Vaccine traceability in Tanzania

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Barcode use showing demonstrated benefits but barriers remain

Benefits

Reduction in

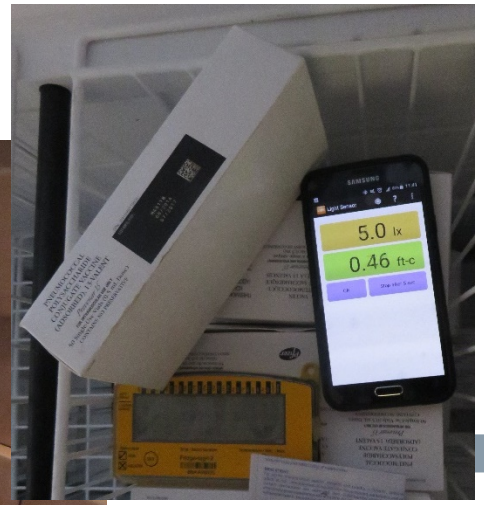
- Excess inventory
- Time to manage inventory
- Waste

While improving

- Ability to identify and mobilize in response to adverse event
- Product availability

Barriers

- Changing product packaging at point of manufacture
- Deploying stock management software to capture data when scanned
- Obtaining hardware appropriate for environmental conditions



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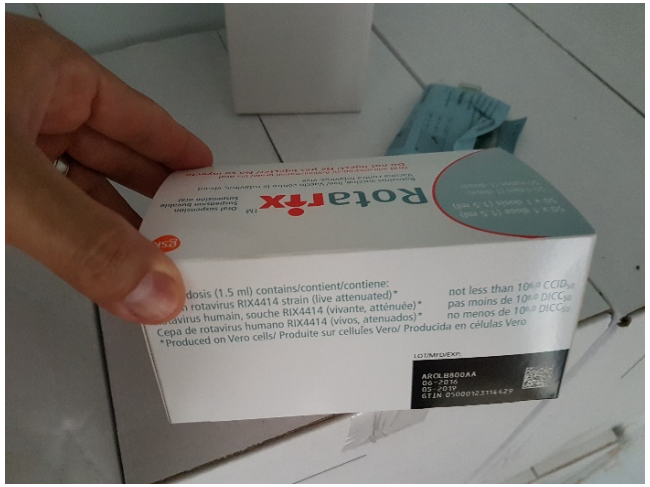
Tanzania has been leading the way on barcode adoption

2012	Discussions with Gavi, the Vaccine Alliance, to partner on barcode pilot
2013	Country-wide evaluation of immunization supply chain processes and opportunities for barcode use
2014	Proof of principle completed demonstrating qualitative evidence for scale
2015	Seven manufacturers shipping vaccine supplies containing GS1 DataMatrix (pilot)
2016	Barcode libraries and interfaces added to electronic Logistics Management Information System (eLMIS)
2017	Costing study for vaccine stock management



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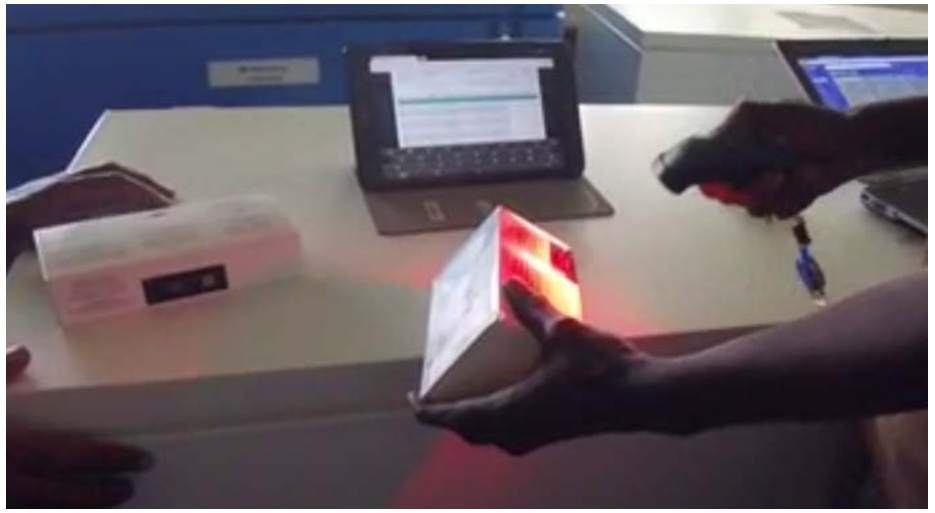
2016—Barcode libraries and interfaces added to electronic Logistics Management Information System (eLMIS)

- The Tanzania eLMIS for vaccines scaled nationally
- Barcode scanning has been incorporated in the entire Arusha region of Tanzania (~1mm doses per year)
- Approximately 85% stock keeping units have barcodes
- Automating data capture of packaging data including product, lot #, expiry



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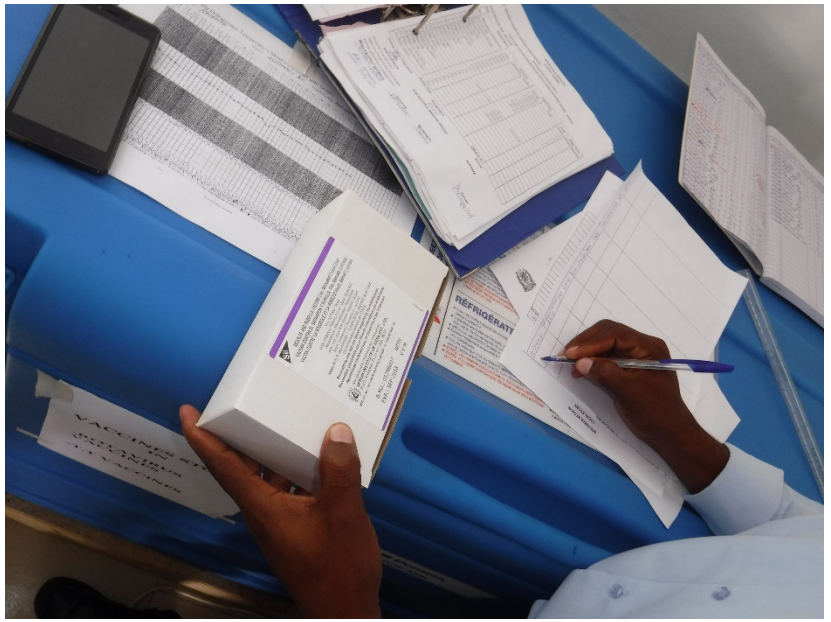
2017—Costing study for vaccine stock management

Focused on barcode use at the Regional Vaccine Store (RVS) and District Vaccine Stores (DVS) in Arusha, and eLMIS use at the RVS and 2 DVS in the Mwanza region.

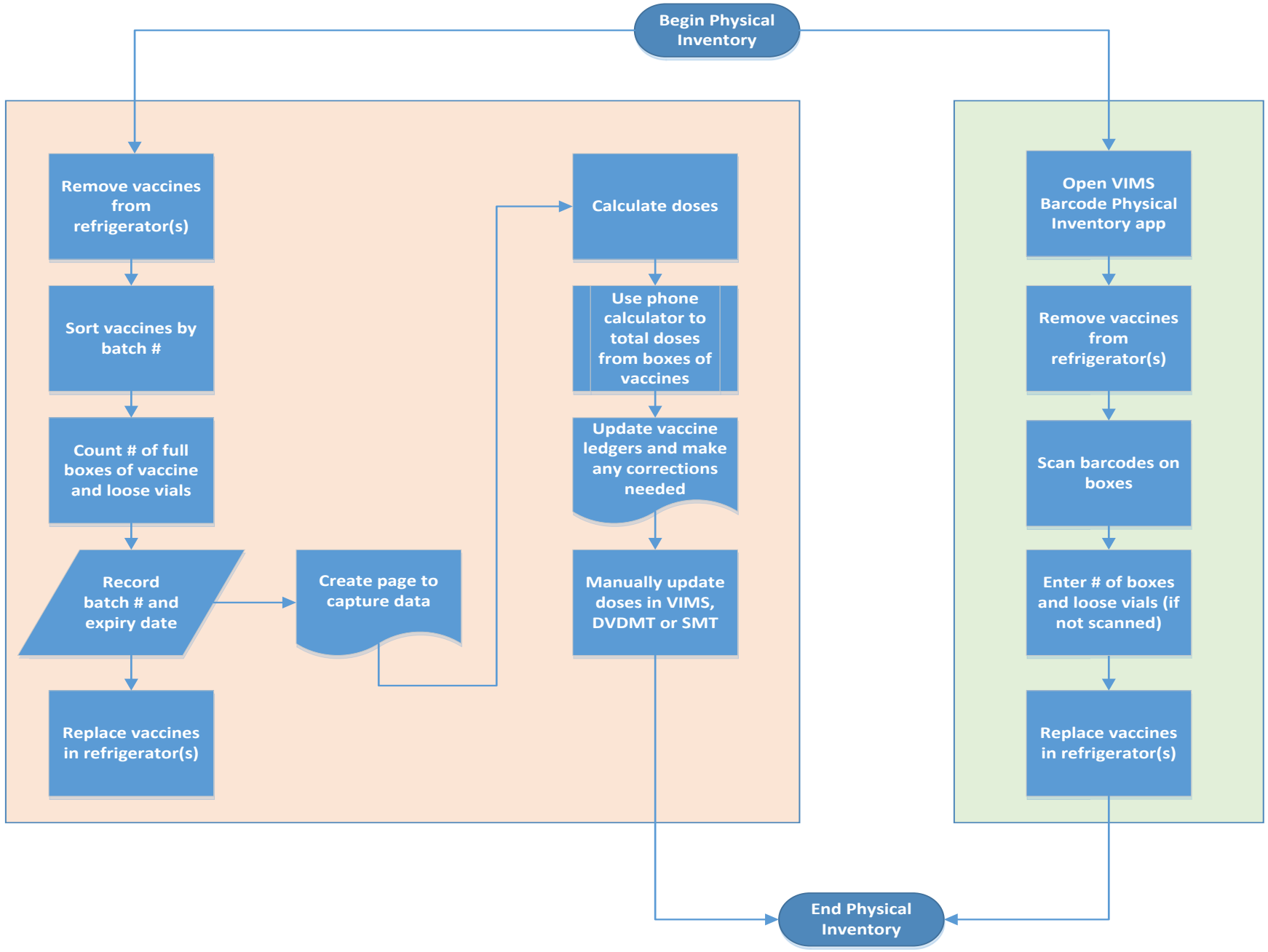
- Observed key vaccine stock management activities pre and post barcode implementation via time motion studies and interviews
- Conducted pre and post implementation questionnaires with RVS and DVS in several regions
- Compared pre and post implementation data and evaluated impact of barcodes on vaccine supply chain management labor costs



Monthly physical inventory process

Paper based system
535 minutes

Barcode + eLMIS system
90 minutes



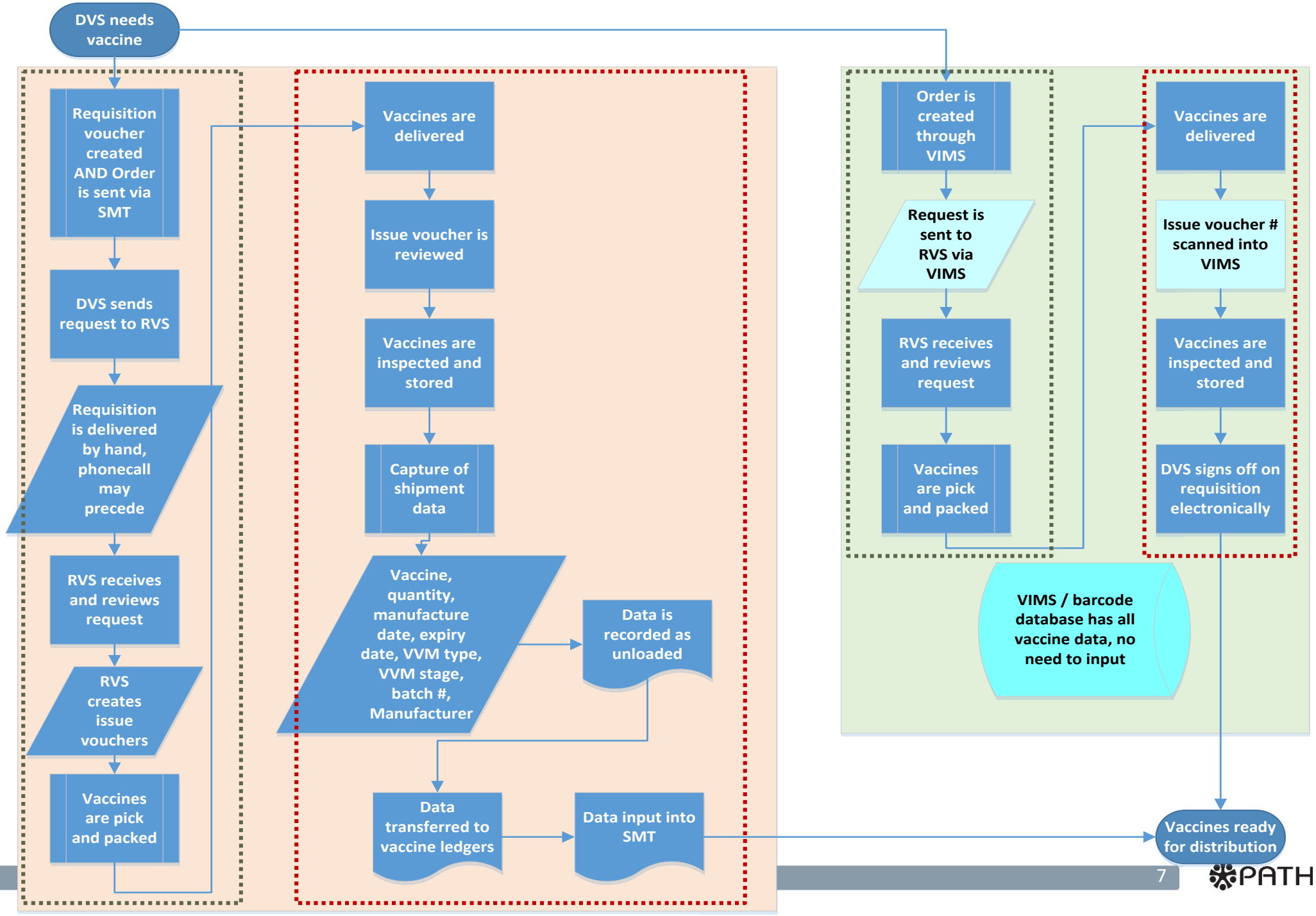
Quarterly resupply process

Paper based system **250 minutes**

Barcode + eLMIS system **86 minutes**

Requesting vaccines

Receiving vaccines



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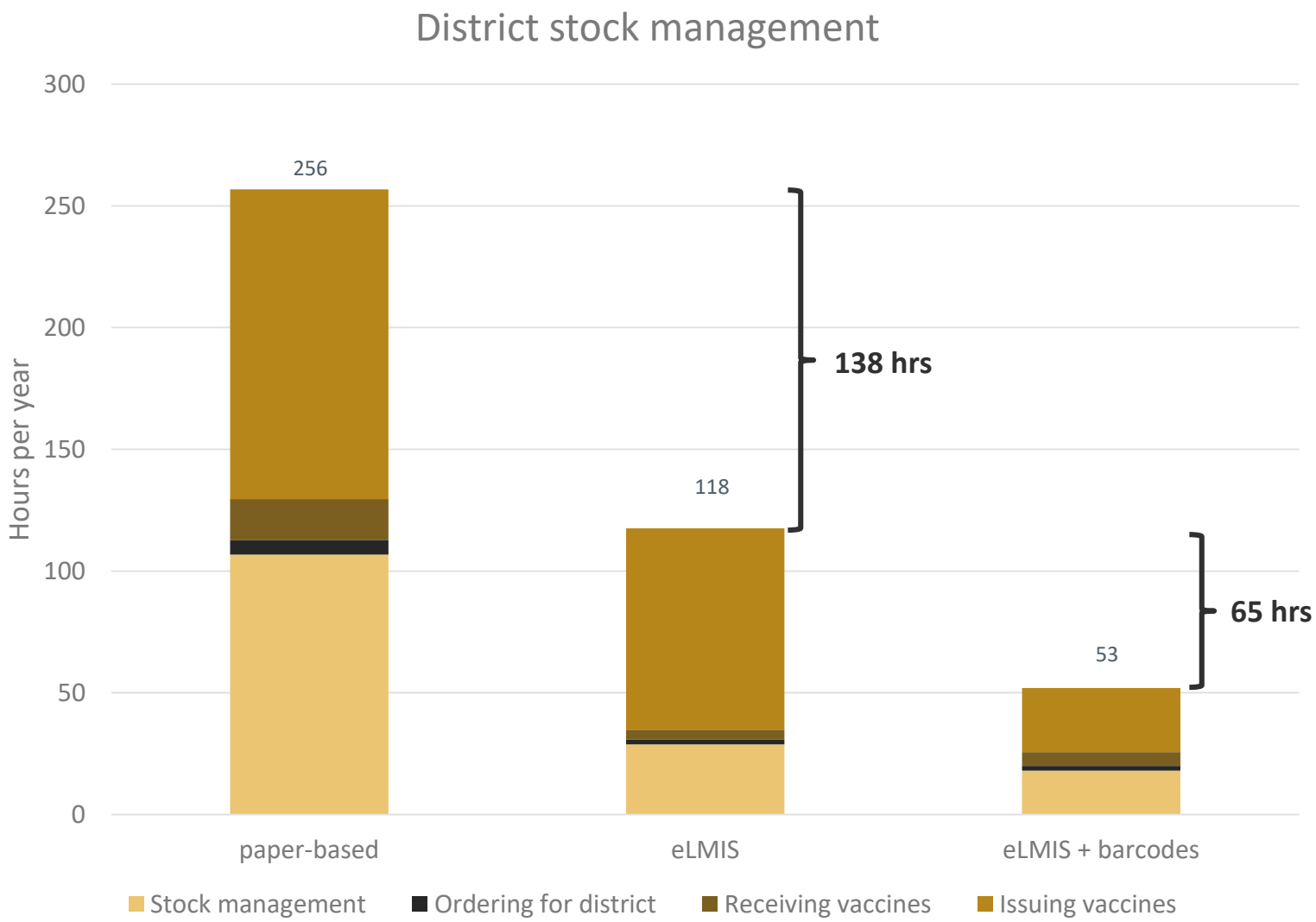
Efficiency of barcodes on the immunization supply chain

Barcode + electronic logistics system can save up to $2,287 per year in labor costs per district on average



- Validate lot approved for distribution
- Enforce FEFO to reduce waste of expired vaccines
- Reduce typing and handwriting errors
- Reduce stockout with accurate inventory
- Avoid emergency order with accurate inventory

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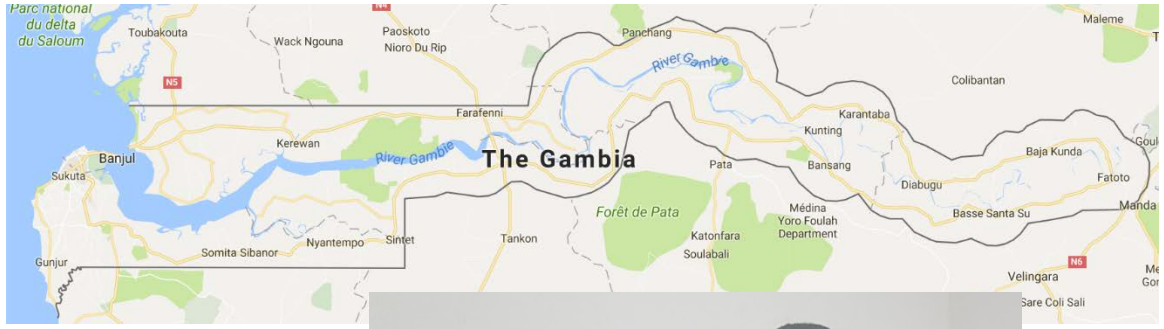
We still have more work to do before we scale in Tanzania, but…

Promising signals

- ✓ **The Gambia**
- USAID
- Gavi
- WHO PQS

Vaccine Visibility System deployment



Promising signals

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Global Health Supply Chain Program sets timelines for GS1 implementation

- Tertiary trade items Dec-2018
- Secondary trade items Jun-2020
- Serialization Jun-2022

Promising signals

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Renewed interest in implementing GS1 in the Immunisation Supply Chain

- policy mandating implementation of GS1 standards for all Gavi-funded vaccines and supplies
- commit funds to help offset costs to UNICEF, suppliers, freight forwarders, and countries

Promising signals

- ✓ The Gambia
- ✓ USAID
- ✓ Gavi
- ✓ **WHO PQS**

Performance, Quality and Safety catalog

- Standardized Global Individual Asset Identifier (GIAI) to track cold-chain equipment at country level with location and maintenance
- UNICEF feedback to Target Product Profile (TPP) requirements
- Industry understanding reliability of their existing products

World Health Organization

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