Using data from cStock to Improve Performance of the Community Case Management Supply Chain in Malawi

SC4CCM Project

John Snow Research & Training Institute

2010 Malawi Baseline Assessment

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CCM targets children U5 in hard to reach areas via HSAs, who provide services and medicines, but many programs are hampered by low levels of supplies

Key Findings:

27% of HSAs who manage health products had **four CCM tracer drugs*** in stock on day of visit

Poor HSA logistics data visibility with only **43% HSAs** reporting logistics data to HC

- Limited ability of resupply point to respond to HSA stock needs, including stockouts

94% of HSAs surveyed had a mobile phone

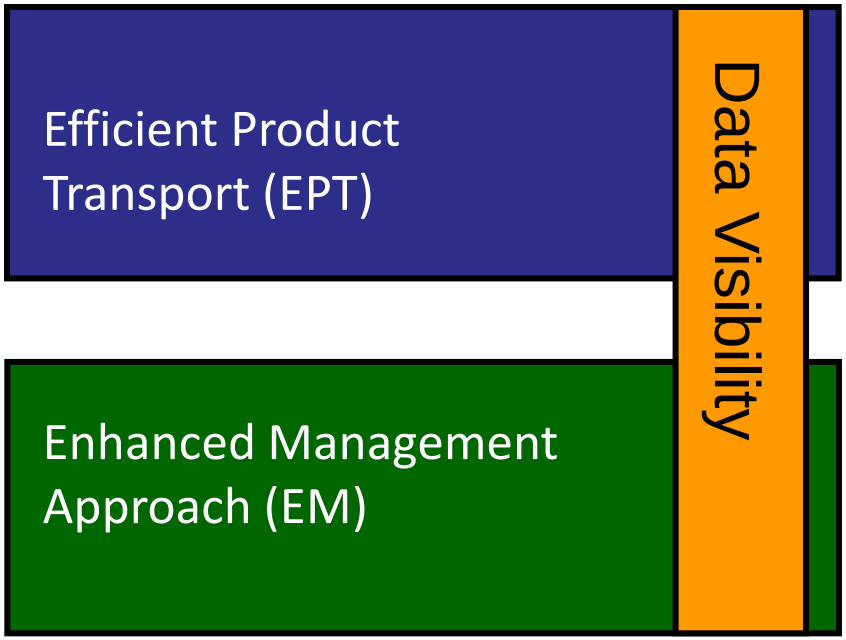
– **85% with network coverage** at least sometimes

Proposed Solution:

SMS-based system to manage reporting and resupply process

*cotrimoxazole, Artemether Lumefantrine 1x6 and 2x6, ORS

Intervention Strategies



Two interventions to improve supply chain performance

- **EPT** to address transportation barriers between resupply points and HSAs
- **EM** to create a customer service oriented supply chain by aligning objectives and motivating SC staff

cStock

- to improve data visibility
- support problem-solving
- enhance quality of decision making to meet customer needs

cStock: Overview

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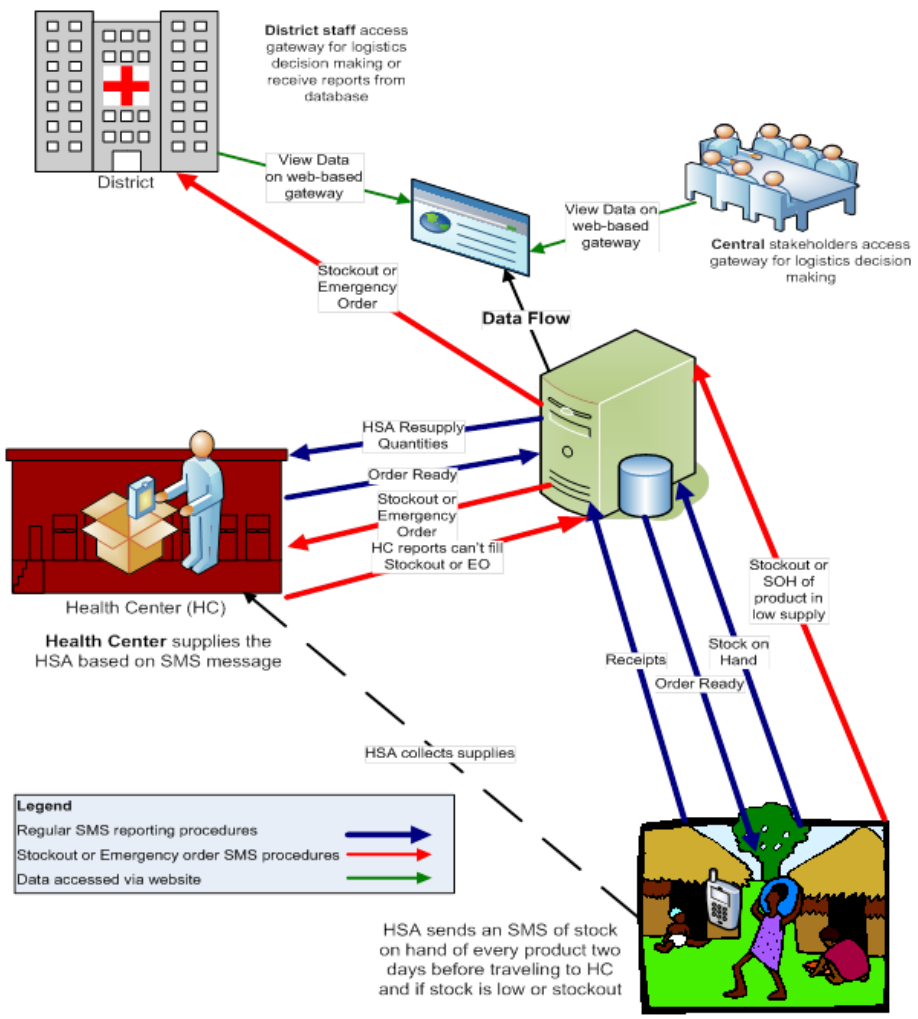

cStock is a rapid SMS, open-source, web-based **logistics management information system** for managing and monitoring community-level essential medicines

- ✓ HSAs send stock information via SMS to cStock
- ✓ cStock uses reported stock data to calculate and transmit resupply quantities for each HSA via SMS to the health centers
- ✓ Health center staff pre-pack orders so ready when HSA arrives to pick up products

cStock: Vision & Objectives

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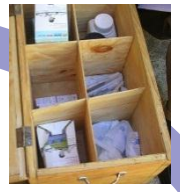
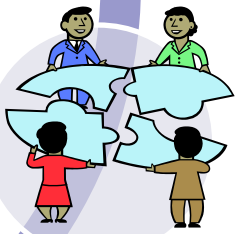
Provide real-time, actionable HSA logistics data for managers, stakeholders to coordinate, plan and identify solutions to better meet customer needs in a timely manner



Improve resupply procedures and visibility into HSA stock levels

Empower SC managers at all levels of the supply chain with HSA logistics data



Improve coordination among stakeholders

Create and promote a culture of data driven decision making

Sustainable, affordable system = no phones provided to HSAs

Improved CCM product availability at community level

cStock: Implementation

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12 Master Trainers

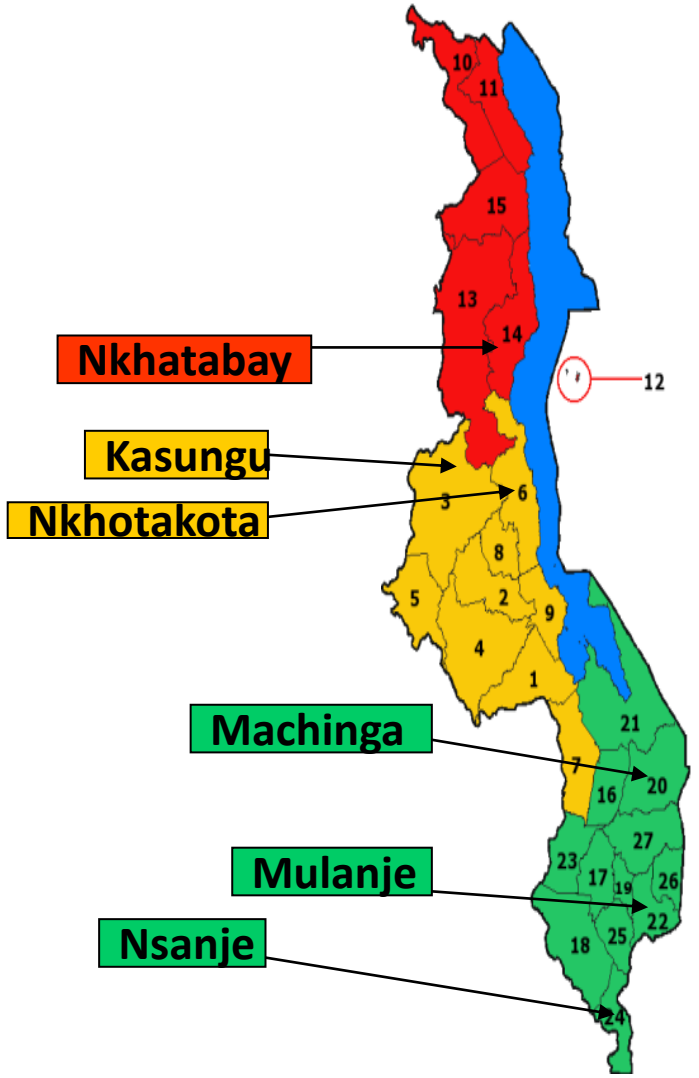
18 District IMCI Coordinators and Pharmacists

6 partners

73 Drug Store i/c (HC)

107 HSA Supervisor (HC)

765 HSAs



- cStock training was administered as part of intervention training in 6 districts from July 2011 to mid December 2012
- 1-2 days of cStock training for all users
- New HSAs receive refresher training through partner support

Q1 Monitoring Results

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Monitoring Sample

System Level	EM	EPT
District health office and pharmacy	3	3
Health Centres	6	7
HSAs	18	18
Total # of HSAs in HTR areas registered in cStock per group from which sample was drawn	337	256

Sources of Data (Quantitative & Qualitative)

- Personal interviews (HSAs, HSAs supervisors, HF Drug store In-Charges, District Pharmacy, IMCI Coordinators) using structured phone-based data collection forms and monitoring log books
- Observations
- cStock data

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Objective: HSAs have usable and quality medicines available when needed for appropriate treatment of common childhood illnesses

Finding:

Of registered† HSAs who manage health products **61%** had the **4 tracer** drugs* in stock compared to **27%** at baseline on DOV

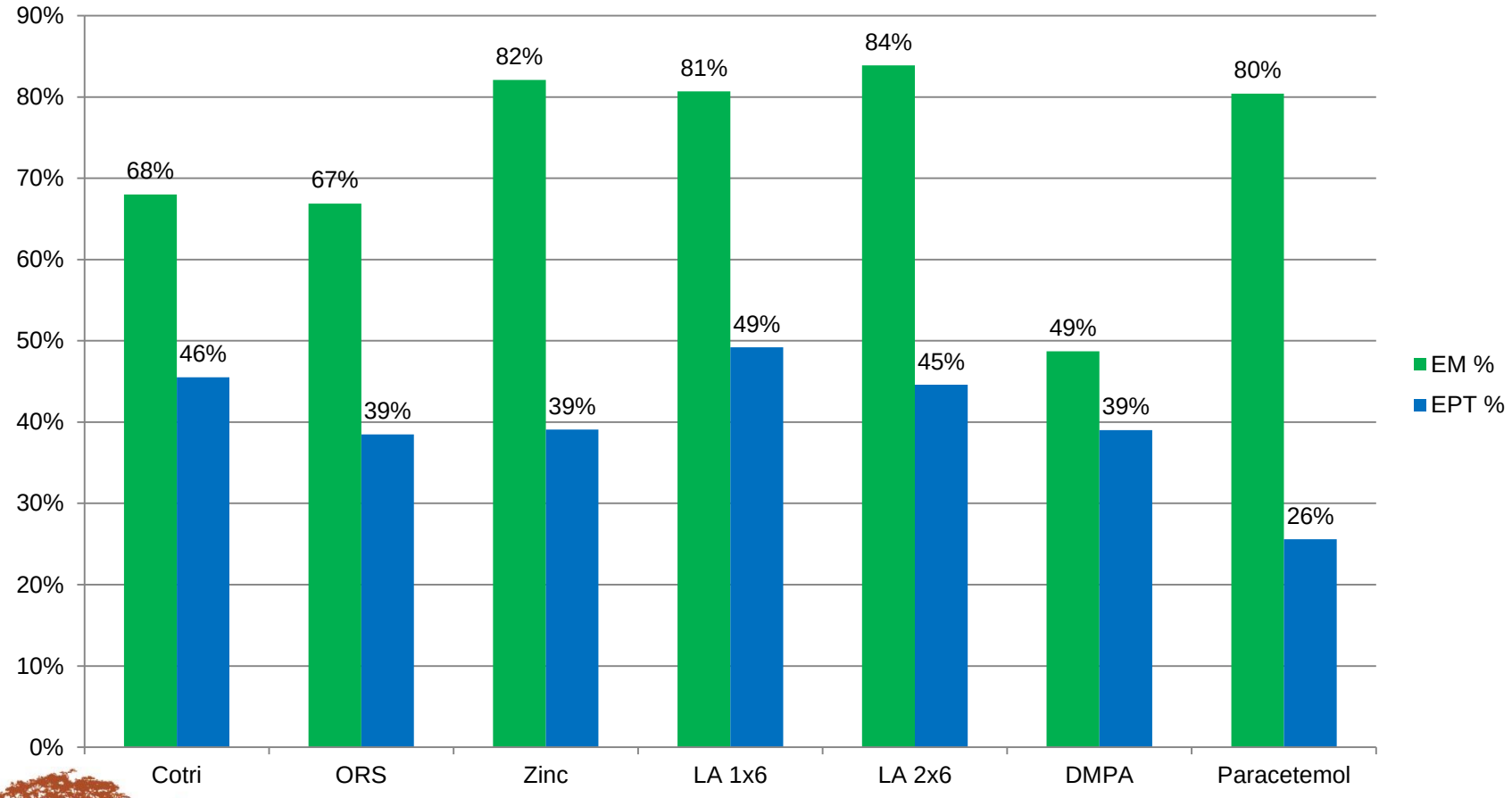
Key Message:

- More than two-fold increase since baseline; most of gains likely driven by targeted product support by partners to community level, cStock also likely contributor

† Registered in cStock

*Cotrimoxazole, Artemether/Lumefantrine 1x6, 2x6, ORS

HSAs with no stockouts over past 30 days of Q1 (Dec), by group



*Source: cStock M&E report

HSAs with no stockouts over past 30 days of Q1 (Dec) by product, by District and group

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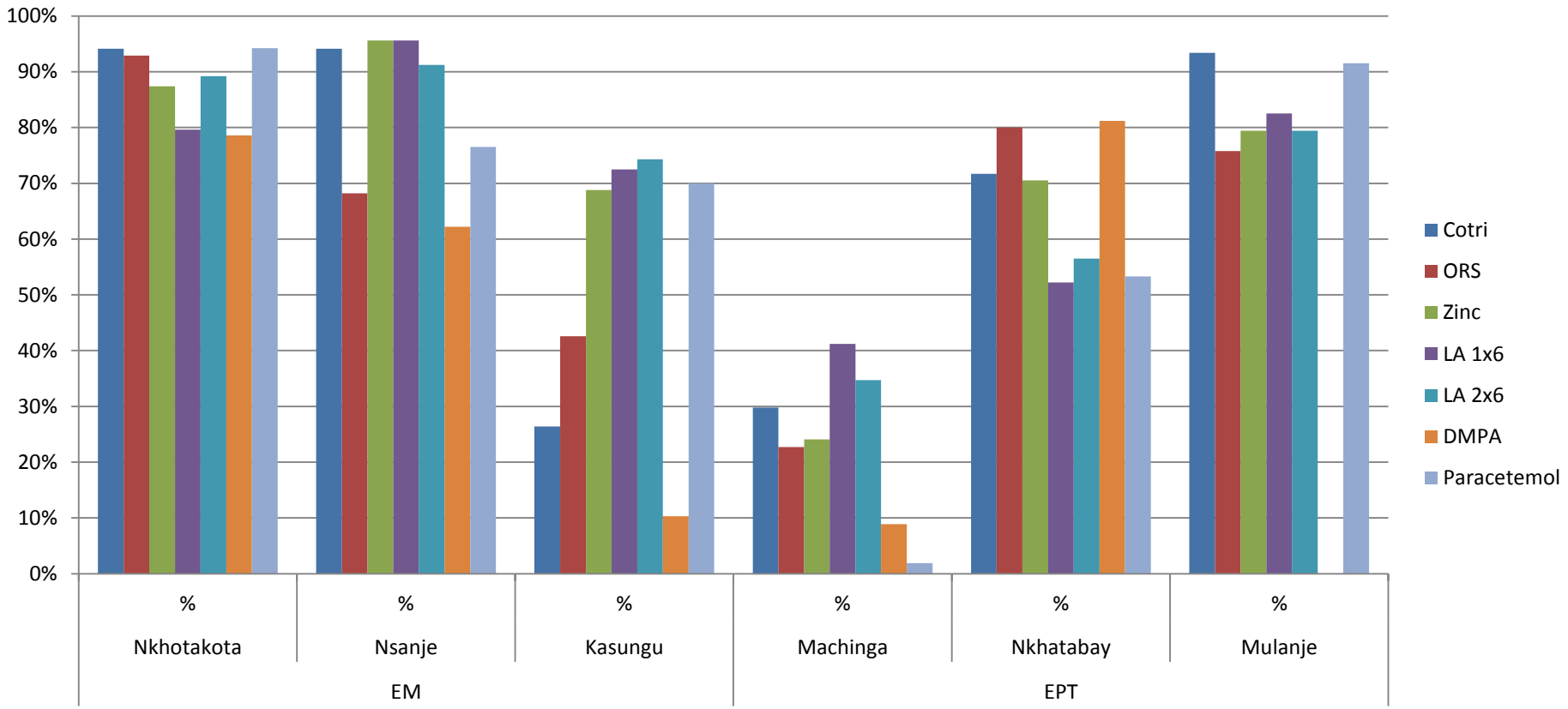

*Source: cStock M&E report

Objective: HSAs, or persons responsible for HSA resupply know how, where, what, when and how much of each product to requisition or resupply and act as needed

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Findings:

- Very high **reporting rate of 97%**
- Report quality measures are lower but still good
  - **80%** of reports are complete
  - Only **50%** HSAs in the EM group report on time by 2nd of month
- Supervisors reported **about half** of HSAs (**57%** EPT and **56%** EM) collected products within 1-2 days of receiving "ready" message

Key Message:

- Significant adoption of cStock among HSAs
- Visibility into HSA stock levels greatly improved, with high uptake and capacity in using cStock
- Timely availability of data can improve timely collection of products

Lessons Learned: Implementation

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Context specific solutions: Understanding the specific system, bottlenecks, and resources is critical to designing solutions that improve supply chain performance for CHWs

- **Telecommunications infrastructure**: the presence/absence of an SMS aggregator, relative experience of telcos in working with the public sector, and the type of network coverage (GSM, GPRS, CDMA) can all increase time and complexity of system implementation

- **Peer-to-peer learning**: not all HSAs knew how to send SMS so pairing unskilled and skilled HSAs together facilitated peer-to-peer learning during training

Lessons Learned

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Iterative learning approach: Understand the gaps, assess the opportunities, identify the solutions, implement, monitor the data, tweak the intervention, improve results

- Baseline evaluation
- Lack of data
- cStock user requirement workshops
- Implementation period
- Intervention monitoring and user feedback
- **cStock feature enhancements, reflecting greater user experience**

Iterative requirements gathering

- Initial requirements may not fully reflect user needs due to inexperience with the system
- User interface can be refined after experience gained
  - Group messaging
  - Enhanced data visualization

Lessons Learned

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A clear vision, objectives and principles can ensure that a successful system does not get overloaded with non-core requirements

- Successful implementation can lead to users wanting the system to become everything to everyone, which could ultimately harm the system
- Explore creative ways to link data from multiple systems to meet policy maker needs

Conclusions

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As e-Health systems proliferate, advocacy should include messages to policy makers to clarify the difference between "one system" and "one application"

- A LMIS reporting system targeting 3,000 health centers may have very different requirements than a system for 30,000 community health workers
- The solution might be two separate applications
- Multiple applications can be designed to be interoperable with each other and therefore can work as one "integrated" system to enhance overall data visibility to improve supply chain performance


Thank You
Questions?
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