THE HUMAN ELEMENT IN ELECTRONIC HEALTH SYSTEMS: Getting to Zero ARV Stockouts in Kenya

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PRESENTER DISCLOSURES

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(1) The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:

No relationships to disclose

COUNTRY CONTEXT

- **Kenya: 1.6 million people living with HIV (PLWHIV)**
  - More than 820,000 PLWHIV are on anti-retroviral therapy (ART)
  - ART commodities provided at 320 ordering sites

- **Challenges of managing ART supply chain include:**
  - Staffing challenges
  - Inadequate physical and ICT infrastructure
  - Poor data
  - Decentralization

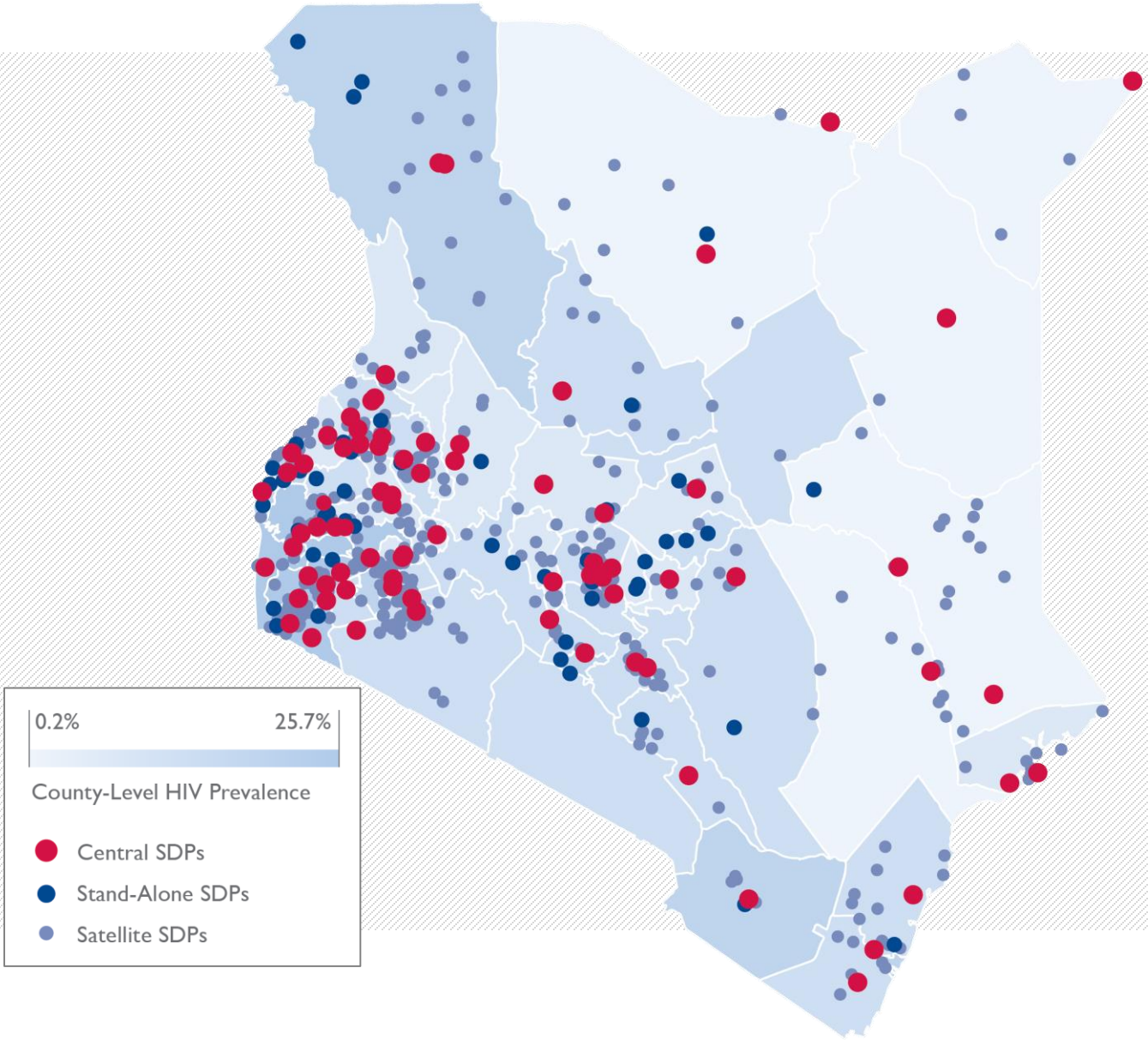
- **ART supply chain managed by Kenya Pharma and Kenya Medical Supplies Authority (KEMSA)**

OVERVIEW OF KENYA PHARMA

- **Six-year USAID-funded project with a mandate to:**
  - Forecast and quantify anti-retroviral (ARV) and opportunistic infection medicines to meet country needs
  - Undertake cost effective procurements
  - Warehouse and distribute ART commodities in a timely manner
  - Manage and use supply chain data for evidence-based decision making

- **Managed more than 50% (420,000) patients on ART in-country**
  - 174 ordering sites and 785 service delivery sites

KENYA PHARMA FOOTPRINT



ISSUE

- **Project goal: To run a sustainable, reliable, and cost-effective supply chain**
- **Threats**
  - Decentralization; transition from a "push" to "pull" system
  - Inconsistent and inaccurate data from service delivery points (SDPs), resulting in
    - Frequent emergency orders
    - Under- and over-stocking
    - Stockouts (46% of sites reported stockouts in project Year 1)
  - Overworked and demotivated staff; reporting not a priority

METHOD

- **Pharma developed electronic supply chain management (e-SCM)**
  - Modeled after paper system used by Kenyan government
  - Used to order and report consumption of ART commodities
  - Added modules for working offline and uploading data later

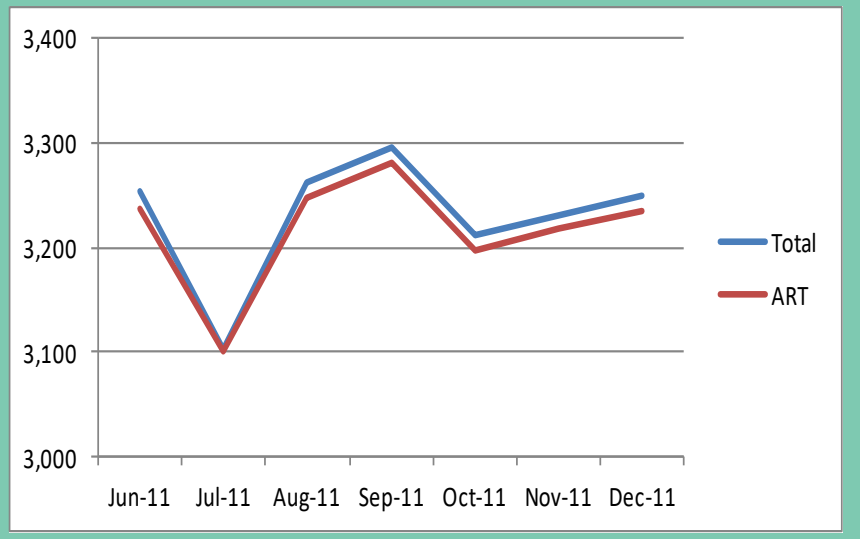
- **Field service team trained health workers on e-SCM**
  - Regular direct contact with all SDPs
  - e-SCM adoption through training and mentorship
  - Trained SDPs on basic trouble shooting
  - Identified e-SCM champions

RESULTS

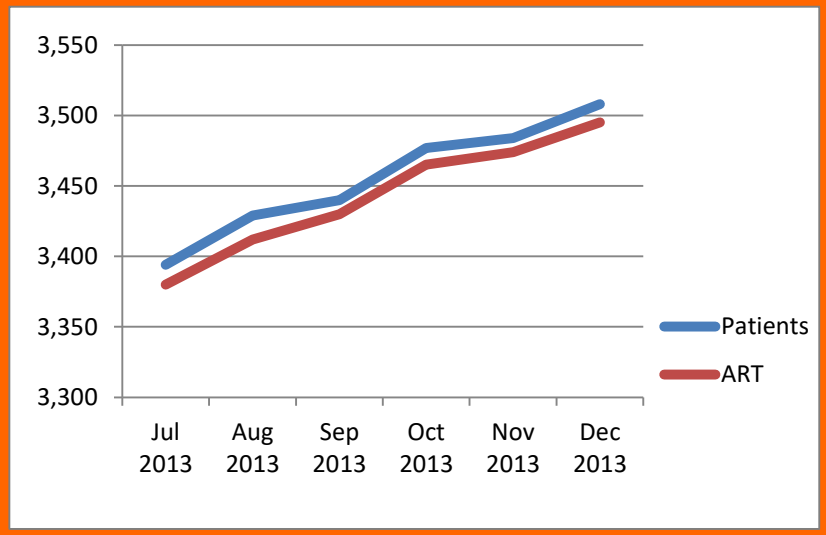
- **e-SCM and people-centered customer service model resulted in timely, complete, and more accurate data from SDPs**
  - 95% of ordering sites used e-SCM
    - Accuracy increased from 56% to 85%
    - 85% of orders and reports submitted on time
- **Health workers appreciated correlation between reported data and order replenishment**
  - Orders delivered within 4 days
  - Stockouts decreased: 46.2% in 2010 to 0% in 2014
- **Service delivery sites owned data; used e-SCM analytics for decision-making**

NAZARETH HOSPITAL DATA TRENDS

Data trend for June-Dec 2011



Data trend for July-Dec 2013



ACCURATE REPORTING AVERTS SHORTAGES OF CRITICAL COMMODITIES

"We used to have shortages. But we don't anymore because we coordinate very closely with Kenya Pharma on sending our monthly reports."

Mureithi Aruja, pharmacist at Rift Valley Provincial General Hospital

Pre-Kenya Pharma
Paper-based reporting system

- Centralized paper system with no feedback
- Delays in submission of reports and orders
- Questionable data quality (incomplete and inaccurate)
- Stockouts of ARVs in **46.6%** of sites

Kenya Pharma Approach
e-SCM + customer service model

- Electronic reporting system with field staff facilitating feedback
- Timely submissions of reports and orders, with **95%** of sites using the e-SCM
- Data ownership and interrogation, improved data integrity, and better data management
- **No** stockouts of ARVs

LESSONS LEARNED AND RECOMMENDATIONS

- Electronic systems **ease reporting burden** and enable health-care workers to concentrate on clinical work.
- Tools alone are not enough. To ensure consistent data, **mentoring and training are necessary.**
- **Feedback** from the central (national/county) level to the service delivery (health-care facility) level is critical.
- **Data quality improves** if the submitting party owns it.
- Project should **plan well for transition and sustainability** of best practices to ensure continuity.

The e-sCM was transitioned to KEMSA, and service delivery sites continue to used it post-Kenya Pharma

FIELD SERVICE MODEL REPLICATED BY KEMSA

Kenya Pharma's field team mentored KEMSA's sales team to continue the project's field role

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