

The Impact of Tanzania's Supply Chain Management Upgrades



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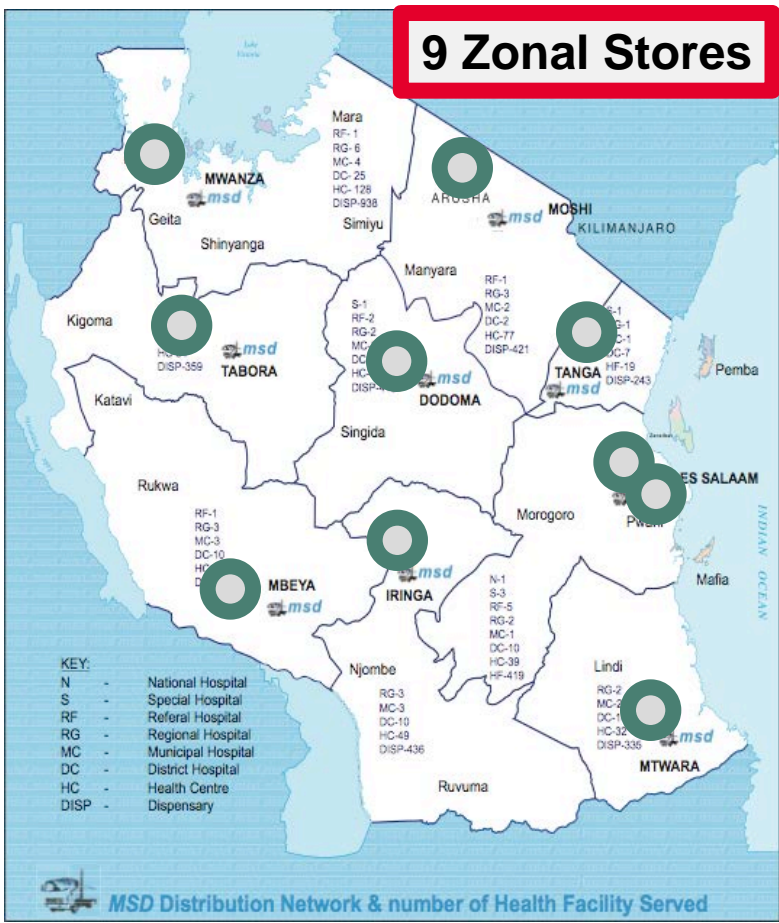
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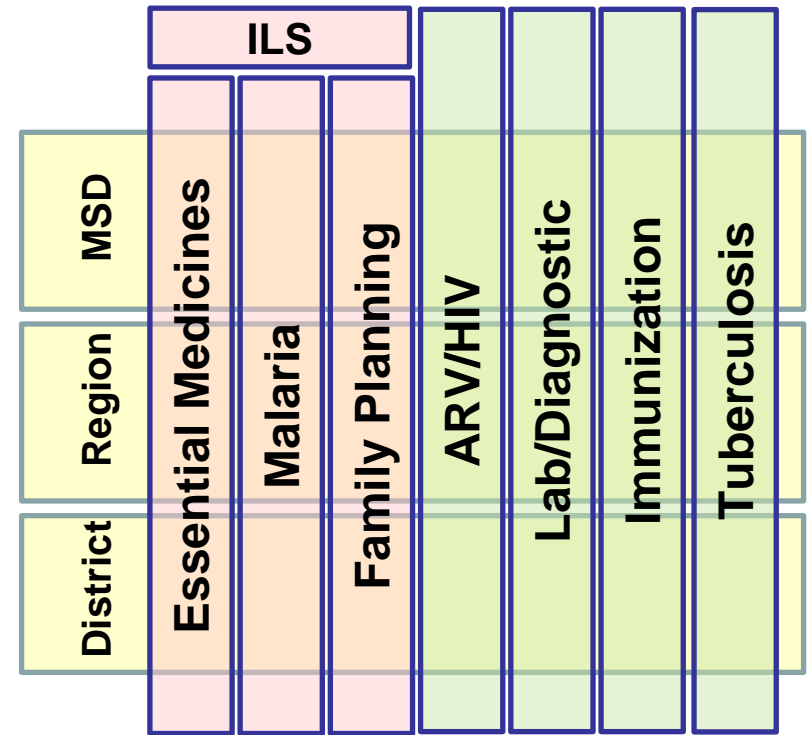
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Introduction – Supply Chain Overview

Tanzania's public health supply chain delivers **over 800** of products to **over 5700** health facilities



Combined Total of appx. 800 Products



5700+ Health Centers & Dispensaries

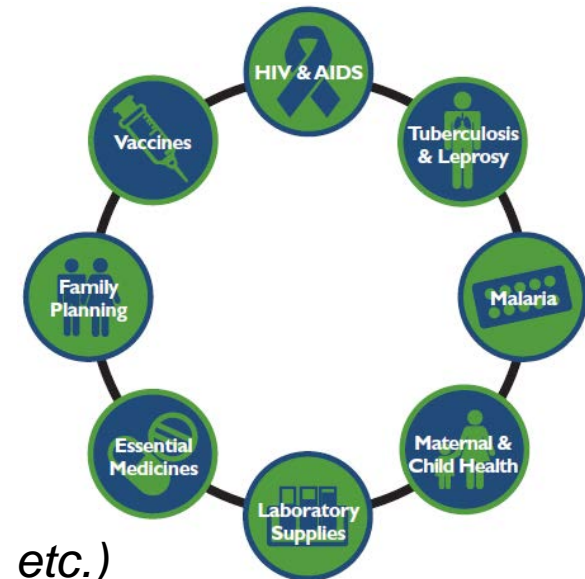


eLMIS

An effective and sustainable electronic logistics management information system (eLMIS) should be user friendly and facilitate that adequate quality and quantities of health commodities are always available at the point of service to meet patient demand. The eLMIS must provide integrated access to:*

- Accurate, timely and routine consumption data*
- Real-time logistics management capabilities covering point of origin to point of consumption*
- Demand forecasting, capacity planning & modeling based on consumption*

(vaccines, medicines, medical & diagnostic supplies, etc.)*

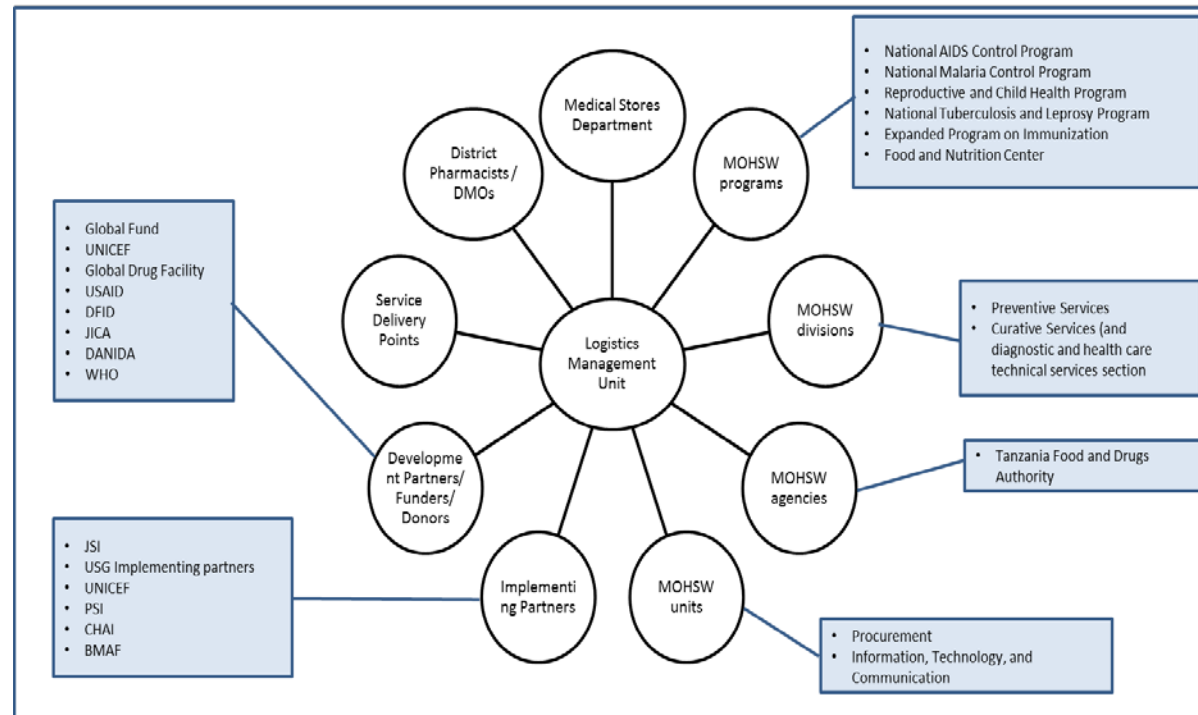




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Logistics Management Unit

The LMU is a national entity within the Ministry of Health that identifies, prioritizes and coordinates supply chain interventions among various stakeholders partners



- Logistics Data Management
- Monitoring & Evaluation
- Supply Chain Intervention Planning

- Quantification
- Coordination & Collaboration
- Supervision & Capacity Building



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The eLMIS and LMU were designed and implemented to solve various supply chain challenges



1

Improve quality of various upstream supply chain practices

2

Reduce the levels of expires and wastage

3

Enhance data visibility, analysis and use at all levels of the supply chain

4

Strengthen reporting rates, timeliness, data quality & ordering of commodities

5

Improve commodity availability and management at health facilities



A corresponding evaluation was conducted to examine impact of investment on performance and cost of the supply chain

What do they cost?



Are they more effective?



Are they more efficient?



Are they saving money?





Methodology: A non-experimental pre and post design study with two rounds of data collection was conducted

Type of observation	Baseline	Upgrades begin	Round 1	Round 2*
Performance data	O ₁	X	O ₂	O ₃
Cost data	O ₄	X	O ₅	O ₆
Timing of data collection	Aug-Nov 2013	Jan-April 2014	April-May 2015	May 2016

O = Observation (data collection); X = Intervention

* Round 2 data collection depends on availability of funding under the GHSC project.



Methodology: Data was drawn from a nationally representative sample of facilities and districts including Central Medical Stores

Tool	Data Source	Program Focus	Measurement Focus	Data Collection Timing
EUV Survey-Modified	~220 health facilities (hospitals, health centers and dispensaries)	ARV, ILS, OI, TB, EPI	Cost and performance at facility level	Aug 2013, April 2015
Upstream SC Survey	17 districts, 9 MSD zonal stores, 10 regional vaccine stores, MSD HQ	ARV, ILS, OI, TB, EPI	Cost and performance at higher tiers of the SC	Oct 2013, May 2015
Stakeholder Surveys, Interviews, Document Review	MOH, Donors, Implementing Partners	ARV, ILS, OI, TB, EPI	Cost and performance at central management level	Nov 2013, May 2015



Methodology: A comprehensive set of performance indicators were chosen to examine impact



Data use

- Accessibility of data
- Visibility of data
- Timeliness of data
- Transparency of data



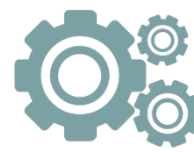
Reporting

- Frequency of reporting
- Timeliness of reporting
- Quality of reporting
- Reporting rates



Supply chain outcomes

- Product availability
- Inventory management
- Reduced expiries
- Forecast accuracy

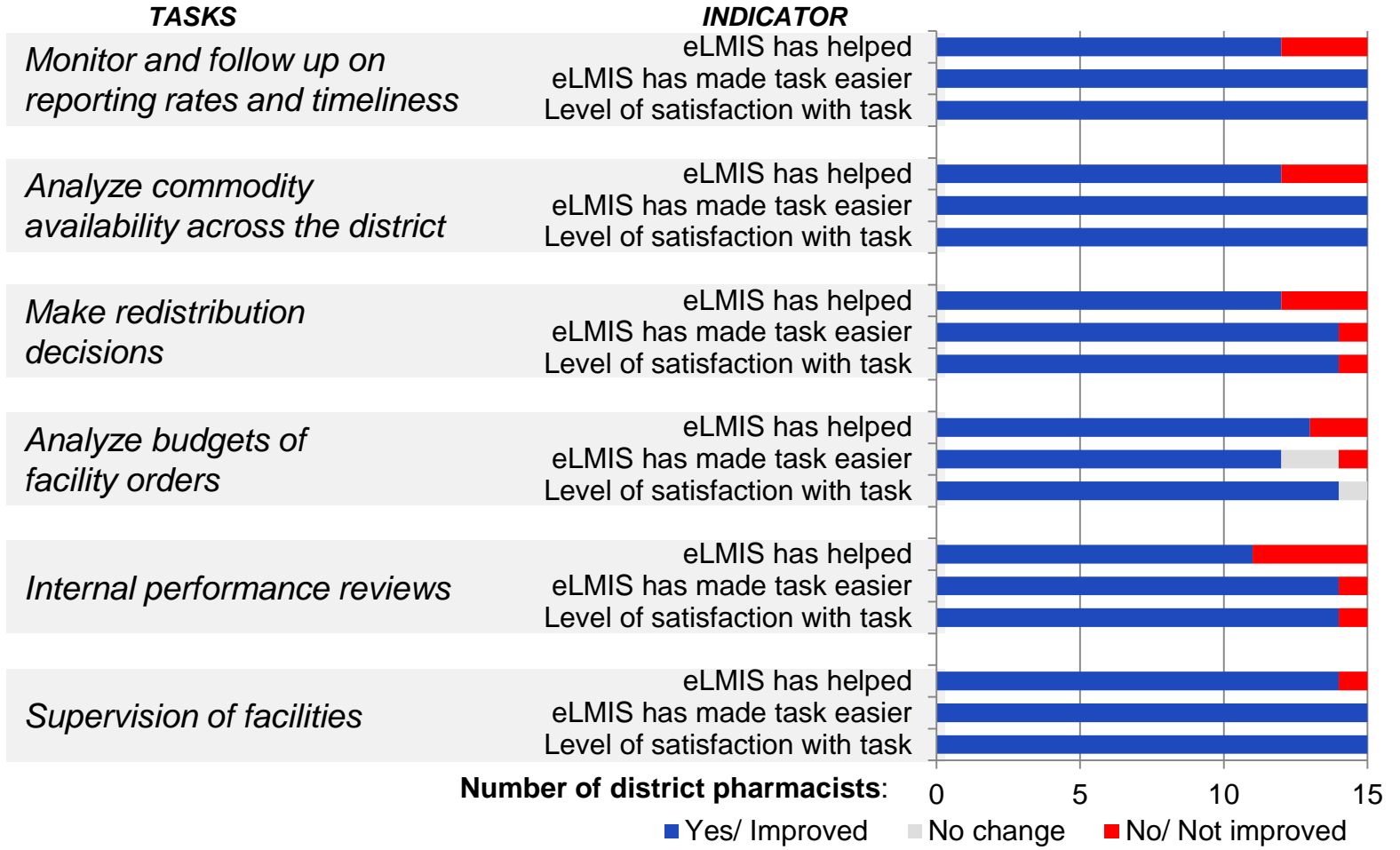


Management practices

- | | |
|---------------------------|---------------------|
| Storage | General management |
| Inventory management | Quantification |
| Transport | Control and monitor |
| Logistics data management | Design and plan |

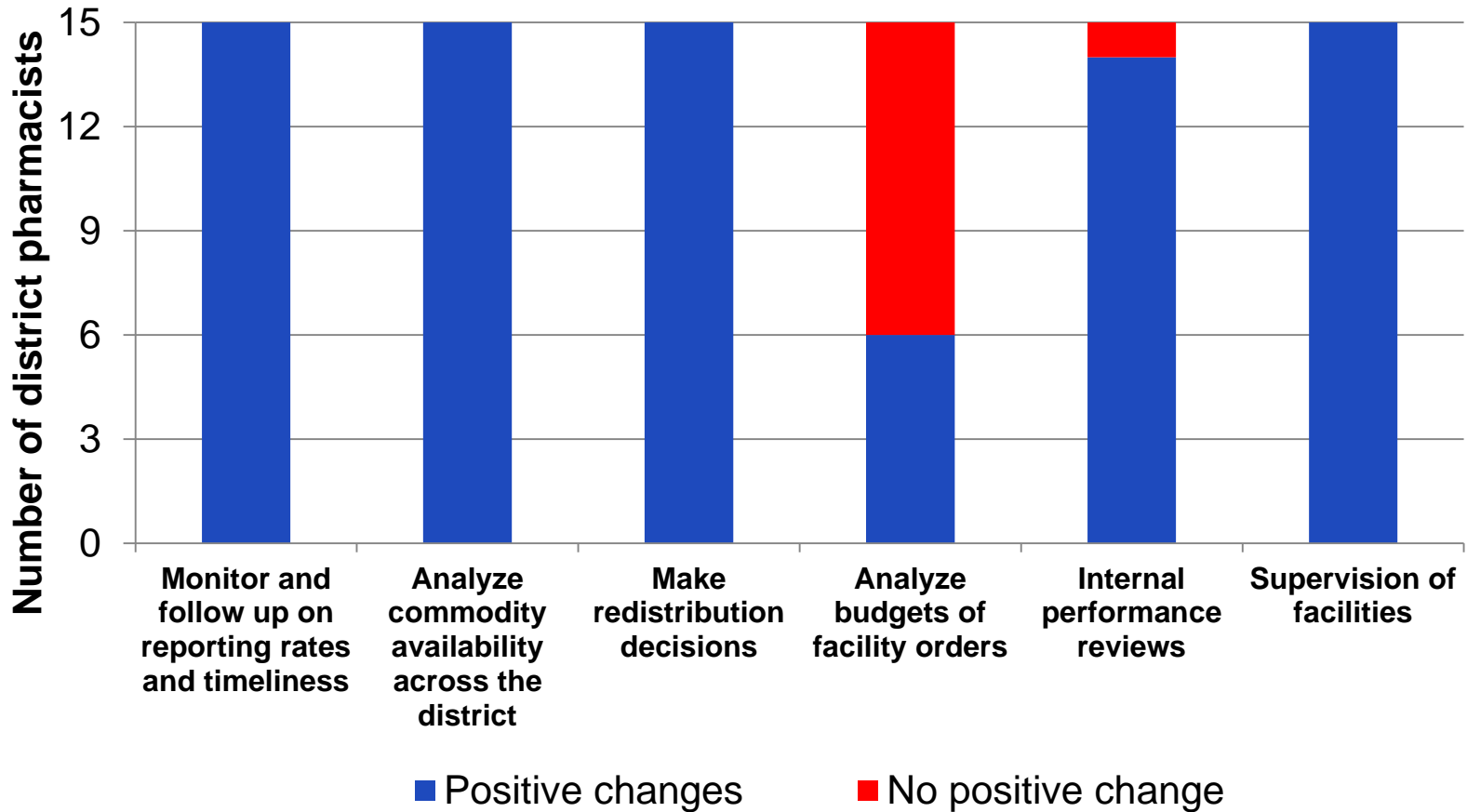


District Pharmacists reported reduced management complexities and high levels of satisfaction with the eLMIS





The same group reported that the LMU has helped make positive changes





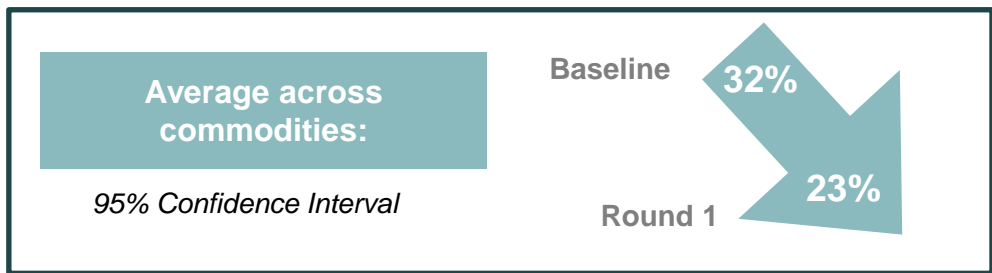
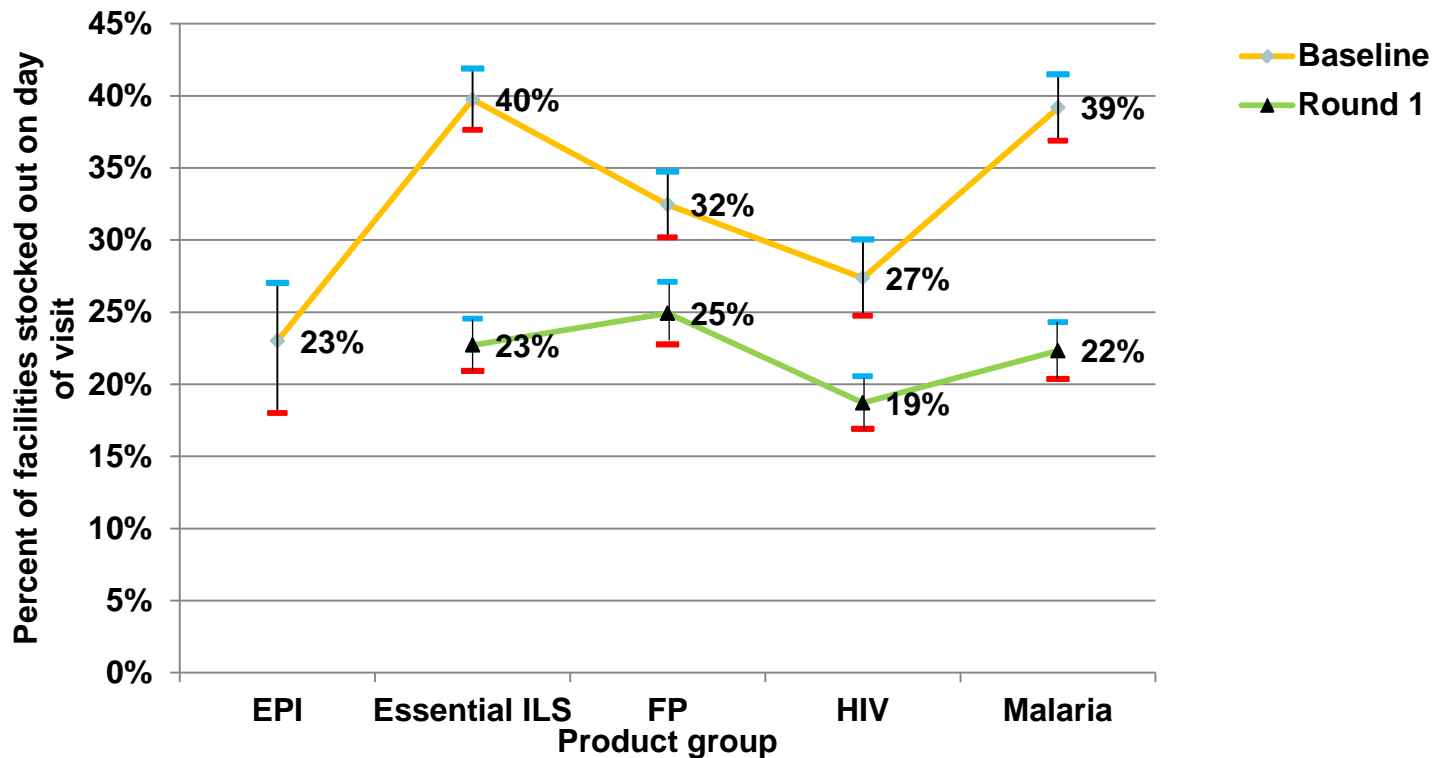
Anecdotal evidence points to generally positive changes

Supply Chain Performance	Reduction in stock outs; fewer reports (“complaints”) of stock outs to MSD
Management Practice	Data facilitating redistribution within and among districts; MSD reports fewer “push” orders
Reporting	Frequent reports of better and more timely reporting and ordering; more accountability at lower levels
Data Use	Orders more likely to be based on consumption or issues; ability to validate order quantities and inventory levels; ability to inform program commodity decisions
Other Mgmt Practices	More follow up with facilities that don’t order; ability to prioritize supervision needs



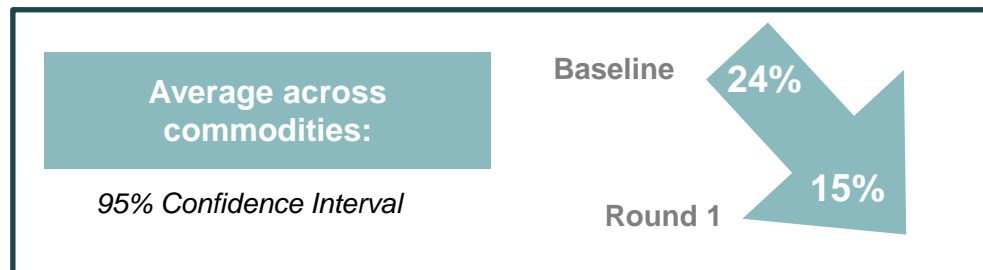
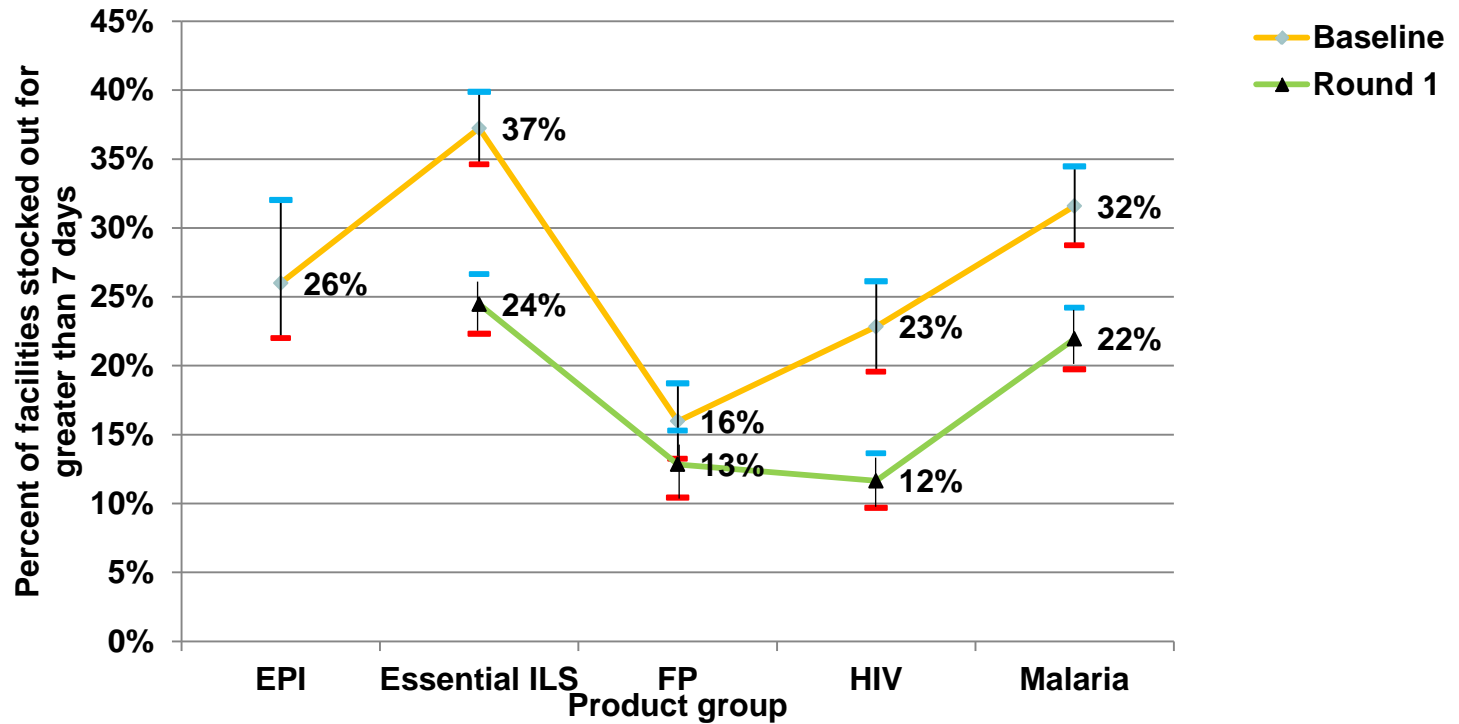
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Results: Stock out rates fell for all product groups





Results: Stock out durations also fell during the same period





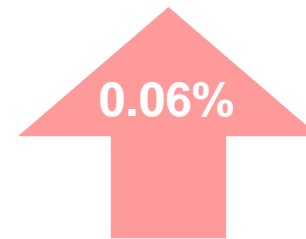
Expiry rates fell at SDPs, rose slightly for central and zonal

Change in expiry rate, baseline versus round 1

SDPs



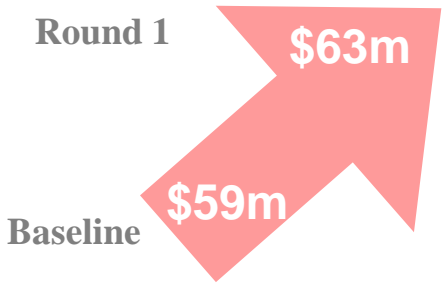
Central and zonal



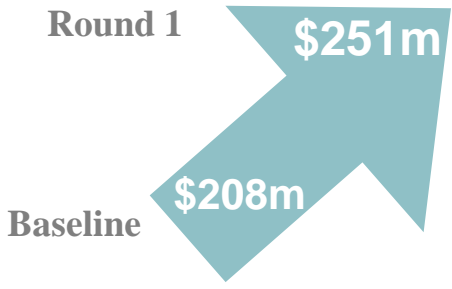


The management upgrades were more costly, but also made the national supply chain more effective and more efficient

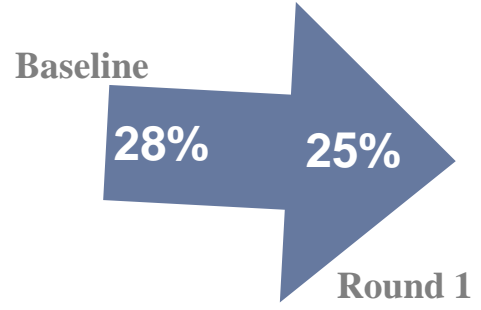
Total Annual Cost



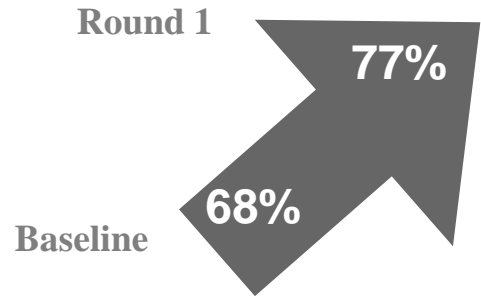
Value of Handled Commodities



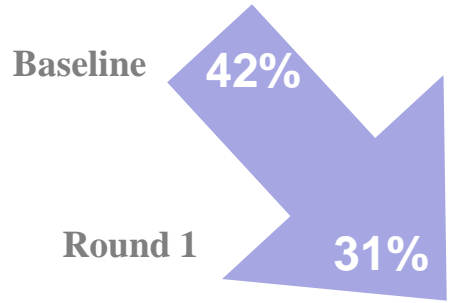
Cost per value of commodities



Supply Chain Performance



Cost per value of commodities, adjusted for performance





Cost savings due to improved system efficiencies were realized in year 1 and are projected to grow over time





Key takeaway: eLMIS & LMU have enhanced supply chain performance while making the system mo

- The management upgrades have had a positive impact on key supply outcomes, especially stockout rates with stockout duration also falling.
- Moreover, the upgrades also reduced overall expiry rates.
- The upgraded system costs more but also is more efficient.
- Time series analysis also support these findings.



Key Takeaway: Cost effectiveness of the supply chain as well as performance all improved

- The upgrades had a positive impact on key supply outcomes especially stockout rates, stock out duration and expires. A corresponding time series analysis supports these findings.
- Key stakeholders including District Pharmacists, Central MoHSW staff were all very positive with these interventions while others demanded further improvement.
- The upgrades also appear to have generated significant savings to the government.
- The upgraded system costs more but also is more efficient.

