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Ethiopia LLIN Supply Chain: Campaign Tracking Pilot

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Presentation Outline

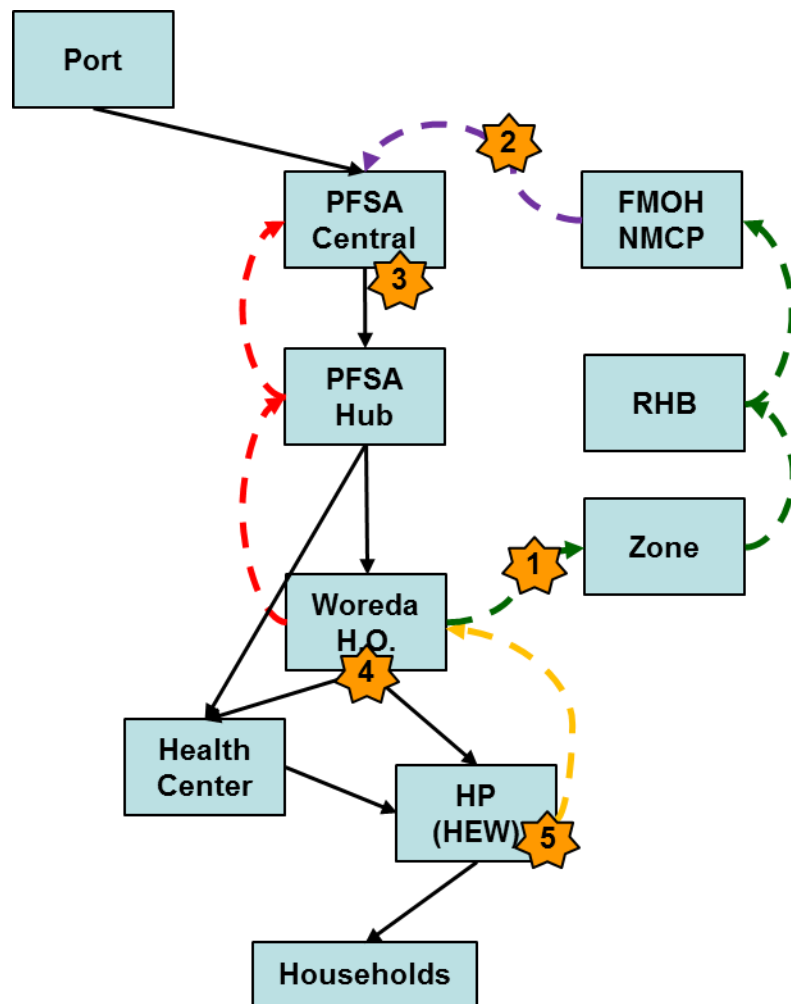
- Ethiopia LLIN Context
- Overview of Piloted Visibility Technology
- Overview of Pilot Approach
- Pilot Findings
 - Question 1: Can we achieve “in-campaign” end-to-end visibility?
 - Question 2: Is reported data of sufficient quality?
 - Question 3: Is the tested solution scalable and sustainable?
- Conclusions
- Recommendations



Ethiopia LLIN Context

- The **central and hub (regional) levels** of the in-country supply chain for LLINs are visible through the existing **Vitas (PFSA MIS)**
- But no visibility into LLIN transactions and balances at the woreda (district) and health post levels
- At the woreda level, an existing mobile inventory management application—**mBrana**—was adapted for LLIN distribution

Ethiopia LLIN Context: Current Campaign System





Pilot Approach

- To establish **end-to-end visibility into LLIN campaign progress**, AIDSFree, in support of Federal FMOH and USAID and in partnership with GHSC-PSM, developed a tool for data collection at the **health post**.
- Goal: to evaluate Mbrana and IVR technology and process for data collection prior to potential wider deployment.
- The approach included **a pre-test and a pilot phase**
- The pilot sought to answer three main research questions?
 1. Can we achieve 'in-campaign' end-to-end visibility?
 2. Are data of sufficient quality?
 3. Is the tested solution scalable and sustainable?



Overview of Piloted Visibility Technology

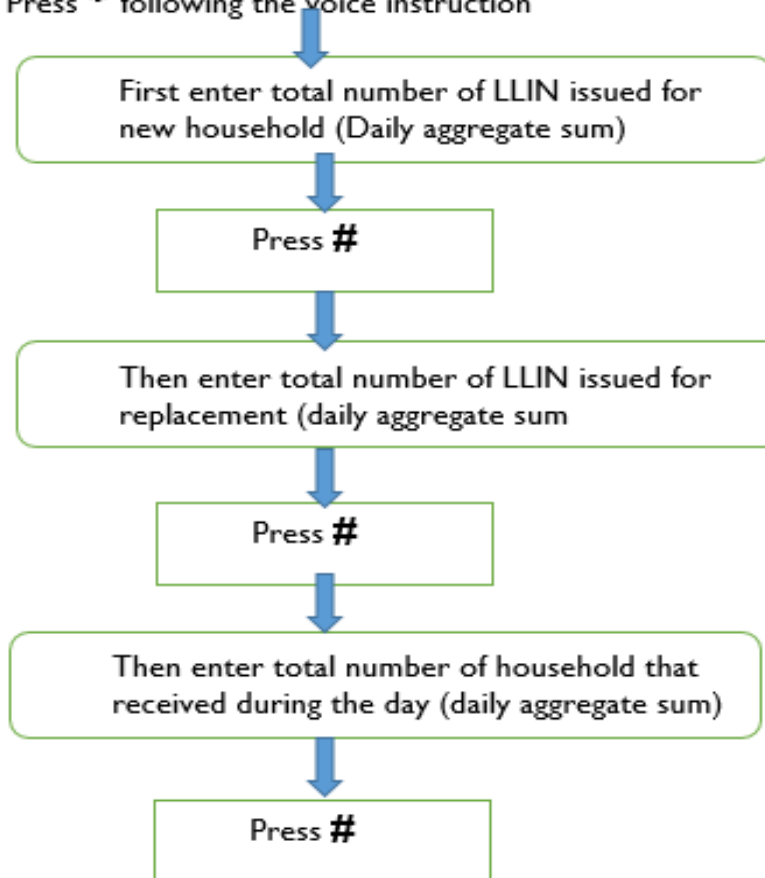
- **Mbrana:** Inventory management software managing daily transactions for vaccines and long-lasting insecticide nets (LLINs)
- Woreda staff use a provided smartphone to enter receipt and issue transactions into mBrana
- At health posts (HPs), a new technology was adapted—**Interactive Voice Recording (IVR)**—for use by Health Extension Workers (HEWs) to track LLIN campaign distribution



IVR Process at Health Posts

Call: 8945

Press * following the voice instruction



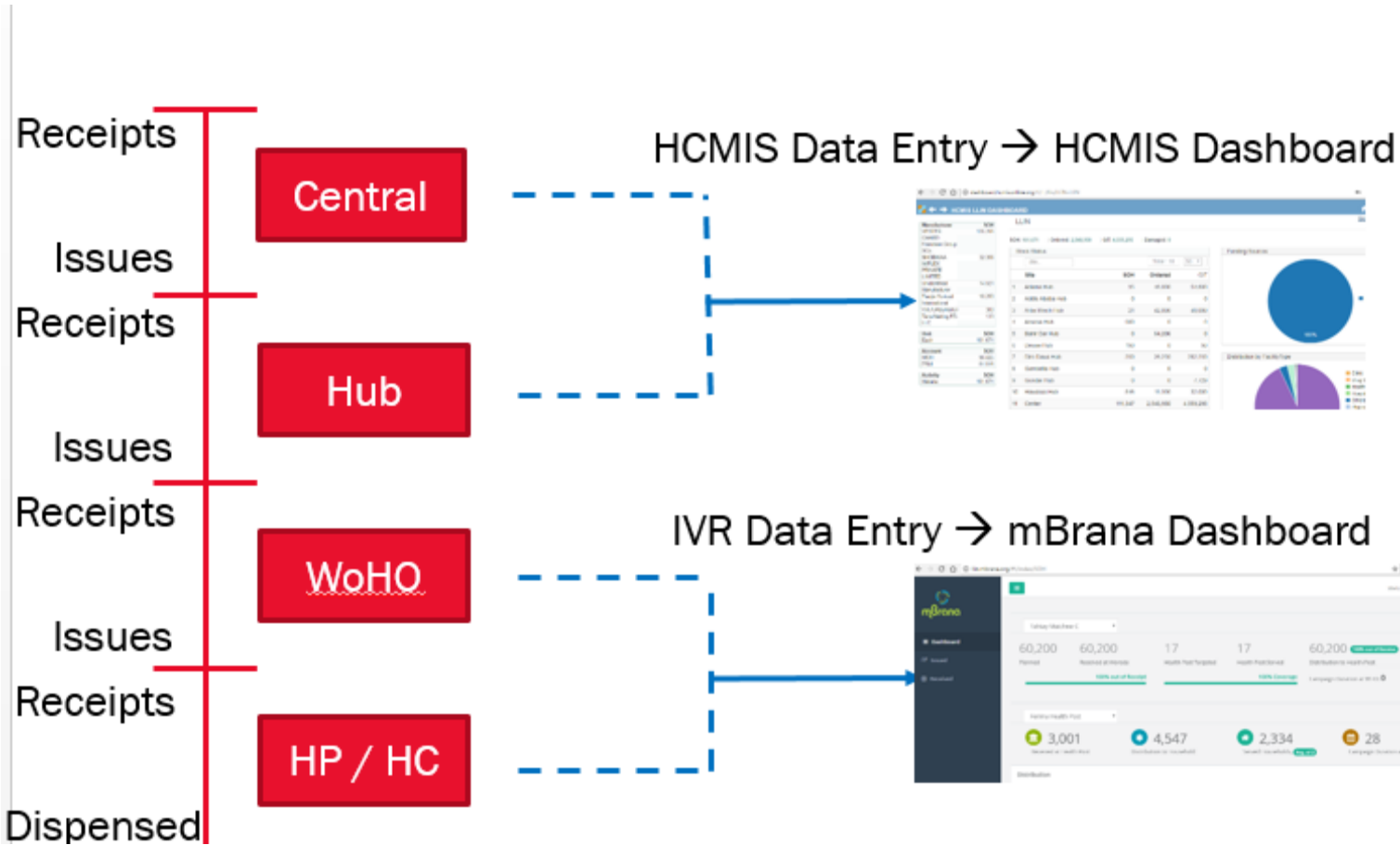


Pilot Evaluation Findings

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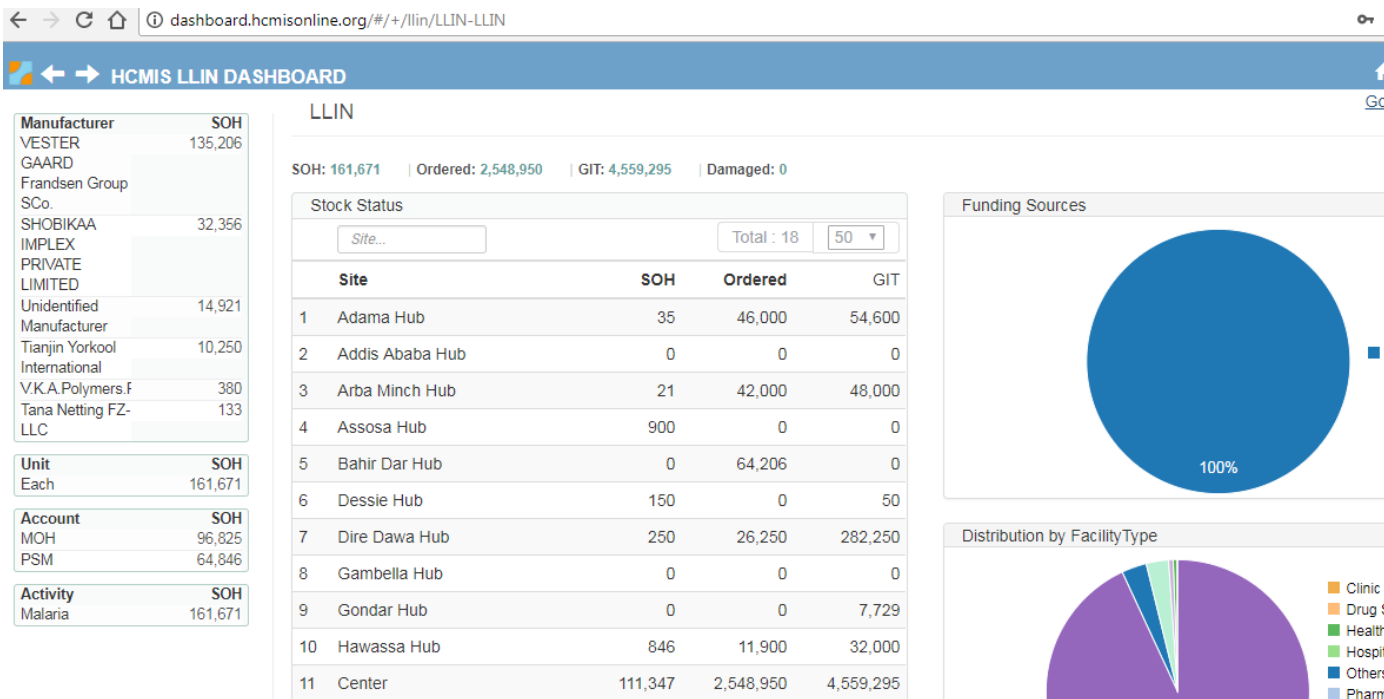


Degree of In-Campaign Visibility Provided





Question 1: Can we achieve “in-campaign” end-to-end visibility?

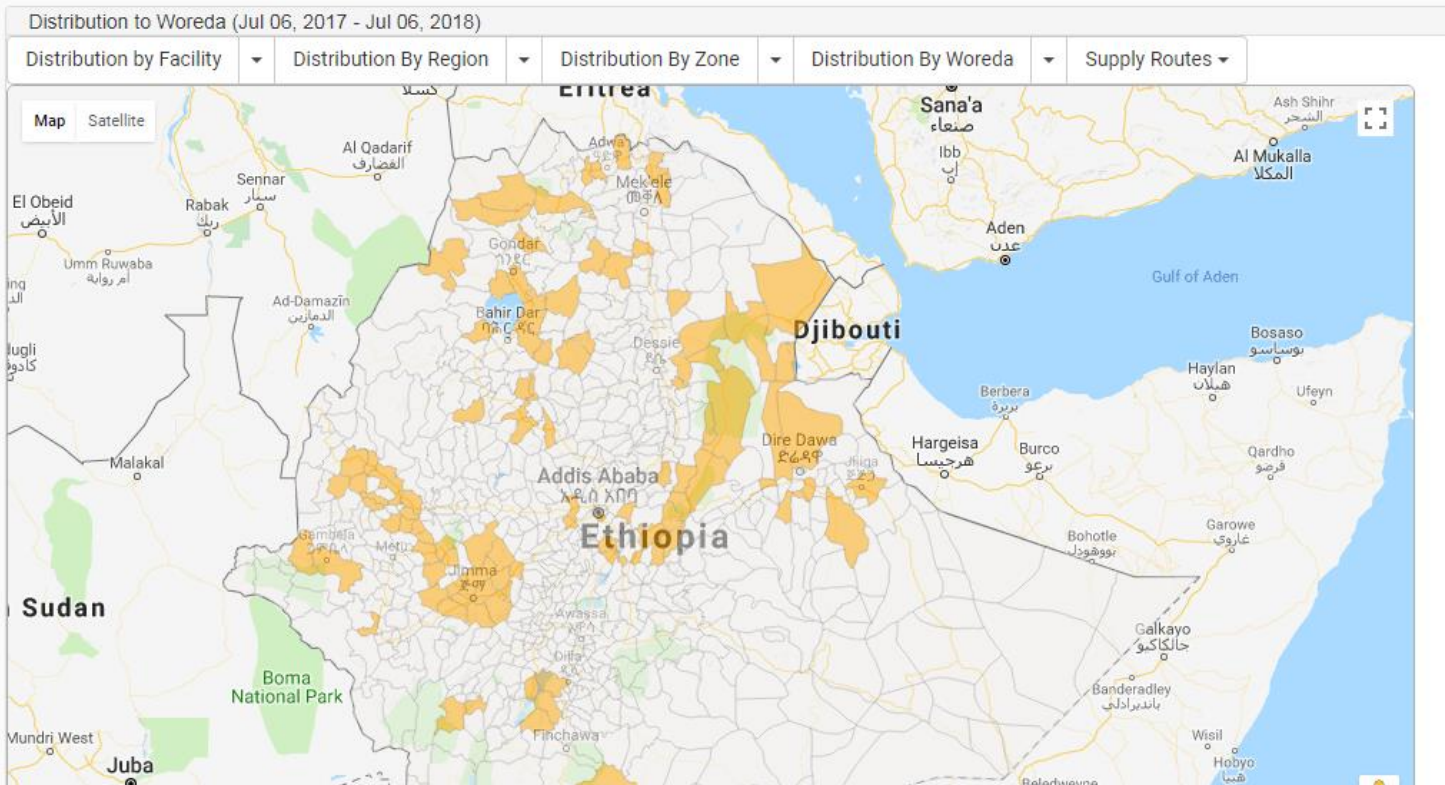


HCMIS dashboard includes stocks and transaction quantities from Central inbound (procurement) through Central storage to Hub receipts, SOH, and issued quantity.



Question 1: Can we achieve “in-campaign” end-to-end visibility?

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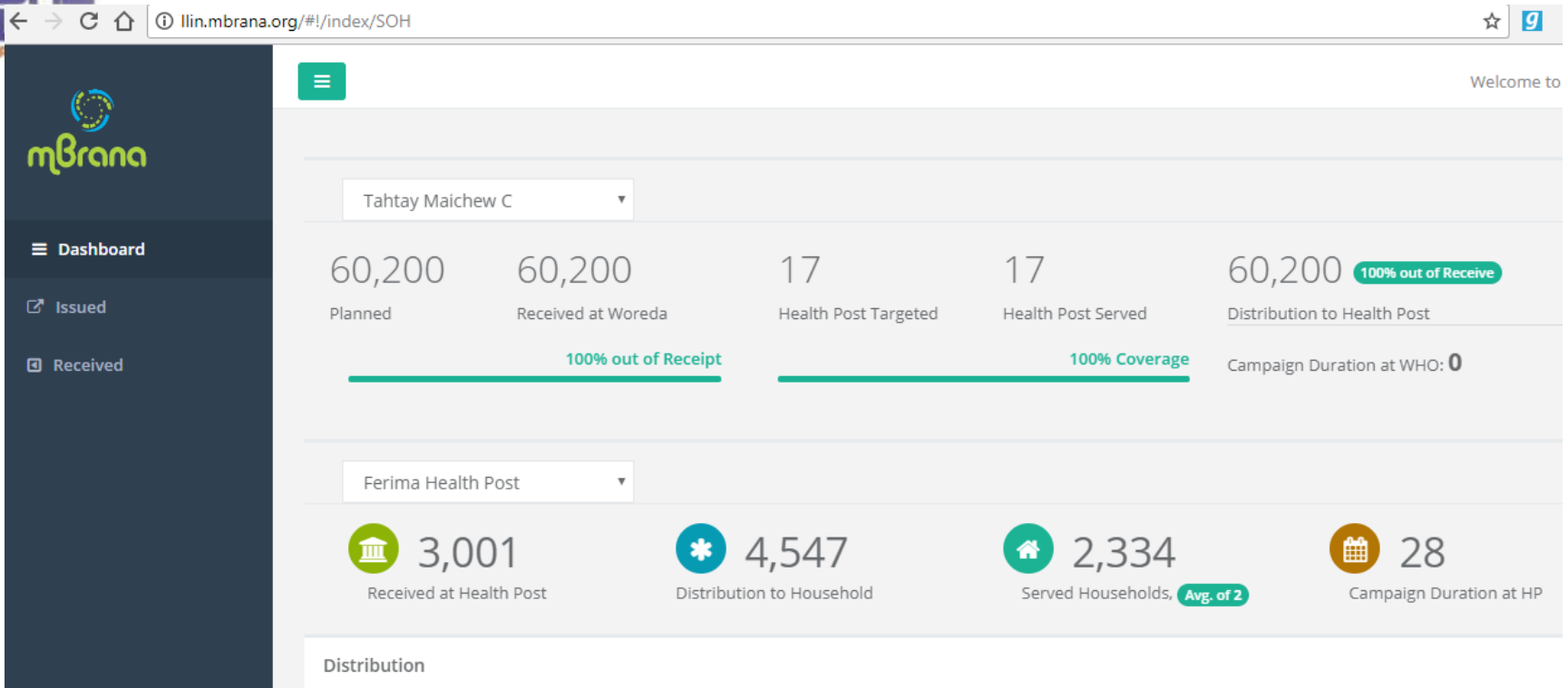


HCMIS dashboard (Fanos)) also automatically displays stock levels and movements geographically.



Question 1: Can we achieve “in-campaign” end-to-end visibility?

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The mBrana dashboard includes quantities received and issued per woreda, and quantity received and dispensed per Health Post. It also includes additional campaign metrics including campaign duration in days and households served.



Question 2: Are Data of Sufficient Quality?

- The dashboards are dependent on **timely, accurate** submissions of data reports to the respective systems.
- System requires that HEWs submit data **on a daily basis, and completely and accurately.**
- Only 75% used the tool daily, 8% 2–3 times per week, and 17% used it weekly.



Question 2: Are data of sufficient quality?

Indicator	Average absolute error
Paper report versus records: Quantity Received by HP	16%
Paper report versus records: Quantity Dispensed by HP	23%
Woreda mBrana report versus records: Quantity Received by HP	16%
IVR report vs records: Quantity Dispensed by HP	76%

This data compares reports matched to in-person visit recordings of paper records at the HP, for 12 HPs which were visited as part of this pilot.



Question 3: Is the tested solution scalable & sustainable? Total Cost of Ownership

- Total cost per campaign at national scale estimated: US\$477,991
- This includes only line items associated with the IVR implementation and operation, including direct operational costs and some hardware depreciation
- Some costs are fixed relative to the use of the technology, while the bulk of the costs (~92%) are variable with the scale of implementation across woredas and health posts
- The largest drivers of variable costs include **implementation support**, **phone time** and **phone hardware** for woreda staff
- Assuming that full national campaigns require **30 million LLINs** and “catch-up” distributions require 10 million LLINs (PMI 2015), these costs would represent **US\$0.02** or ETB0.05 per LLIN respectively.
- Assuming a rough average price of about US\$2 per LLIN (UNICEF), this technology can be implemented and operated for about **1% of the value of the LLIN for campaign distribution**



Question 3: Is the tested solution scalable and sustainable? (Ease of use)

Out of 12 HEW respondents:

- 100% received 1 day of original training and on-the-job training
- 100% reported using the IVR tool
 - 75% used the tool daily, 8% 2–3 times per week, and 17% used it weekly
- On average the time spent using the IVR in each instance was 10 minutes. The minimum was 2 minutes and the maximum 20 minutes (this respondent indicated having network problems).



Conclusions

- The Fanos and mBrana LLIN dashboards can jointly provide comprehensive visibility into **end-to-end LLIN campaign progress**.
- Technology can be implemented and operated for about 1.2% of the value of the LLIN.
- The IVR data collection approach at the HEW level allows for **improved data timeliness** compared to the current paper-based reporting system.
- However, reporting by HEW through IVR was found to be relatively inaccurate as compared to HP transaction records; the HEWs face significant challenges in reporting complete and/or accurate quantities dispensed via the IVR.
- Given the accuracy issues, **new technology solutions and additional user support** should be tested as part of any further scale-up.

The logo for the Global Health Supply Chain Summit features a stylized globe with a human figure inside, set against a blue background with white circular lines. Below the globe, the text "GLOBAL HEALTH" is written in a bold, blue, sans-serif font, and "SUPPLY CHAIN SUMMIT" is written in a smaller, orange, sans-serif font below it.

Recommendations

- The technology does provide **visibility** and appears to be relatively **cost-effective** for deployment **at the last mile of a large LLIN** distribution system, however:
 - Data quality concerns need to be addressed; need to understand if it's a fundamental problem with IVR or can be “fixed.”
- For 2019 campaign:
 - Propose adding a feature that will confirm data submission
 - Test in parallel a modified system with mBrana mobile (not IVR) at health post (requires smartphone)
 - Compare data quality from the two pilots
 - Also look to adapt training protocols to improve data reporting.



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