7%) had not been updated with most recent delivery of USG health commodities.

KPI 4 **Stock card accuracy: 63%**

Only 63 (63%) of 100 completed stock cards had accurate stock balances when compared to the physical count independently conducted by the external data collection team.

KPI 5 **Record-keeping validity: 38%**

Of the 166 deliveries of USG commodities assessed, the 63 of accurately completed stock cards represent a total record-keeping validity rate of 38%.

Notes & Recommendations

- Ensure stock cards /records are always available and accessible
- Ensure accuracy of stock records by capturing all issues from the health facility stores as soon as they happen
- Improve filing of documentation for easy retrieval when required
- Ensure stock cards /records are in place for all commodities
- Ensure accuracy of stock records by capturing all receipts from the central warehouse immediately

Prepared Oct 25, 2022, data from Afya Uwazi data collection and analysis, in collaboration with other USAID implementing partners

Annex 2: Health Program Score Card (example: Malaria)

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Malaria Program

Kenya Supply Chain Monitoring Scorecard

Value of USG Malaria Program Commodities Distributed

Commodity Name	Total Cost Value	
	USD	KSH
ALs	1,616,371	182,419,488
Injectables	449,089	50,532,383
LLINs	3,236,581	368,057,382
mRDTs	807,772	91,334,959
Total	6,109,813	692,344,212

Data Source: MEDS Issues Data: Period: 14-Aug-2021 - to - 21-Jun-2022

Summary: Quality Assurance and Verification

Commodity type	% of sampled delivery notes fully supplied	Date of Recent Assessment
ALs	100.0%	29-Jul-22
LLINs	98.7%	20-May-22
mRDTs	99.4%	28-Jul-22

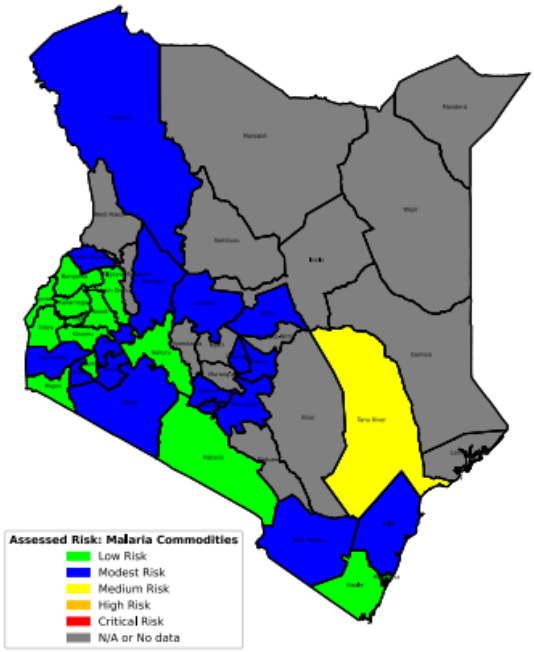
Data Source: Post-Delivery Verification Data: Period: 14-Dec-2021 - to - 29-Jul-2022

Supply Chain Risk Ratings

Risk Type	Risk Rating		
	ALs	LLINs	mRDTs
Primary Risk Overall	Modest risk	Modest risk	Modest risk
Delivery Risk	Low risk	Low risk	Low risk
Receipt Record Risk	Modest risk	Modest risk	Modest risk
Stock Accuracy Risk	Modest risk	Modest risk	Modest risk
Stock Recording Risk	Low risk	Modest risk	Modest risk
Secondary Risk Overall	Low risk	Low risk	TBD
Concordance Risk	Modest risk	Modest risk	TBD
Internal Consistency Risk	Low risk	Low risk	TBD
Overall Risk	Low risk	Low risk	Modest risk

Definitions

Delivery Risk - Quantity not received in full as supplied by MEDS
Stock Recording Risk - Stock card not available or accessible
Receipt Record Risk - Stock card not updated at receipt of new deliveries
Stock Accuracy Risk - Stock card balance does not match physical count
Concordance Risk - Opening balance does not match previous month closing balance in KHIS data
Internal Consistency Risk - End month stock balance is not equivalent to all stock that was available during the month, less all issues/deductions in KHIS data
KHIS - Kenya Health Information System



Data Source: Post-Delivery Verification Data: Period: 14-Dec-2021 - to - 29-Jul-2022

Key Performance Indicators (KPI)

KPI 1 **Value of USG tracer commodities at risk: 19%**

Of 1166 deliveries of USG health commodities verified through unannounced visits to 462 health facilities across the country, USG commodities valued at Ksh 18,552,463 (US$161,944) could be at risk in 95,329,468 (19%) of those deliveries. This represents risks due to poor documentation as well as potential losses.

KPI 2 **Stockcard available and accessible: 85%**

993 (85%) of 1166 USG commodity deliveries had stock cards that were made available for review.

KPI 3 **Stockcard updated: 90%**

Of the 993 stock cards reviewed, only 101 (10%) had not been updated with most recent delivery of USG health commodities.

KPI 4 **Stock card accuracy: 70%**

Only 622 (70%) of 892 completed stock cards had accurate stock balances when compared to the physical count independently conducted by the external data collection team.

KPI 5 **Record-keeping validity: 53%**

Of the 1166 deliveries of USG commodities assessed, the 622 of accurately completed stock cards represent a total record-keeping validity rate of 53%.

Notes & Recommendations

- Lengthy stock out periods for LLINs results in some pregnant women and infants missing out on LLINs. Provide clear guidance who should receive USG-funded LLINs once products are back in stock.
- Health facility staff expressed concerns about low order fill rates for ALs in endemic areas near Lake Victoria, resulting in shortages during peak malaria seasons. Further evidence describes "pushed deliveries" (unnecessary allocation) of ALs in non-endemic areas, especially Nairobi County, resulting in expiries and wastage.

Prepared October 27, 2022, data from Afya Uwazi data collection and analysis, in collaboration with other USAID implementing partners

Annex 3: Summary of Commodity Delivery Verifications & Inventory Management Assessments Reports

#	Data Collection Period	Commodities verified	Counties visited	Key Findings
1.	Dec 14, 2021, to Jan 7, 2022	TLD-90s, ALs, mRDTs, LLINs	Busia, Embu, Homa Bay, Kajiado, Kakamega, Kiambu, Machakos, Makueni, Meru, Migori, Nairobi, Tharaka Nithi, and Vihiga	172 health facilities visited for commodity delivery verifications • 82% of stock cards had been updated to capture the most recent delivery • 63% of stock cards had accurate stock balances
2.	Jan 31 to Feb 11, 2022	Determine HIV RTKs Laboratory reagents	Kajiado, Kiambu, Kitui, Machakos, Makueni, Murang'a, Nakuru, Narok and Nyeri	191 health facilities visited for commodity delivery verifications • 98% of the tracer commodities verified were received in full quantities • 77% of stock cards had been updated to capture the most recent delivery • 69% of stock cards had accurate stock balances
3.	Feb 15 to Mar 1, 2022	Determine HIV RTKs TLD-90s LLINs	Garissa, Isiolo, Mandera, Marsabit, Samburu, Tana River and Wajir and Kilifi	37 health facilities visited for commodity delivery verifications • 97% of the tracer commodities were received in full quantities • 49% of stock cards had been updated to capture the most recent delivery • 50% of the stock cards had accurate stock balances
4.	Mar 24 to Apr 1, 2022	LLINs; Als; mRDTs TLD-90s Determine HIV RTKs; Ora-Quick HIVST	Embu, Kirinyaga, Kisii, Kwale, Meru, Mombasa, Nairobi, Nakuru, Narok and Taita Taveta.	170 health facilities visited for commodity delivery verifications • 99% of tracer commodities verified were delivered in full • 77% of tracer commodities assessed had stock cards available for review • 91% of stock cards had been updated to capture the most recent delivery • 66% of updated stock cards had accurate stock balances
5.	Apr 25 to May 27, 2022	LLINs; AL; mRDT TLD-90s Determine HIV RTKs Ora-Quick HIVST	Baringo, Bomet, Bungoma, Homa Bay, Kericho, Kisumu, Laikipia, Makueni, Meru, Mombasa, Murang'a, Nairobi, Nandi, Nyamira, Nyandurua, Nyeri, Siaya, Trans Nzoia, Turkana, Uasin Gishu.	262 health facilities visited for commodity delivery verifications • 88% of tracer commodities verified had stock cards available for review • 84% of stock cards had been updated to capture the most recent delivery • 66% of updated stock cards had accurate stock balances
6.	Apr 19 to May 24, 2022	LLINs; AL; mRDT TLD90s Determine HIV RTKs Ora-Quick HIVST	Busia, Homa Bay, Isiolo, Kajiado, Kakamega, Kiambu, Kilifi, Kitui, Machakos, Makueni, Migori, Mombasa, Murang'a, Nairobi, Nakuru, Nyeri, Tana River and Vihiga.	279 health facilities visited for inventory management assessment • 88% of tracer commodities reviewed had stock cards available • 51% of tracer commodities stock cards had significant transaction inaccuracies • 22% of tracer commodities assessed were stocked according to plan
7.	July 25 to 29 2022	1-rod Implant Als; mRDT TLD-90s	Kiambu, Murang'a, Tharaka Nithi, Kitui, Kisumu, Siaya, Homa Bay, Bungoma, and Kilifi.	183 health facilities visited for commodity delivery verifications • 84% of tracer commodities reviewed had stock cards available • 90% of stock cards had been updated to capture the most recent delivery • 66% of stock cards had accurate stock balances compared to physical count

Annex 4: Afya Uwazi Performance Monitoring Table for FY22

Indicator No.	Indicator	Achievement					Year to date			Life of project target
		Q1	Q2	Q3	Q4	Q5	Total (cumulative)	Target	Rate (%)	
01	Number of distinct counties visited	0	12	28	26	9	44	40	110%	47
02	Number of distinct sub-counties visited	0	70	145	112	51	269	-	-	295
03A	Number of ALL health facilities that received a monitoring visit for USG tracer commodities verification.	0	146	424	281	189	876	-	-	-
03B	Number of health facilities that received a successful monitoring visit for USG tracer commodities verification.	0	145	398	273	183	851	-	-	-
	• KEPH Level 2	0	30	116	73	53	256	-	-	-
	• KEPH Level 3	0	50	139	97	73	313	-	-	-
	• KEPH Level 4	0	59	133	98	54	266	-	-	-
	• KEPH Level 5	0	6	9	3	3	14	-	-	-
	• KEPH Level 6	0	0	1	2	0	2	-	-	-
03A	Number of health facilities that received a monitoring visit for HPT tracer commodities inventory management assessment.	0	0	0	279	0	279	-	-	764
04	Number of proof of delivery notes (POD/DN) verified	0	290	775	698	400	2166	n/a	n/a	n/a
05	Number of USG tracer commodities verified at the last mile**	0	8	11	10	7	12	n/a	n/a	25
	Number of health facilities that received post-delivery verification and monitoring visits for tracer commodities									
06A	PEPFAR: HIV/AIDS commodities									
06B	Adult ARV (TLD-90s)	0	81	135	93	141	399	-	-	-
06C	HIV (1/2) Determine RTKs	0	0	215	15	0	239	-	-	-
06D	Ora-Quick HIV Self-Testing Kits	0	0	62	21	0	91	-	-	-
06F	COBAS EID Reagents	0	0	3	0	0	3	-	-	-
06G	EID/VL Reagents	0	0	4	1	0	5	-	-	-
06H	PMI: Malaria commodities									

Indicator No.	Indicator	Achievement					Year to date			Life of project target
		Q1	Q2	Q3	Q4	Q5	Total (cumulative)	Target	Rate (%)	
06I	Artemether Lumefantrine: AL6s	0	26	27	58	10	120	-	-	-
06J	Artemether Lumefantrine: AL12	0	29	77	98	3	200	-	-	-
06K	Artemether Lumefantrine: AL18	0	29	73	83	0	176	-	-	-
06L	Artemether Lumefantrine: AL24	0	29	30	91	13	161	-	-	-
06M	Malaria rapid diagnostic tests (mRDT)	0	27	29	65	34	155	-	-	-
06N	Long-lasting insecticidal treated nets (LLIN)	0	64	98	138	1	290	-	-	-
06O	Family planning commodities									
06P	Implanon	-	-	-	-	154	154	-	-	-
07	Number of workshops and/or forums on health supply chain conducted with Afya Uwazi input.	1	0	2	-	-	3	-	-	-
08	Instances of media reports & online mentions about the health supply chain flagged (to start with dashboard)	-	-	-	-	-	-	-	-	-
09	Number of pause-and-reflect sessions conducted	0	1	2	2	-	5	3	150%	20

Notes:

- Q1 refers to July-Sept 2021
- Q2 refers to Oct-Dec 2021
- Q3 refers to Jan-Mar 2022
- Q4 refers to Apr-June 2022
- Q5 refers to July-Sept 2022