Global Health
Supply Chain Summit

[ABSTRACT #50]
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VALUE CHAIN INNOVATIONS FOR UNIVERSAL HEALTH COVERAGE

Enhancing accountability for health commodities through third-party monitoring of the supply chain in Kenya

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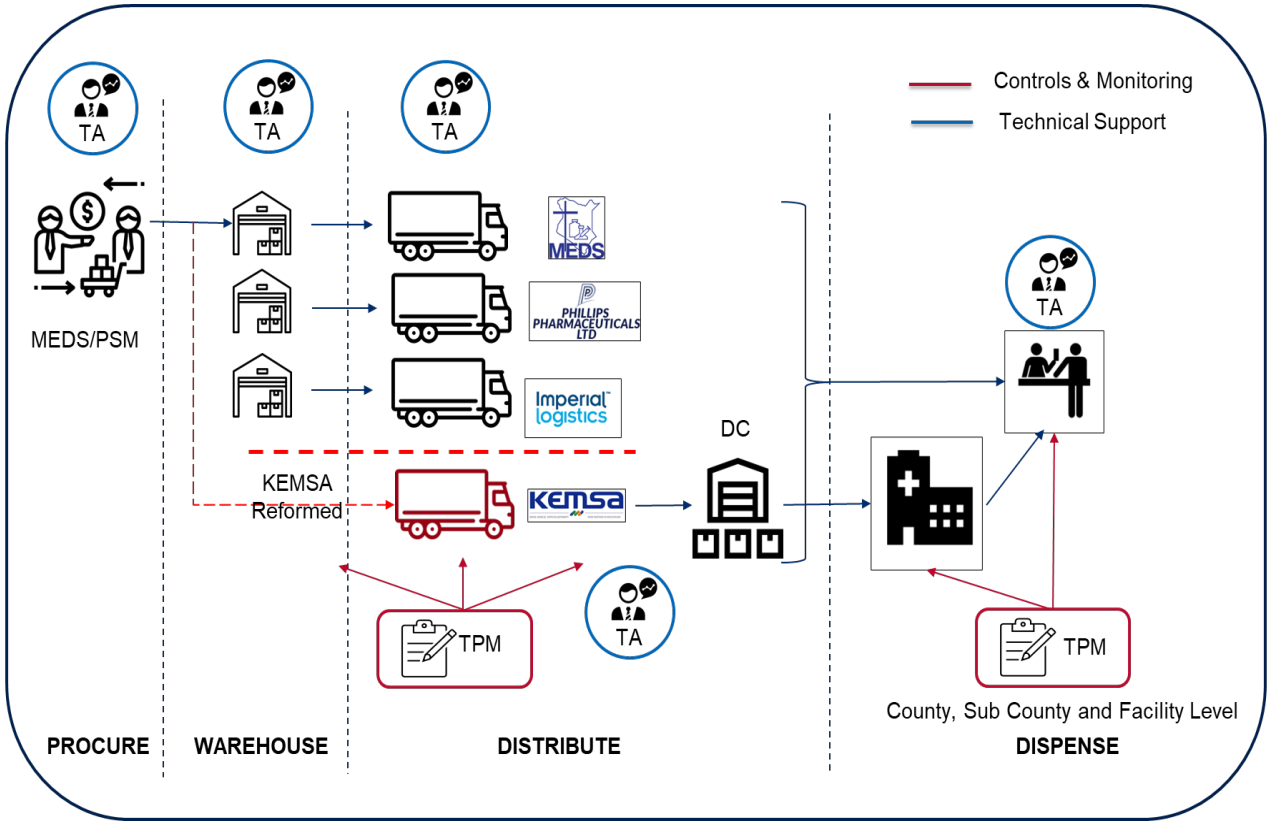
@ghcs_summit; #globalhealth; #globalhealthsupplychain; #GHSCS

Introduction

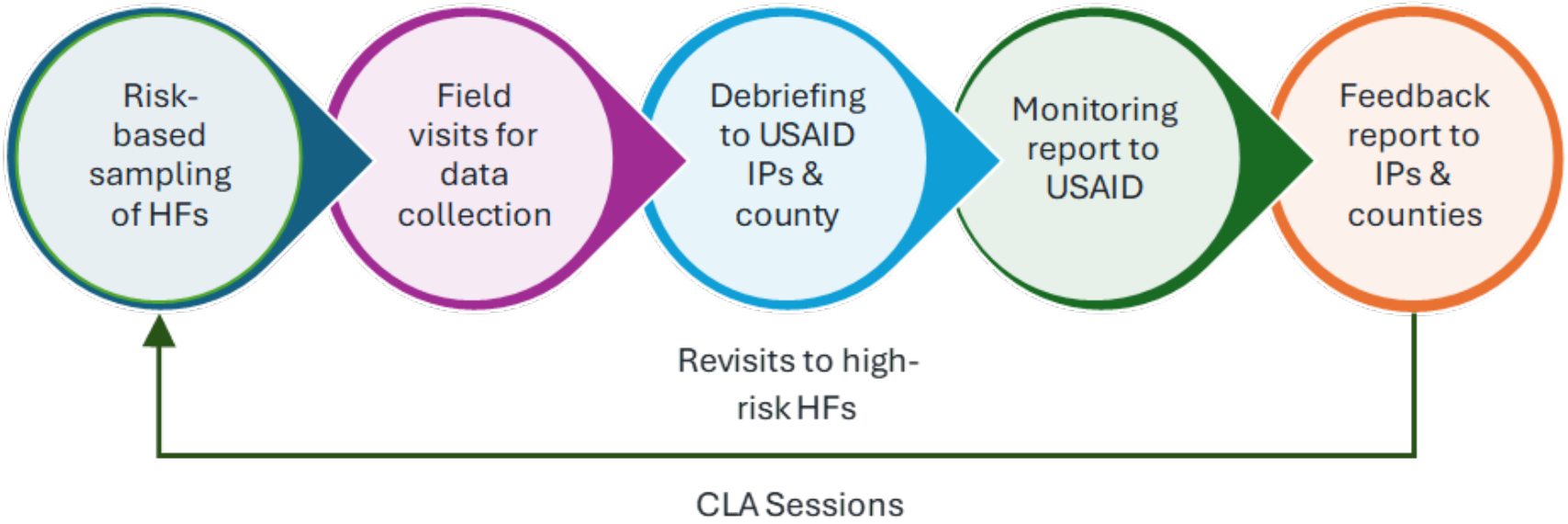
- The US Government **invests about $120 million** in Kenya to procure and distribute health commodities for priority public health programs annually.
- The investments carry **inherent risks** – corruption in procurement, commodity leakage, loss, pilferage, theft, diversion, expiration and other forms of wastage.
- USAID conceived *Afya Uwazi* - Swahili for 'transparency in health' to improve **accountability and mitigate risks**.
- Its a five-year supply chain **third-party monitoring** (TPM) activity (2021-2026) implemented by **AIR** in Kenya.
- Conducts **independent monitoring** of selected tracer health commodities, including **HIV/AIDS, TB, malaria** and **family planning** program commodities moving through the supply chain in Kenya, from **central warehouses** to the health facilities at the **last mile**.



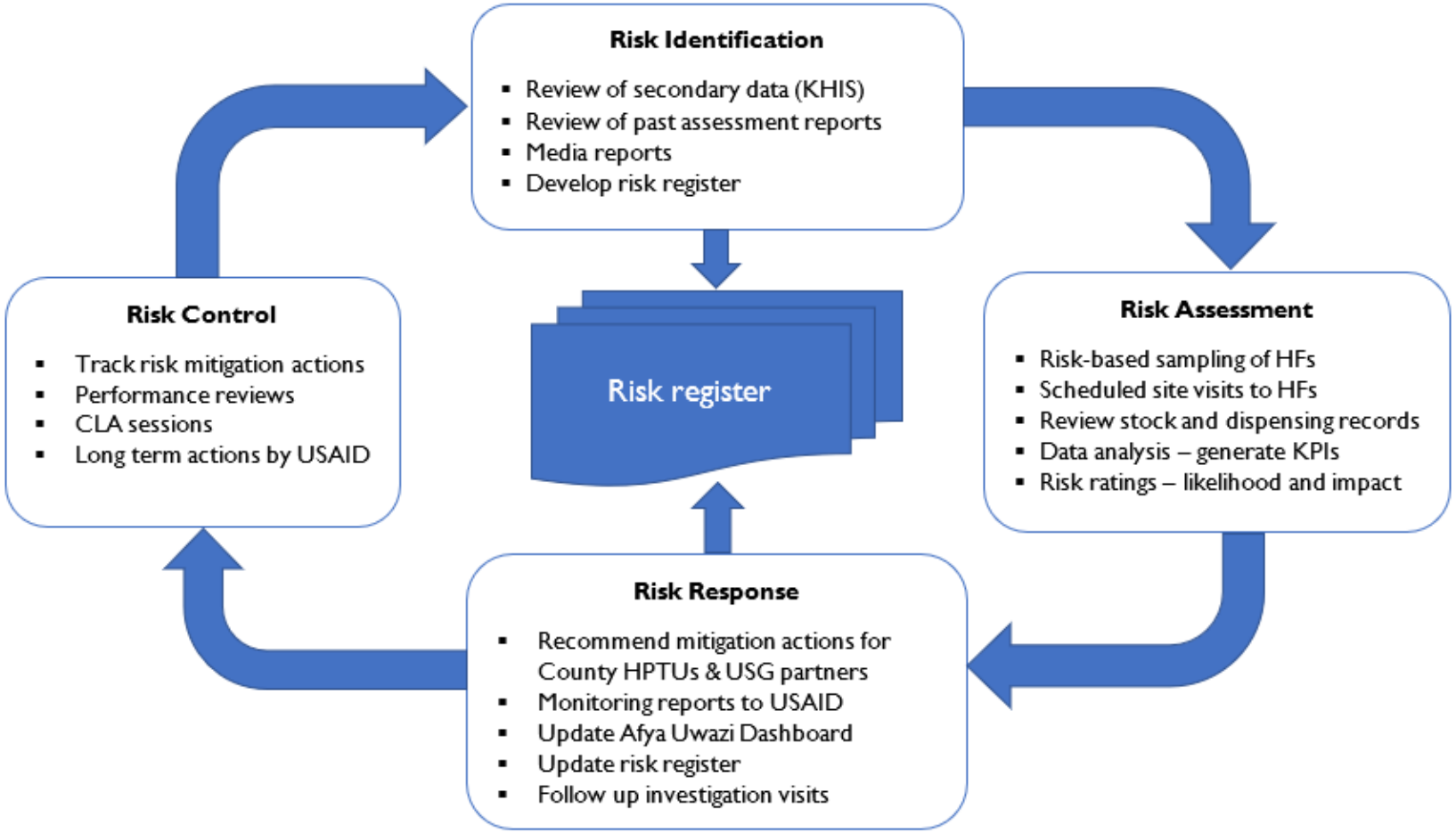
Adapted from USAID Kenya Schema of the Kenya Supply Chain Landscape (2021).

Methodology

- **Secondary data analysis and risk–based sampling of health facilities** – data extracted from Kenya Health Information System (KHIS).
- **Spot checks** in sampled facilities to assess actual **supply chain performance** and **estimate risks**.
- **Share findings and recommendations** with County Health Products and Technology Units (HPTUs) and USG implementing partners to undertake corrective and preventive actions.



TPM Risk Framework



The risk and control framework (RACF) guides TPM data collection, processing, and analysis.

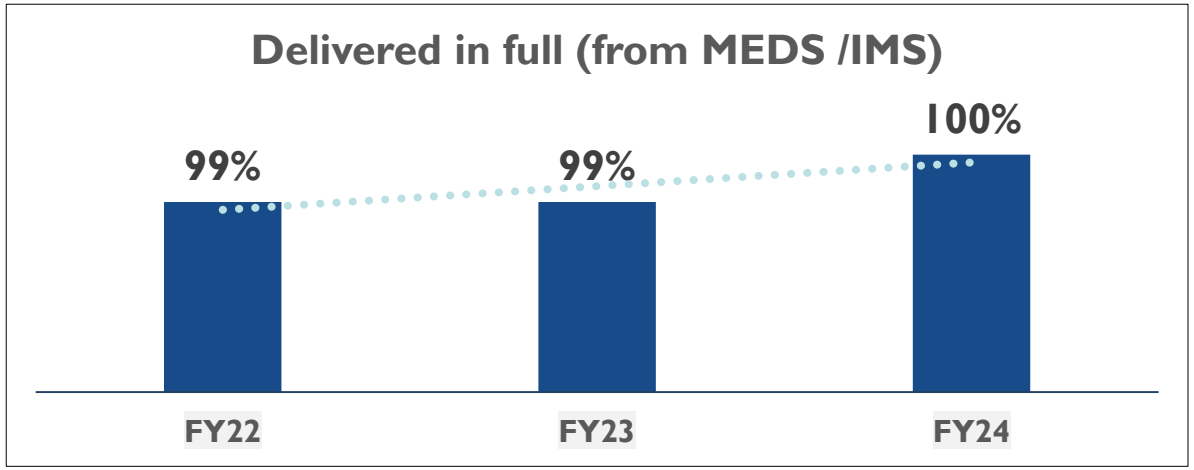
- Spot check data used to compute key performance indicators (KPIs)
- KPIs aggregated using an algorithm to model supply chain risks
- Risk ratings generated by health facility, county, and health program and one-pager scorecards.
- Risk types that have been defined: -
  - base risk,
  - transit loss risk,
  - product substitution risk,
  - storage loss risk,
  - wastage risk,
  - redistribution risk

TPM Coverage

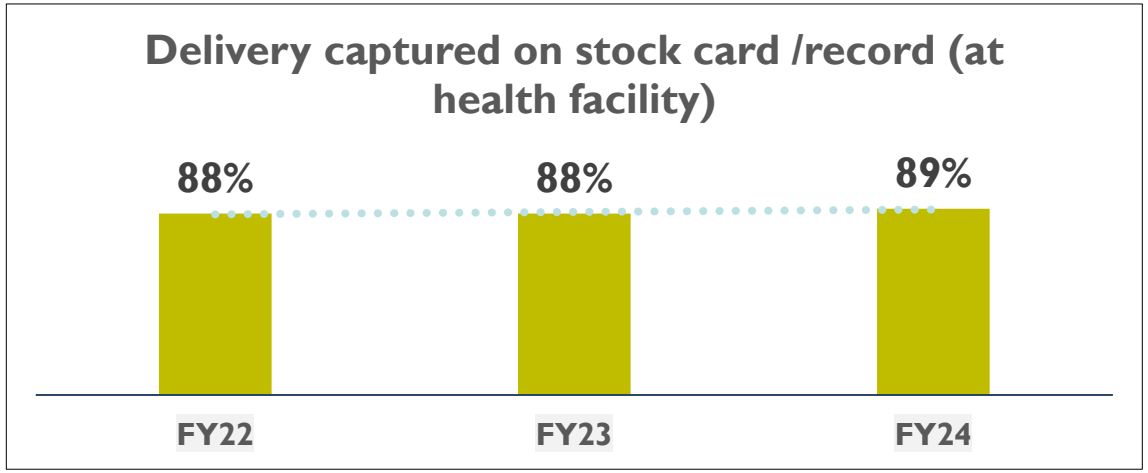
Since inception, Afya Uwazi has conducted supply chain spot checks in: -

- All 47 counties (incl. repeat visits to 26 counties in FY23 and 12 counties in FY24)
- Covered over **1,280 health facilities** across the country – equivalent to **19% of all facilities** that received USG-funded health commodities.
- Verified more than **5,600-line items** as follows: -
  - HIV/AIDS (46%) – ARVs and HIV rapid test kits
  - Malaria (35%) – anti-malarials (AL), diagnostic tests and nets (LLINs)
  - Family Planning (16%) – implants and injectable contraceptives
  - TB (3%) - TB patient packs and TB preventive treatments (3HP)

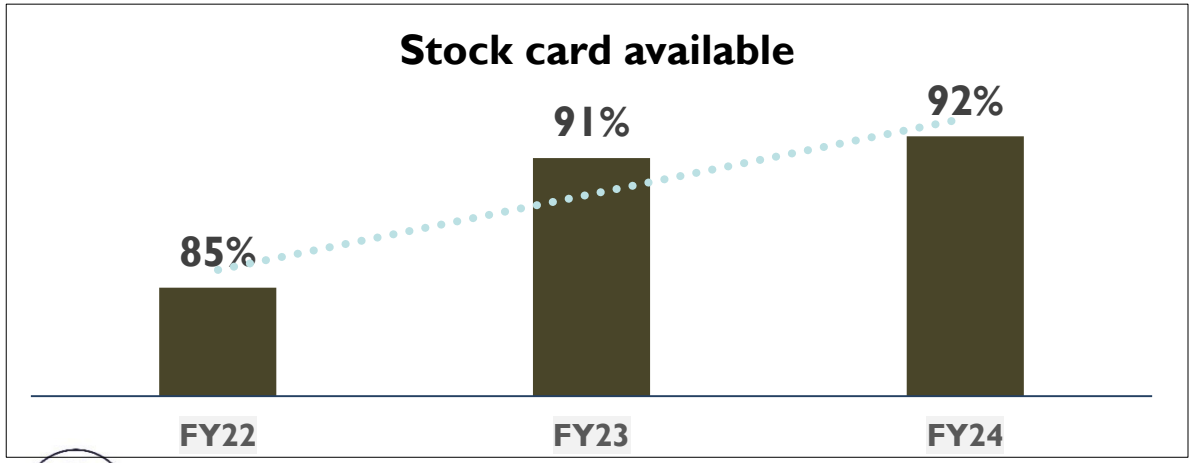
Results: Most key performance indicators have improved over the last three years



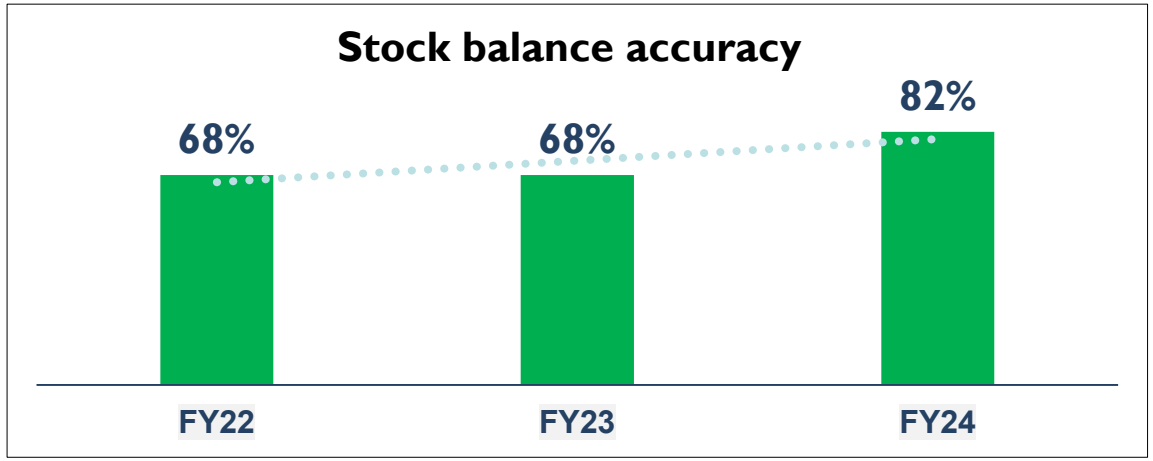
Supplies from the warehouses almost always reached the intended facilities



89% of receipts were captured (accounted for) in stock cards/records

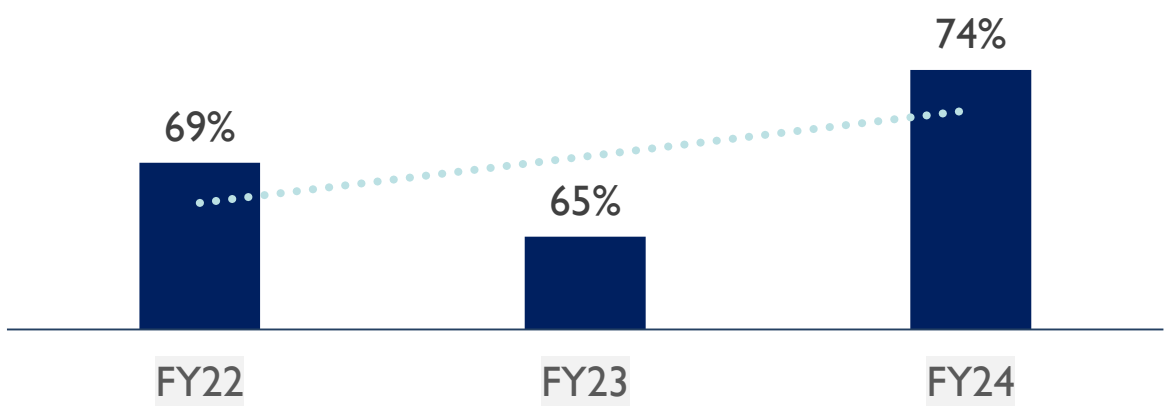


92% of tracer commodities had stock cards, up from 85% in 2022

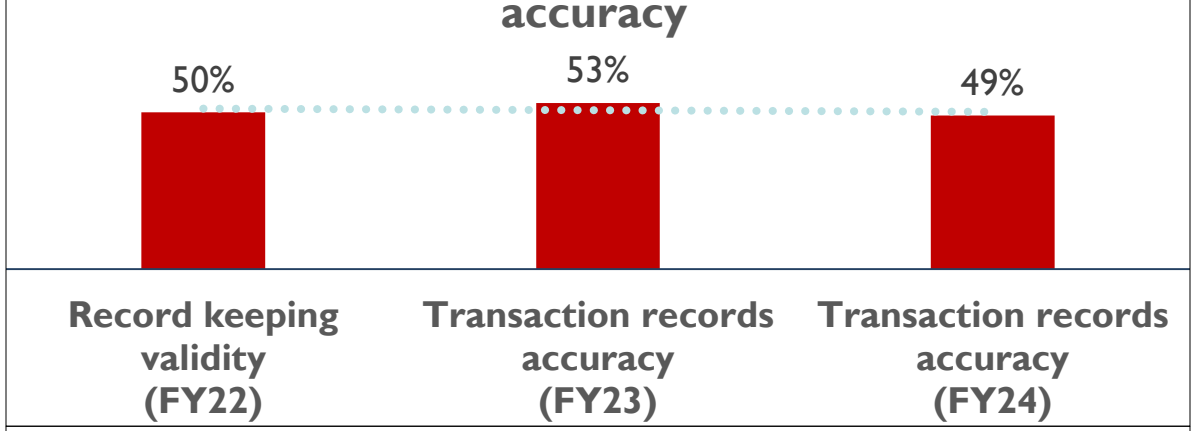


Stock balance accuracy improved from 68% in 2022 to 82% in 2024

Results: Key performance indicators where persistent challenges remain



Unsteady improvement in documentation of inter-facility transfers on stock cards and issue-and-requisition vouchers (s l l)

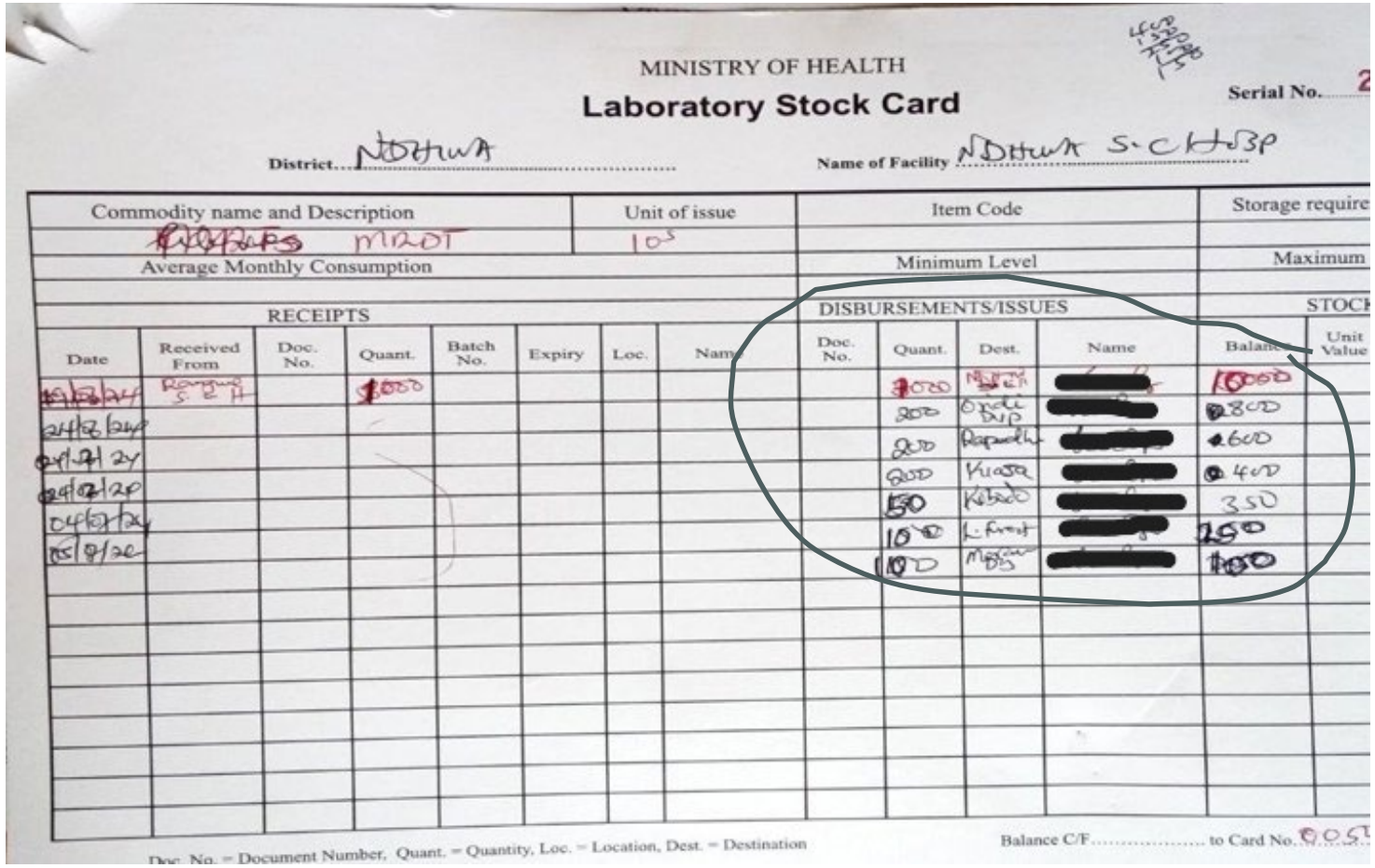


Inaccurate stock card record balances, usually "fixed" by replacing the with the month-end physical count.

- Most health facilities across all counties consistently performed poorly on daily record keeping accuracy.
- Stock record balances were often "fixed" without conducting a stock reconciliation exercise to account for variances therefore masking any losses.
- The use of the electronic dispensing tool (WebADT) for dispensing ARVs did not seem to result in more accurate daily transaction records due to inconsistent use.

Results: Pictorial highlights from TPM findings

Copies of completed monthly reports (F-CDRRs) kept in boxes / not filed in an orderly sequence.



MINISTRY OF HEALTH

Laboratory Stock Card

Serial No. 2

District: NDHWA

Name of Facility: NDHWA S.C.H.S.P

Commodity name and Description	Unit of issue	Item Code	Storage require
MRDT	10s		
Average Monthly Consumption		Minimum Level	Maximum

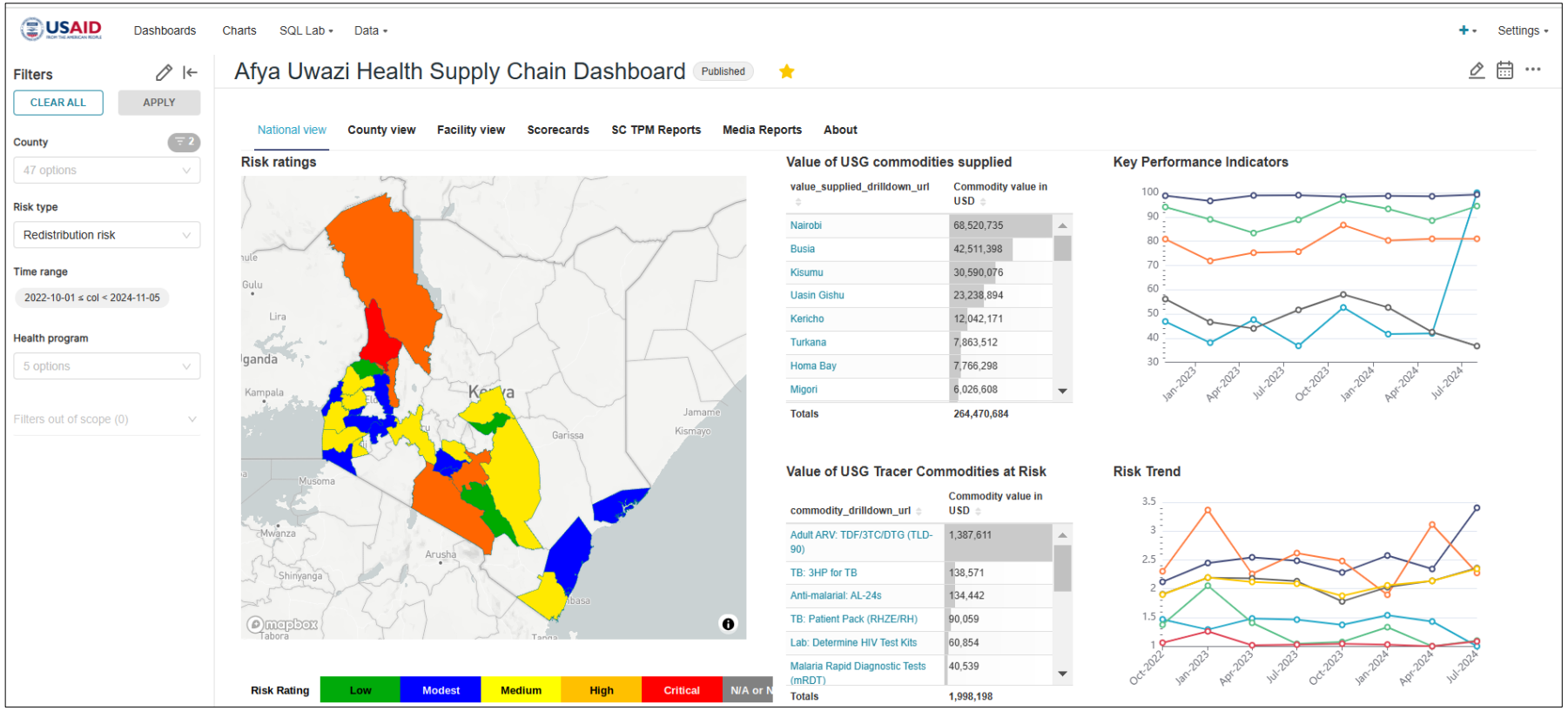
RECEIPTS								DISBURSEMENTS/ISSUES				STOCK	
Date	Received From	Doc. No.	Quant.	Batch No.	Expiry	Loc.	Name	Doc. No.	Quant.	Dest.	Name	Balance	Unit Value
[illegible]	Rongai S.C.H		1000						1000	[illegible]	[redacted]	10000	
[illegible]									200	Ondi DIP	[redacted]	8000	
[illegible]									200	Rapuchu	[redacted]	6000	
[illegible]									200	Kwaza	[redacted]	4000	
[illegible]									50	Kebedo	[redacted]	350	
[illegible]									100	L. Forest	[redacted]	250	
[illegible]									100	Mogwe MDS	[redacted]	150	

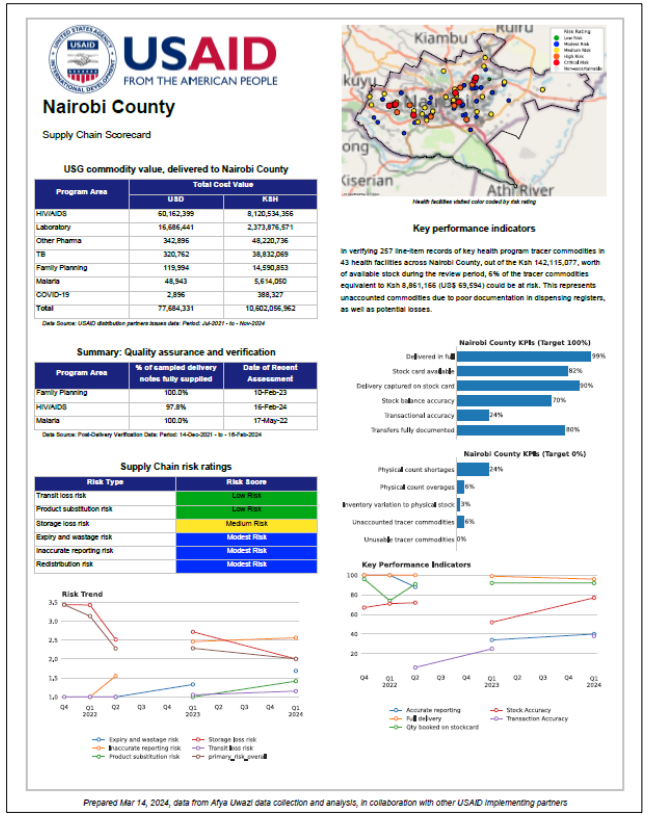
Doc. No. = Document Number, Quant. = Quantity, Loc. = Location, Dest. = Destination

Balance C/F ..... to Card No. 005

A stock card for 'malaria rapid diagnostic tests' showing cancellations/ alterations of both dates and quantities issued/ balances raising questions about the accuracy of the records.

Results: Afya Uwazi Health Supply Chain Dashboard





Afya Uwazi routinely updates and shares supply chain scorecards and feedback reports with recommendations for action by HPTUs, working in collaboration with USG implementing partners at county level.

Link to the Dashboard: https://afyauwazi.com/dashboard [Note: Login credentials required]

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Use of secondary data for TPM: A deep dive into KHIS Data

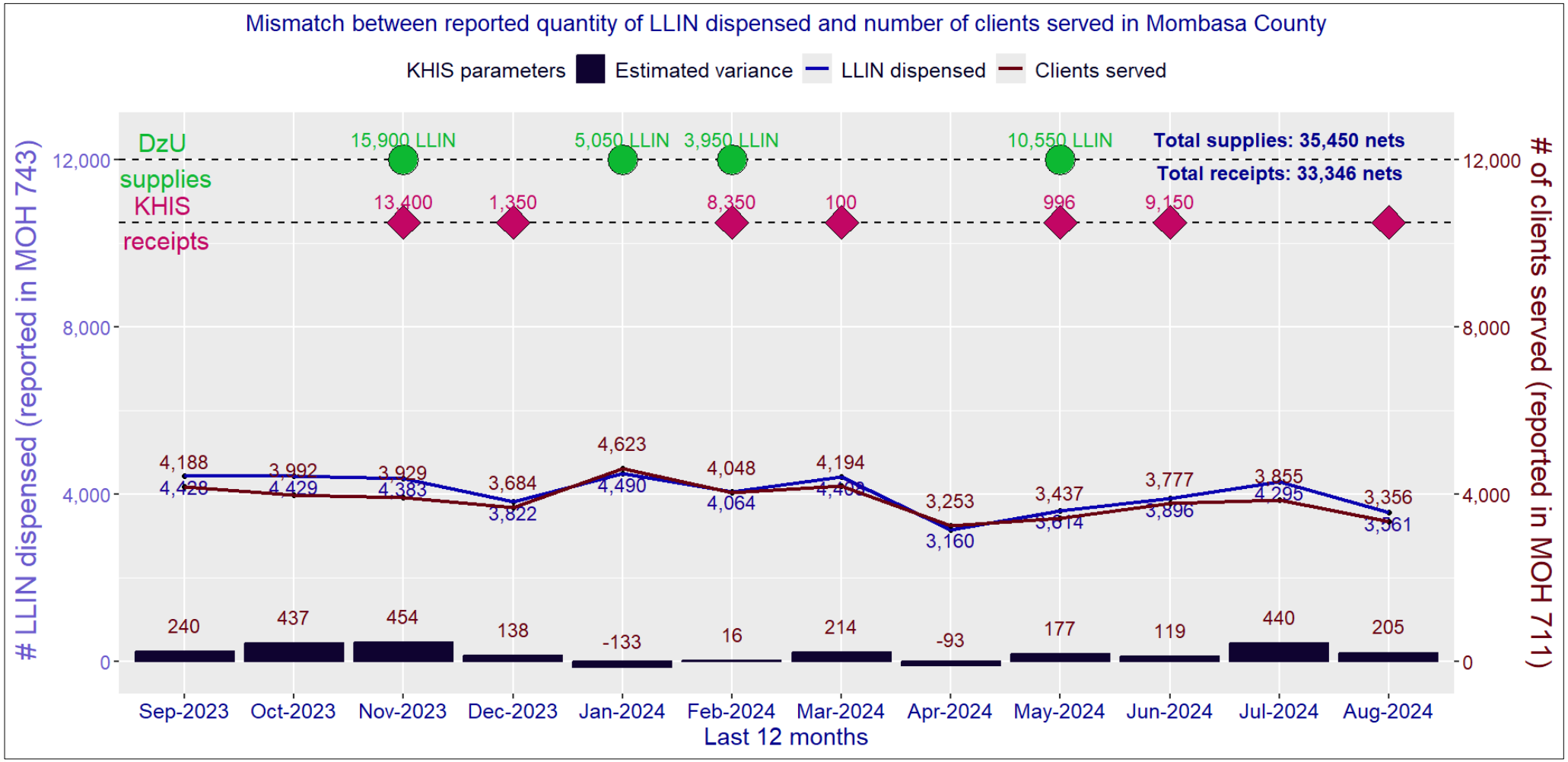
Stock status data, dispensing data and service statistics extracted from KHIS and distribution data obtained from MEDS and IMS for the preceding 12 months

Warehouse distribution data and routine facility reports analyzed to determine the level of variances between the quantities supplied vs receipts reported in KHIS

KHIS data further analyzed to determine the level of variances between reported quantities dispensed (consumption) vs the number of clients served (service statistics)

Data visualizations created to show variances at county level; health facilities contributing to the largest variances (most-at-risk) are flagged for follow-up action by IPs or TPM site visits

Analysis of routine data reported in KHIS to identify high-risk facilities: Qty of LLINs supplied vs qty received & qty dispensed vs clients served



About 6% of quantities supplied from the warehouse not reflected as receipts in monthly reports submitted by health facilities

Discussion (1)

- Low risk of in-transit loss - nearly all (>99%) commodities leaving the central warehouses reached the last mile health facilities intact.
- Risks were mainly identified at the health facility level; associated with poor documentation.
  - Observed persistent challenges of low accuracy in capturing day-to-day stock transactions (<50%); little attention given to reconciliation of stock variances
  - About 12% of stock not accounted for in source documents at the facility level
- Inter-facility transfers found to be particularly vulnerable
  - about 3.3% of 'transfers' could not be verified as received by the stated recipients and were likely losses to pilferage or theft.
  - non-compliance attributed to shortage of the requisition-and-issue vouchers (S11), heavy workload due to shortage of health workers, a perception by some respondents that this documentation was not necessary and seemingly no repercussions for non-compliance.

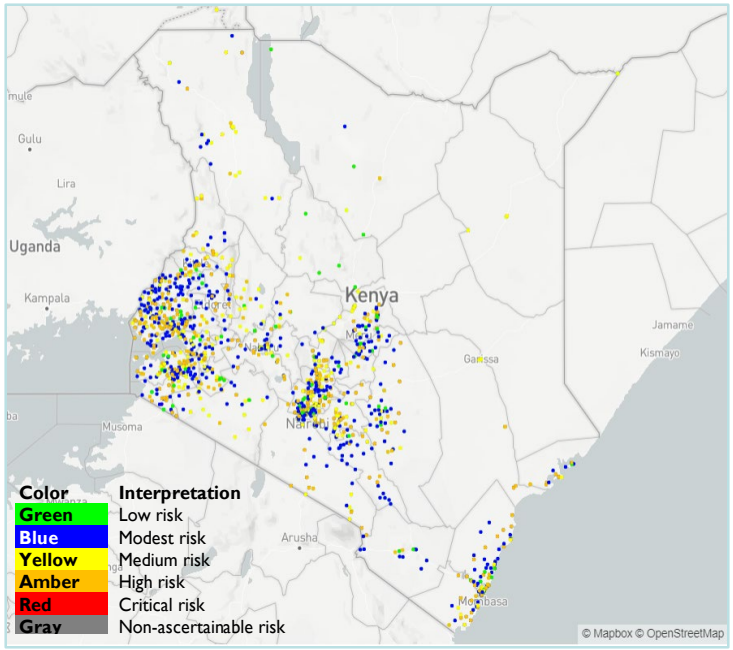
Discussion (2)

- Low wastage rates were observed – the overall wastage rate through expiry and/or damages was below 1%;
  - However, a few facilities recorded significant avoidable expiries such as for HIV rapid test kits, injectable contraceptive (DMPA-IM) and TB preventive treatments (3HP).
- Use of electronic inventory management and dispensing systems was hampered by: -
  - computer system breakdown leading to loss of data,
  - outdated software versions coupled with delayed help-desk support,
  - facility staff inexperience with extracting data from the electronic systems, and
  - the double burden of entering data into two systems that were not interconnected

- Analysis of KHIS data aggregated at county level showed that: -
  - Some health facilities did not capture all receipts from the warehouse in monthly stock status (F-CDRR) reports.
  - Facility consumption data (in F-CDRRs) did not often correspond with the number of clients served.
  - this distorted the calculation of resupply quantities and impacted order allocation

Conclusion and Lessons

- Afya Uwazi TPM activity has conclusively demonstrated the effectiveness of the distribution leg from the warehouse to last mile health facilities.
- Evidence generated shows that most risks for loss of heath commodities were at the health facility level and were mainly associated with poor documentation.
- Transfer of health commodities between health facilities and "fixing" of stock balances with physical counts without reconciliation of variances, posed the highest risk by creating open channels for diversion of commodities.
- Afya Uwazi's monitoring visits and findings have been acknowledged as an "eye-opener" by county management staff and triggered remedial actions.
- The presence of county and service delivery implementing partner staff during some of the Afya Uwazi field visits fostered acceptance of the findings and provided an opportunity for on-the-spot interventions.
- Ongoing efforts to fully digitalize health information systems in Kenya as part of the rollout of universal health coverage (UHC) must address challenges currently hindering optimal usage to ensure successful implementation and data quality.



Acknowledgements

- USAID Kenya /East Africa
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  - Mission for Essential Drugs and Supplies (MEDS),
  - Imperial Managed Solutions (IMS) /DP World
- USG-funded service delivery implementing partners

Thank you

Any Questions

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