Linking HMIS & LMIS Data to Improve Supply Chain Performance

Supply Chain Technical Resource Team,
UN Commission on Life-Saving Commodities

Dakar, Senegal

Acknowledgements

Life Saving Commodities
Improving access, saving lives

VillageReach

dimagi

JSI
John Snow, Inc.

UiO : Department of Informatics
University of Oslo

Agenda

- Background on UNCoLSC and their work on integrating HMIS/LMIS data for supply chain improvement
- Pilot in Tanzania
- Pilot in Senegal
- Conclusion

Context

The UN Commission on Life-Saving Commodities for Women & Children

13 life-saving commodities

10 recommendations

6 million
women & children could be saved

The Supply Chain Technical Resource Team

Supply chain challenges, left unaddressed, erode the value of all other investments in health.

Motivation: The theory behind combining HMIS & LMIS data

Logistics Management Information System (LMIS)

An LMIS provides the data needed to operate a supply chain. It collects data about health products such as quantities consumed, stock on hand, losses and adjustments.

Integrated HMIS/LMIS Dashboard

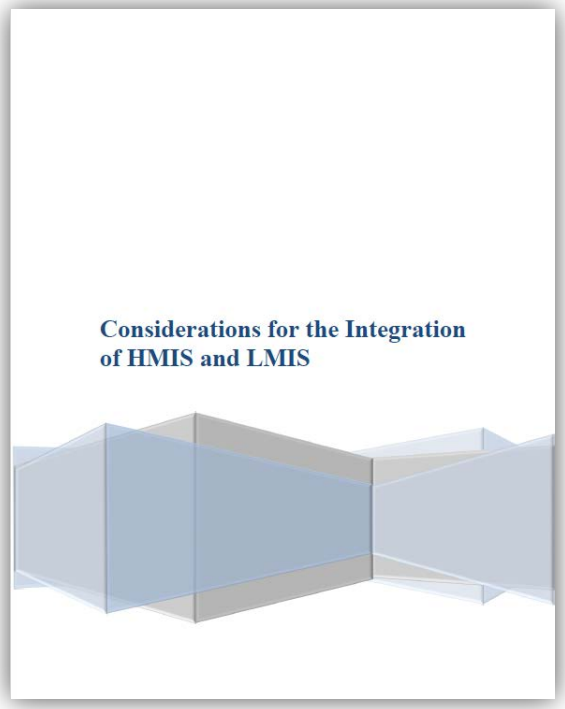
Improved supply chain performance, improved service delivery, better data, and enhanced communication.

Health Management Information System (HMIS)

An HMIS collects and reports program information such as disease incidence, client/patient information, and health services rendered. HMIS data can be used to track disease patterns and health service utilization.

Motivation: The reality of integrating HMIS & LMIS data

- Despite great interest in combining HMIS & LMIS data, there are few country examples where this is routinely implemented.
- Thus the UNCoLSC decided to test HMIS/LMIS integration projects with the 3 UNCoLSC-funded information systems.
- Tanzania & Senegal chosen as initial deployment sites.
  - User requirement gathering started in Tanzania in January 2015
  - Initial conversations started in Senegal in September 2015
  - Overall intent of the project is document the real-world experiences, considerations and lessons learned to assist deployments in other countries.



OpenLMIS, CommCare Supply & DHIS2

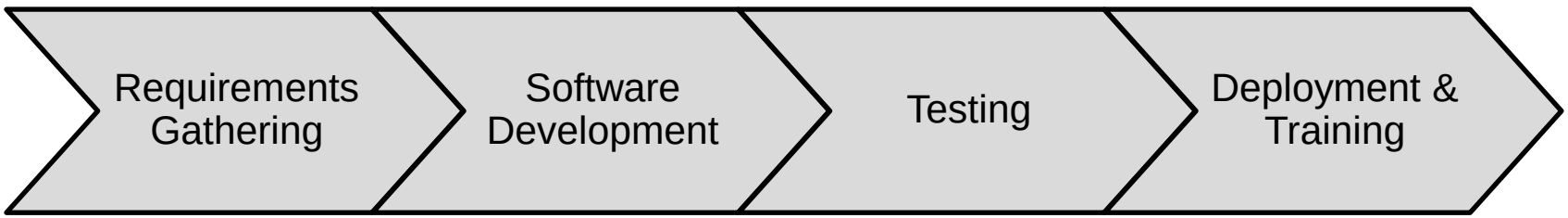
LMIS

OpenLMIS is a multipartner open source logistics management information system. The OpenLMIS implementation in Tanzania is known as “eLMIS.”

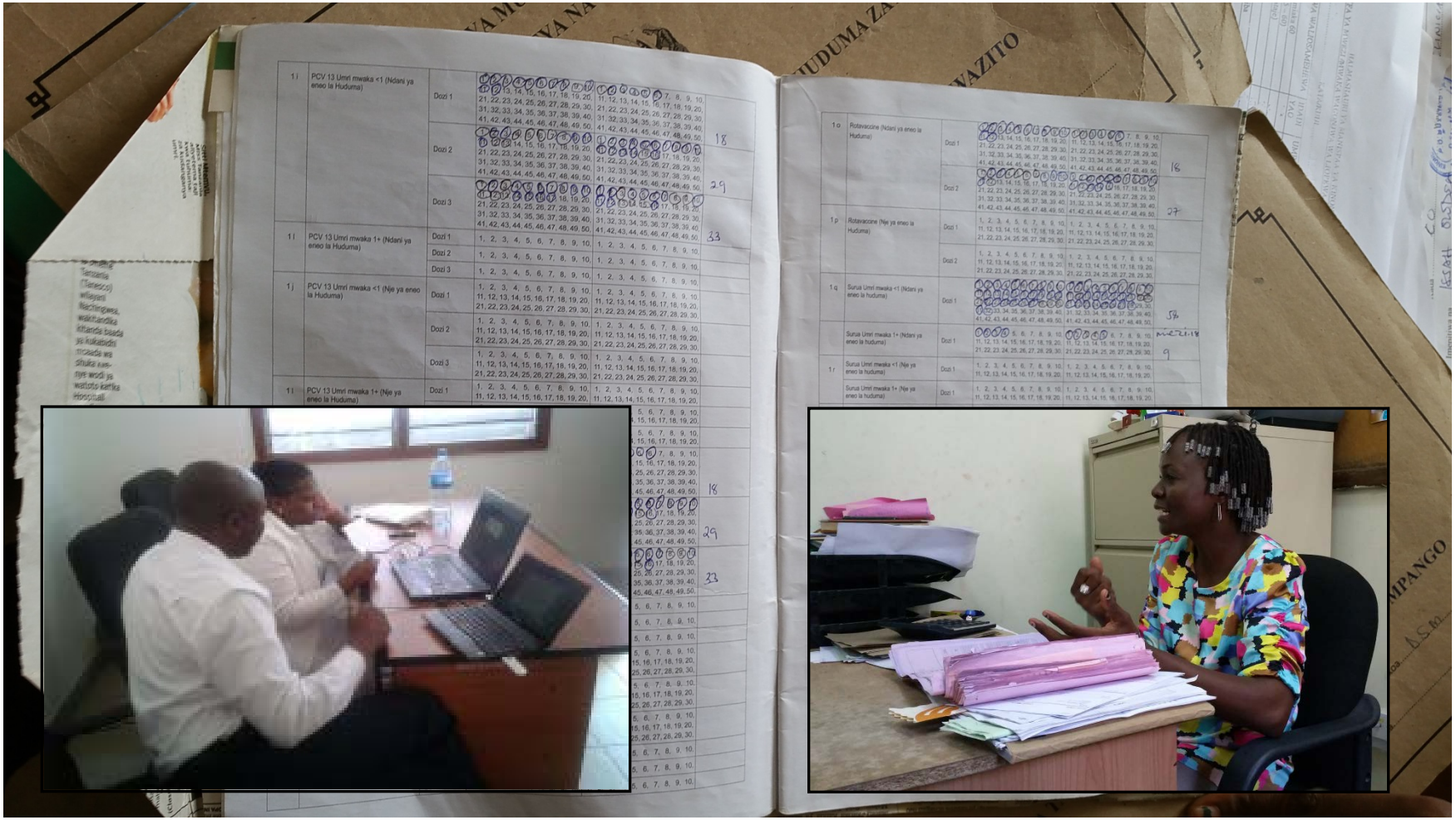
CommCare Supply is a product designed to help frontline health workers manage commodities.

HMIS

DHIS 2 is a flexible, web-based open-source information system with visualization features including GIS, charts and pivot tables.



1st Pilot Site: Tanzania



Tanzania

- Progress
  - System requirements and considerations
    - Manual matching of facility lists
    - Database and software updates to enable data sharing
  - User requirements
    - Requirements gathering workshop with stakeholders
    - Research and interviews to refine user requirements
    - Generated mockups and collected feedback

Tanzania

Mapping LMIS products to client service data reported through HMIS forms

Taarifa ya Mwezi kutoka Wodi ya Wazazi

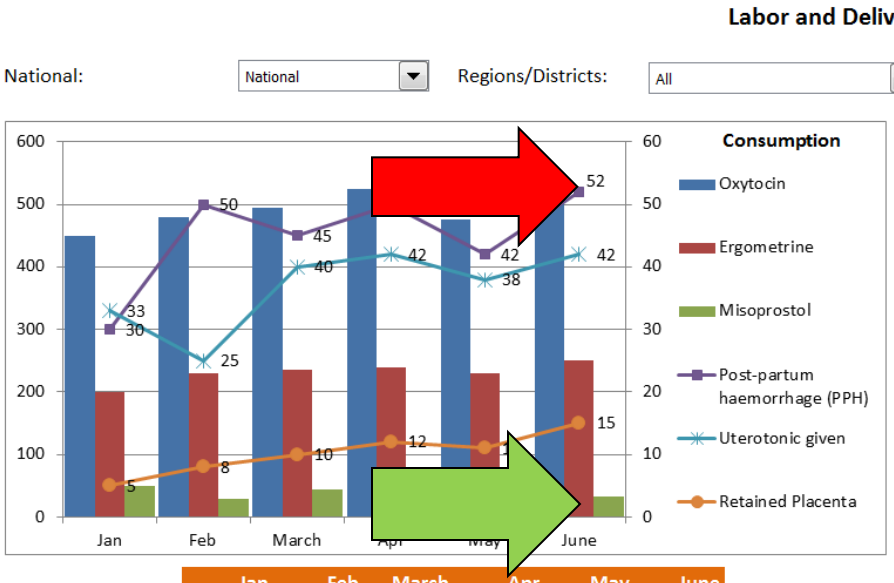
Namba	Maelezo	Umri < miaka 20	Umri miaka 20 au zaidi	Jumla
1	Waliotarajiwa kujifungua			0
2	Taarifa ya Waliojifungua			
2a	Waliojifungulia katika kituo cha kutolea huduma za afya			0
2b	Waliojifungua kabla ya kufika kituoni (BBA)			0
2c	Waliozalishwa na wakunga wa jadi (TBA)			

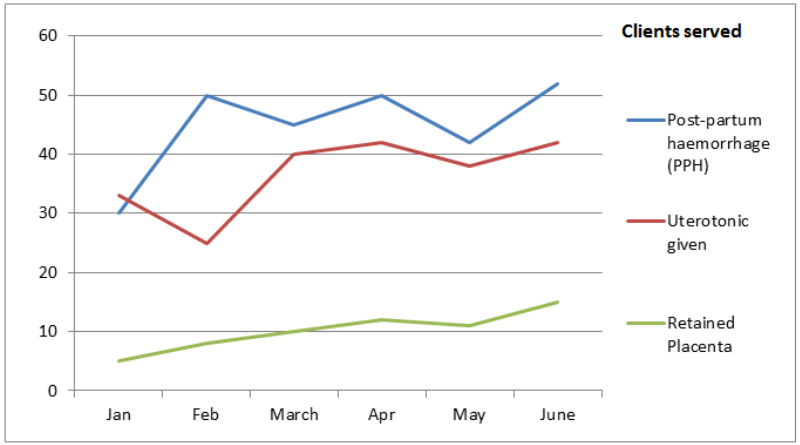
	Family Planning	• Female Condoms • Implants • Emergency Contraceptive
	Maternal Health	• Oxytocin • Misoprostol • Magnesium sulphate • Injectable antibiotics

	Number	Life saving products	DHIS2 Indicators	DHIS2 Reporting Forms	Notes
2d	1	Oxytocin/Ergometrine	Post-partum haemorrhage (PPH) Uterotonic given Retained Placenta	L&D 2a L&D 6a L&D 7b L&D 6e L&D 3g	Ergometrine is not used that often
2e					
3	2	Misoprostol	Post-partum haemorrhage		Used at referral hospitals. Misoprostol usage at lower level facilities is being encouraged
3a					
4	--				
4a	8	Oral rehydration salts (ORS) ORS for 1 Litre (10050010MD)	Diarrhea, Acute (< 14 days) Diarrhea, Chronic (.> 14 days) Cholera Dysentery	OPD 5,6 19, 20 OPD 21	DTC register can provide more data related to diarrhea. Other data elements from that register can be used as well.
4b					
4c					

Tanzania

LMIS data compared with service data
(sample dashboard graph with sample data)





	Jan	Feb	March	Apr	May	June
Oxytocin	450	480	494	524	475	530
Ergometrine	200	230	235	240	230	250
Misoprostol	50	30	45	38	35	32

	Jan	Feb	March	Apr	May	June
Post-partum haemorrhage (PPH)	30	50	45	50	42	52
Uterotonic given	33	25	40	42	38	42
Retained Placenta	5	8	10	12	11	15

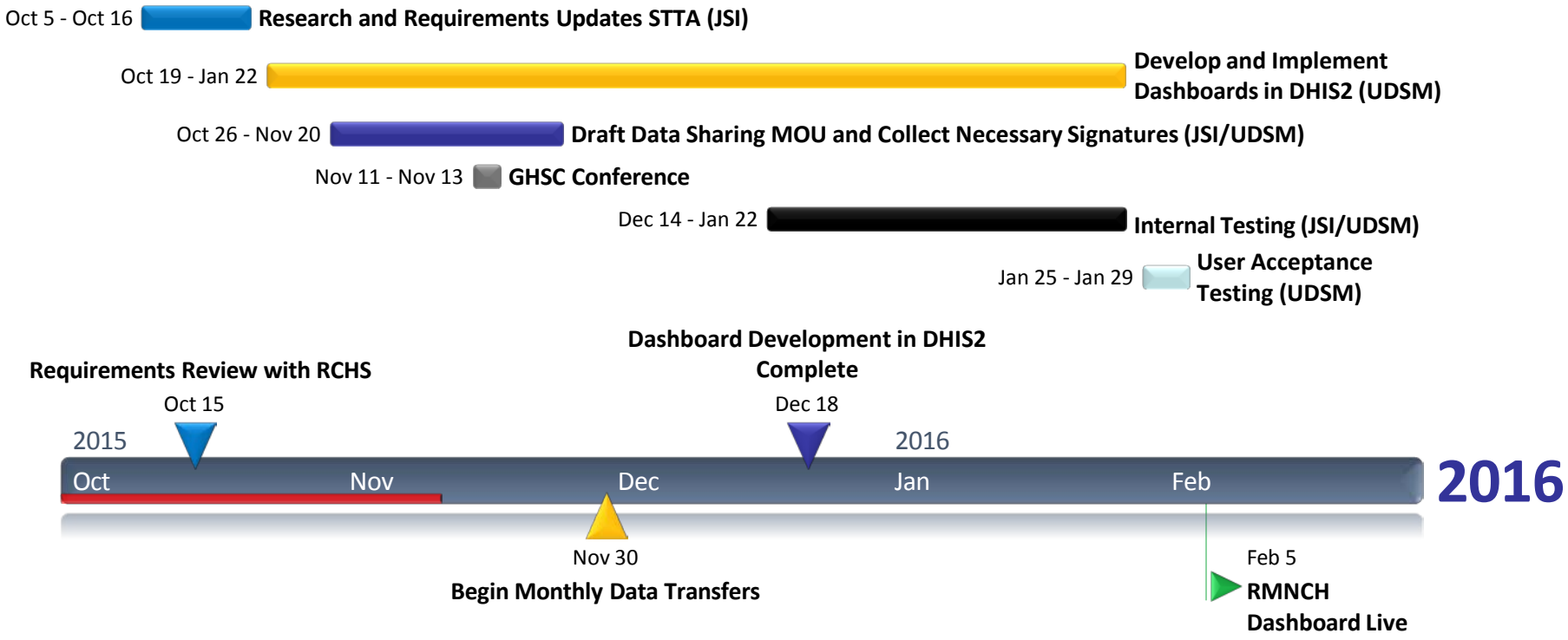
Tanzania

- Challenges & Lessons Learned
  - Reporting period mismatch
  - Facility/product list matching/synchronization
  - Data interpretation

- Mitigation & Recommendations
  - Calculated month
  - Updates to reporting period
  - Matched lists manually and developing maintenance SOP
  - Integration of all systems with Master Health Facility List
  - Mapping of service and commodity
  - Updates to HMIS form
  - In-depth analysis to establish red/yellow/green thresholds

Tanzania

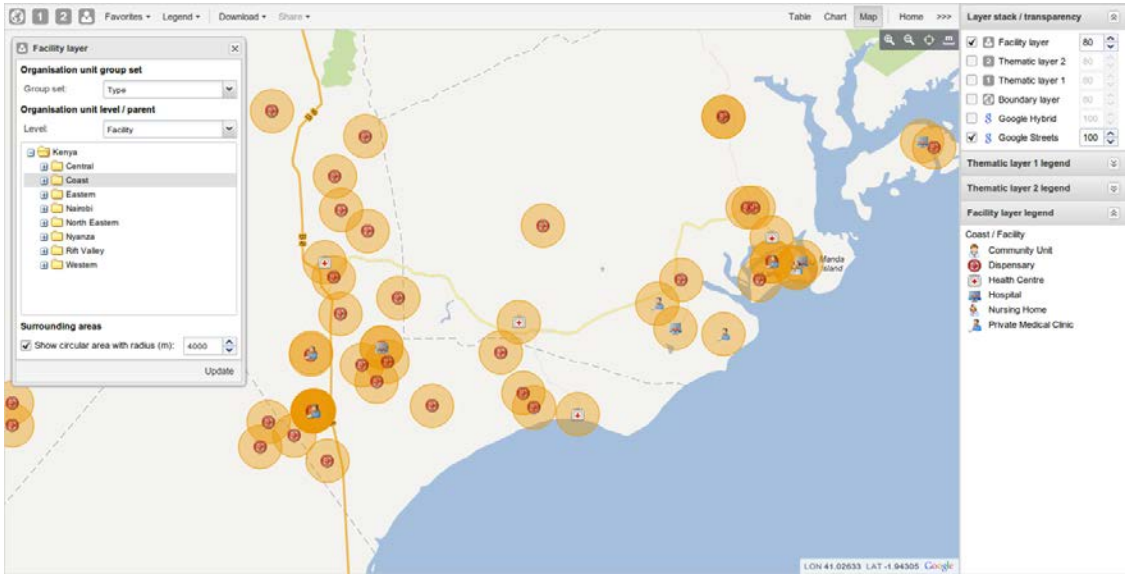
Timeline



2nd Pilot Site: Senegal

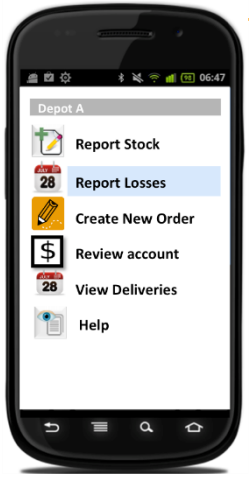
Senegal

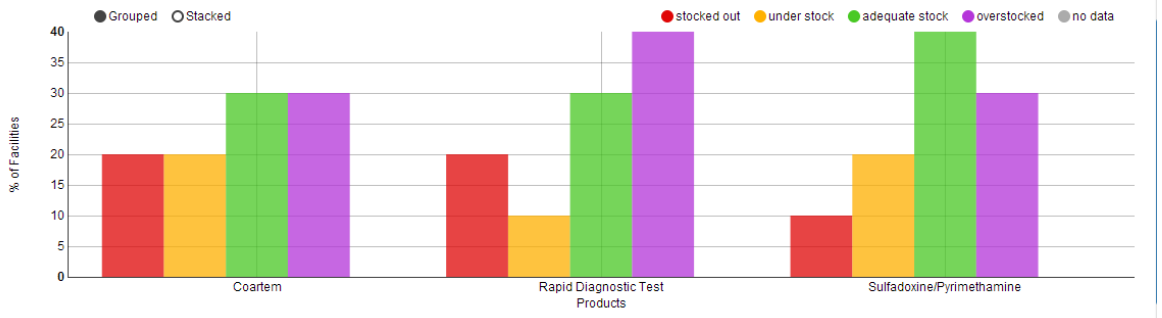
- **Systems**
  - **DHIS 2 – National HMIS**
    - Developed by U.of Oslo ; Used in 40+ countries ;
    - Installed 2 years ago in Senegal - Deployed in all **75** districts
    - Used for periodic statistical reports, compiling data received from districts
    - Has more than 600 active users to date



Senegal

- **Systems**
  - **CommCare Supply – Logistics MIS used for IPM in FP**
    - Developed by Dimagi ;
    - Mobile tool designed to improve logistics to the supply chain last mile
    - **1million+** stock reports from **7000+** facilities, **3000+** HW in 10 countries
    - Used for Informed Push Model in **1400** health facilities in Senegal
    - Tracks 11 family planning products (ongoing pilot for 33)
    - Functionalities : Stock Activity Monitoring, Requisitions and Orders, Automated Analysis, Rich Reports and Graphs, Cloud-Hosted Solution





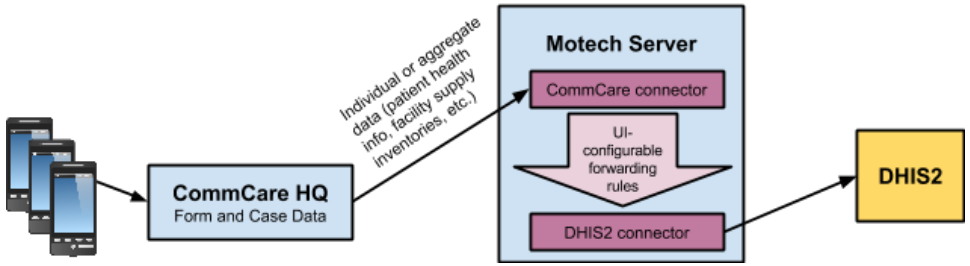
Product	Stocked Out	Understocked	Adequate Stock	Overstocked	Insufficient Data
Coartem	20.0%	20.0%	30.0%	30.0%	0.0%
Rapid Diagnostic Test	20.0%	10.0%	30.0%	40.0%	0.0%
Sulfadoxine/Pyrimethamine	10.0%	20.0%	40.0%	30.0%	0.0%

Senegal

- **Potential information gaps that an integrated dashboard could support**:
  - Lack of visibility on stock data for DHIS2 users
  - Lack of visibility on service delivery data for CommCare Supply users
  - Potential data duplication
  - Potential data inaccuracy

Senegal

- We will use **MOTECH** to integrate the two systems
- Open source software developed by Grameen Foundation



Data Services:

- **Map data** between systems (ex. CommCare stock to DHIS2 facility)
- **Share Data Records** (general purpose tracking of facilities, clients, etc.)

Tasks & Events:

- Trigger action in one system based on what happened in another (ex. Send email if a CommCare case being updated)
- Transform data (formatting text, lookup data in other systems, etc.)

Senegal

- **Progress to date**

MoH Buy-In	**22 Sep**
Kick-off call	**22 Oct**
User requirements	**16-20 Nov**
Confirm feasibility	**Jan 2016**
Pilot Dashboard	**March 2016**
Final Dashboard	**June 2016**

- **Next week** we will be gathering requirements for the dashboard and answering the following questions:
  - How are DHIS2 & CommCare Supply currently used? Are there existing information gaps?
  - Which users (at which level of the health system) could benefit from having access to routine HMIS and/or LMIS data?
  - What challenges can we anticipate in trying to integrate datasets (incongruent reporting periods, differing facility names, etc).

Conclusion

- Interoperability between electronic HMIS and LMIS systems is possible

- AND -

- Interoperability requires commitment and engagement from stakeholders to predict and troubleshoot issues.
- Needs to be adapted to the context to understand the unique information gaps and user requirements of each country.

Logenix International

LMI

USAID
FROM THE AMERICAN PEOPLE

JSI

CHEMONICS

MEBS GLOBAL

LLamasoft
Supply Chain By Design

PFSCM

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