



DEPLOYING AN ELECTRONIC LMIS:
MAKING THE RIGHT CHOICE

Medexis eLMIS Software and Services



Presented by Per Kronslev and Landry Medegan
15:00 CET, October 14th, 2021



i+ Agenda: Medexis & i+solutions



1. Background
2. Design
3. Features
4. Implementation
5. Dashboards
6. Burundi Case Study
7. Q&A



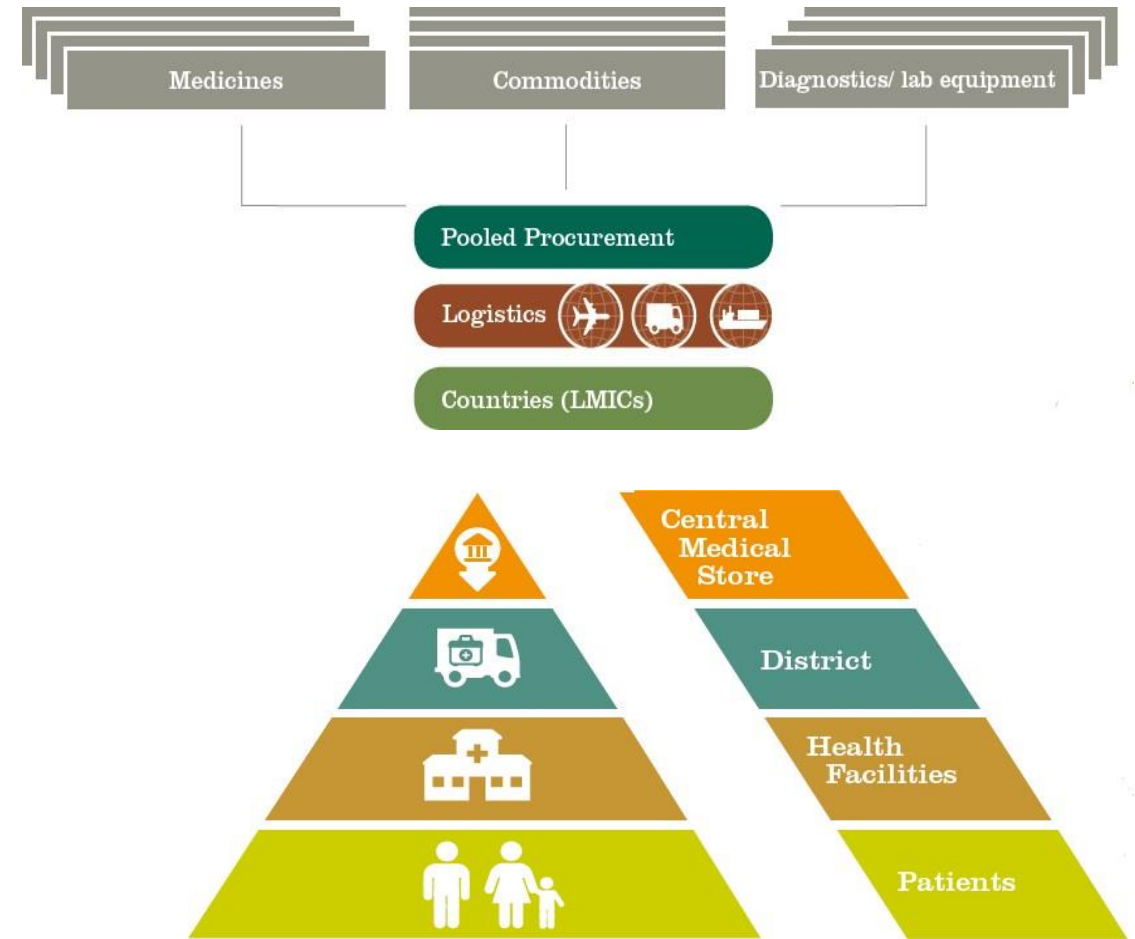
i+ Background: i+solutions

+ Upstream

- + Procurement agent for Global Fund and individual countries: HIV, malaria, TB, PPE, & essential medicines

+ Downstream

- + In-country system strengthening (Burundi, DRC, Mali, and Nigeria)
- + Training (i+ academy)
- + Innovative data system and analysis
- + Electronic Logistics Management Information System (eLMIS) - **Medexis**



i+ History: Medexis



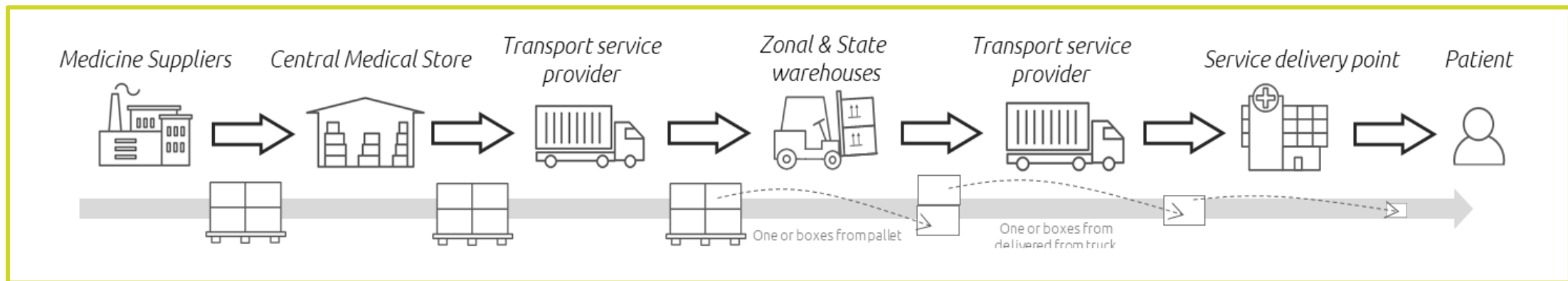
- + In 2017, the industry saw improvements
 - + Paper-based LMIS
 - + In-country health commodity supply chains in previous years
- + Structural challenges remained
 - + Data & information visibility and accuracy related issues
 - + Processes and tools related issues



i+ Data Visibility and Accuracy



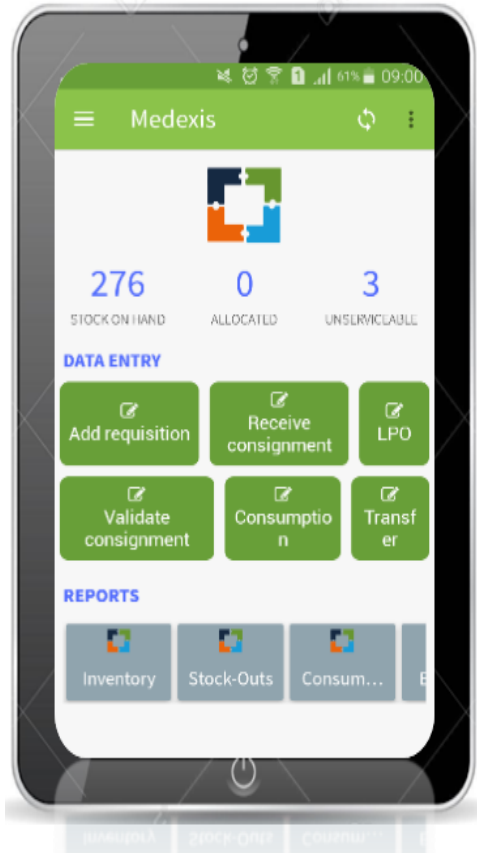
- + Lack of real time visibility of supply chain information
- + Lack of reliable data / issues with data accuracy
- + Data missing or not reported in the paper process: part of the data missing or reported untimely
- + Lack of an 'end to end' view, especially the ability to view the situation at the last mile



i+ Medexis Design: an easy-to-use eLMIS



Medexis provides logistical visibility across all echelons of the supply chain



- + Cloud and android-based
- + End-to-end product tracking tool
- + Embedded Logistics Management Information System (LMIS)
- + Reporting capabilities and features
- + Available as Software as a Service (SaaS)
- + Multi-users interfaces for web browsers, smart phone and Tablet
- + Network-agnostic mobile and web software

i+ Medexis: Features

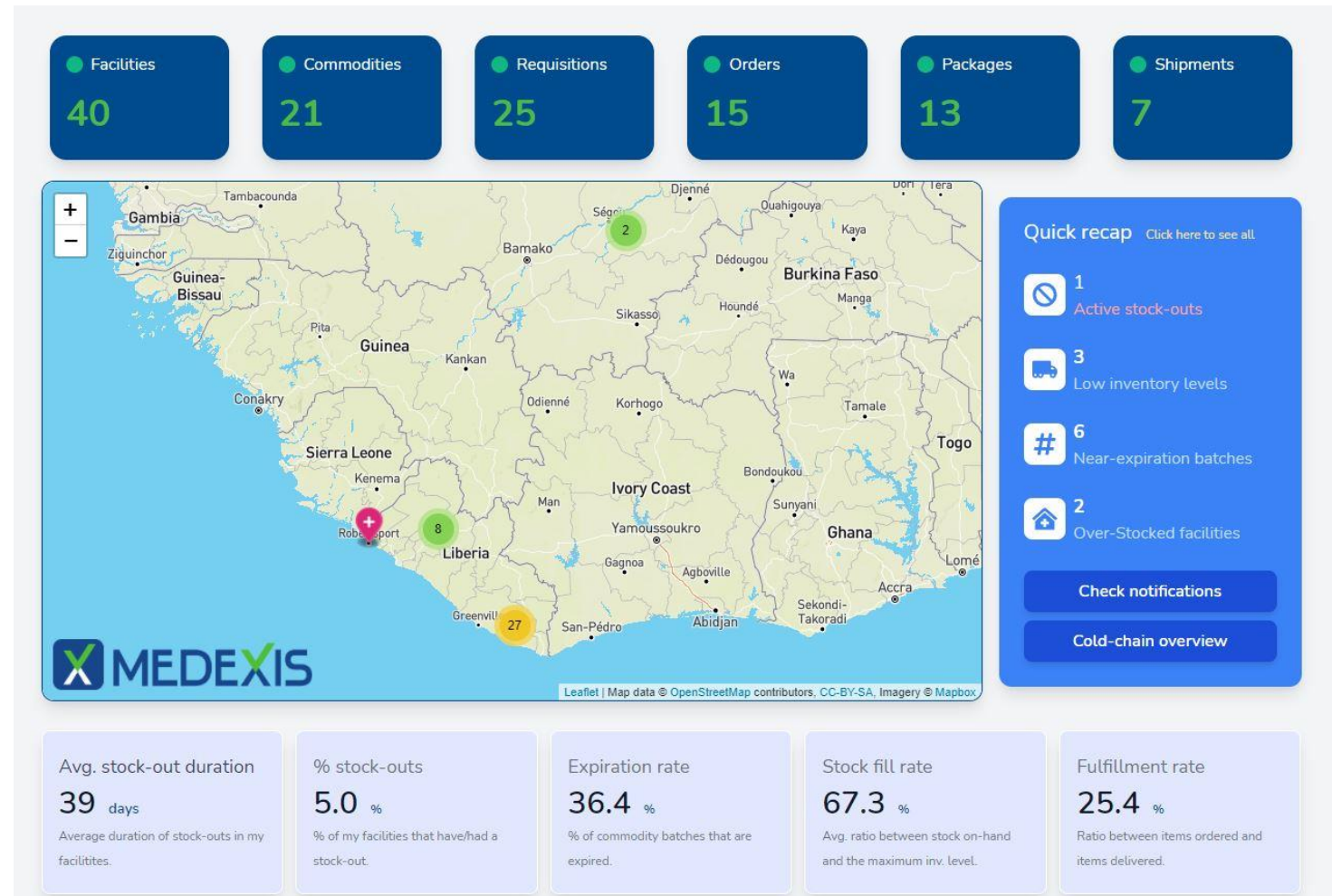


Forecasting and demand planning

- + Predictive logic for forecasting inventory and procurement planning
- + Interactive dashboard
- + Oversight over the entire supply pipeline
- + Optimal performance of the supply chain

Lot management

- + FIFO, FEFO
- + Full management and traceability of batches and expiry dates
- + Picking by FEFO and if needed by FIFO



i+ Medexis: Features (cont.)



Intelligent Inventory Management

- + Program & donor stock tracking
- + Unserviceable stock (quarantine)
- + Level of care & inventory settings
- + Warehouse & bin-locations
- + Stock rationing & stock-out history reporting

The screenshot displays the Medexis web application interface. At the top, there is a navigation bar with the Medexis logo and menu items: Dashboard, My data, Data Entry, Reports (highlighted), and Analysis. A search bar is located on the right side of the navigation bar. Below the navigation bar, the main content area is titled "Distribution over the last 12 months". On the right side of this area, there are icons for "Show stock as sub units" (checked) and a filter icon. Below this, there is a "Show 10 rows" button and a search bar. The main data is presented in a table with the following columns: Program, Origin Facility, Destination Facility, Commodity, Requested, Allocated, Packed, and Delivered. The table contains 8 rows of data. At the bottom of the table, there is a pagination control showing "Showing 1 to 8 of 8 entries" and "Previous 1 Next".

Program	Origin Facility	Destination Facility	Commodity	Requested	Allocated	Packed	Delivered
Essential medicines	Central Medical Store	Regional Medical Store - 1	Acetylsalicylic acid 500 mg	523	523	520	320
Essential medicines	Central Medical Store	Regional Medical Store - 2	Paracetamol 500 mg	1542	1348	1135	540
Essential medicines	Central Medical Store	Regional Medical Store - 2	Acetylsalicylic acid 500 mg	1988	1588	1585	800
Essential medicines	Central Medical Store	Regional Medical Store - 1	Paracetamol 500 mg	600	600	600	350
Essential medicines	Central Medical Store	Regional Medical Store - 2	Praziquantel Tablet, 600 mg	75	0	0	0
Essential medicines	Central Medical Store	Regional Medical Store - 2	Medexis	500	0	0	0
Essential medicines	District Hospital - 2	Regional Medical Store - 2	Paracetamol 500 mg	10	10	10	0
Essential medicines	Regional Medical Store - 2	Central Medical Store	Paracetamol 500 mg	1510	1510	0	0

i+ Medexis: Features (cont.)



MEDEXIS Dashboard My data Data Entry Reports Analysis Search

Consumption

Show stock as sub units

Program: Vaccination Facility: Filter by facility Commodity: Filter by commodity

Show 10 rows

Program	Facility	Warehouse	Commodity	Stock on-hand	Last 7 days	Last 30 days	Last 180 days
Vaccination	Central Medical Store	General	COVID19 vaccine	33983	1200	3559	16017
Vaccination	Central Medical Store	Dispensary	COVID19 vaccine	4928	0	0	72
Vaccination	Central Medical Store	Dispensary	Diphtheria vaccine	4999	0	0	1

Showing 1 to 3 of 3 entries

YTD: Current year consumption
MSAU: Months of supply available and usable

Real-Time Stock Visibility

- + Monitoring of stock status and order status in real time
- + 'Near stock-outs' and 'near-expiries'

Informed Push or Pull Fulfilment Process

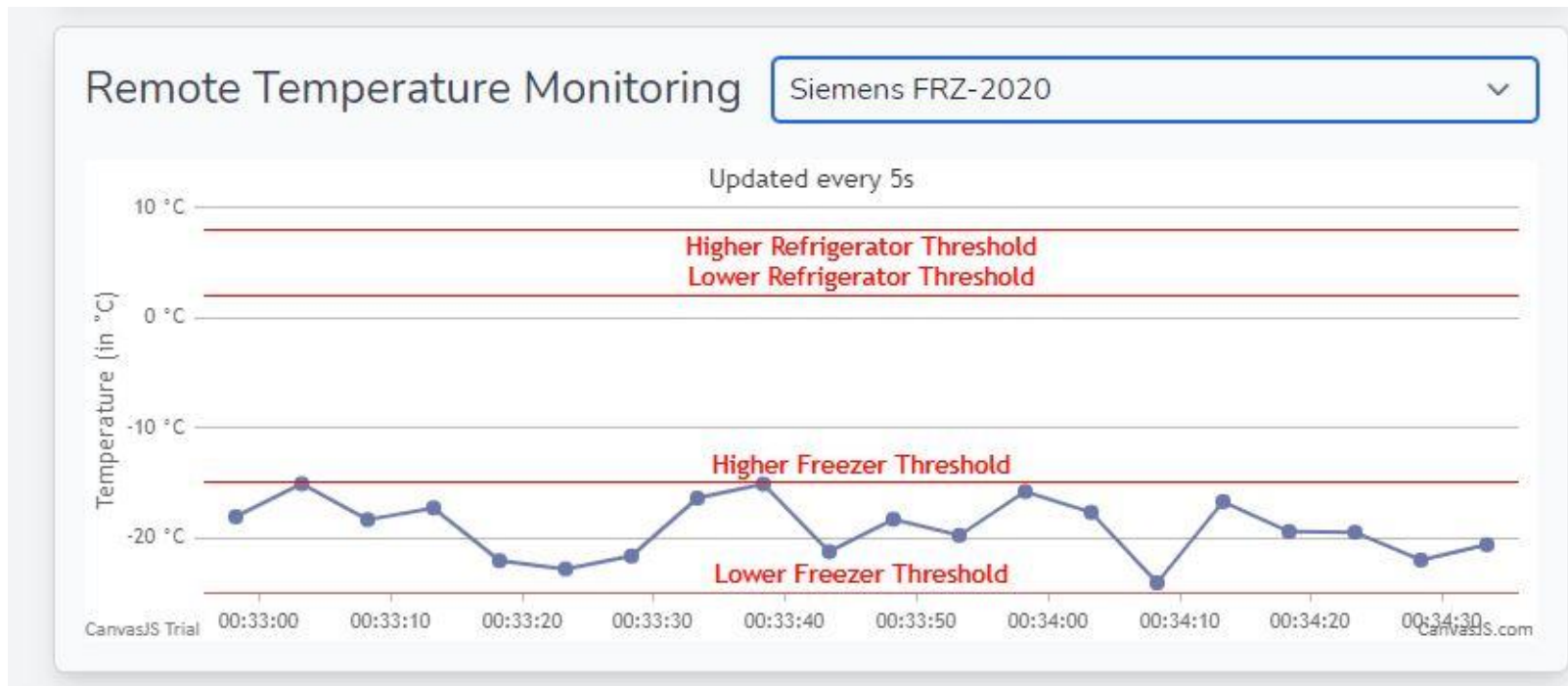
- + Multi-tier and parallel systems (programs) ready
- + Seamless inventory fulfilment
- + Informed push and pull model
- + Stock requisition and approval
- + Real-time tracking of order status

i+ Medexis: Features (cont.)



Cold Chain Management

- + Cold chain equipment capacity calculations
- + Cold chain product distribution against capacity
- + Cold chain equipment maintenance status
- + Cold chain equipment temperature monitoring
- + Closed vial - wastage



i+ Medexis: Features (cont.)



Transportation Management

- + Coordinates transport by optimally combining consignments

Last Mile Visibility

- + Captures product consumption (by proxy and/or singly dose level)
- + Full visibility of inventory and consumption tracking

Integration with DHIS2

- + Data can be transferred for coverage monitoring

Budget and credit management

- + health facility financial budget management

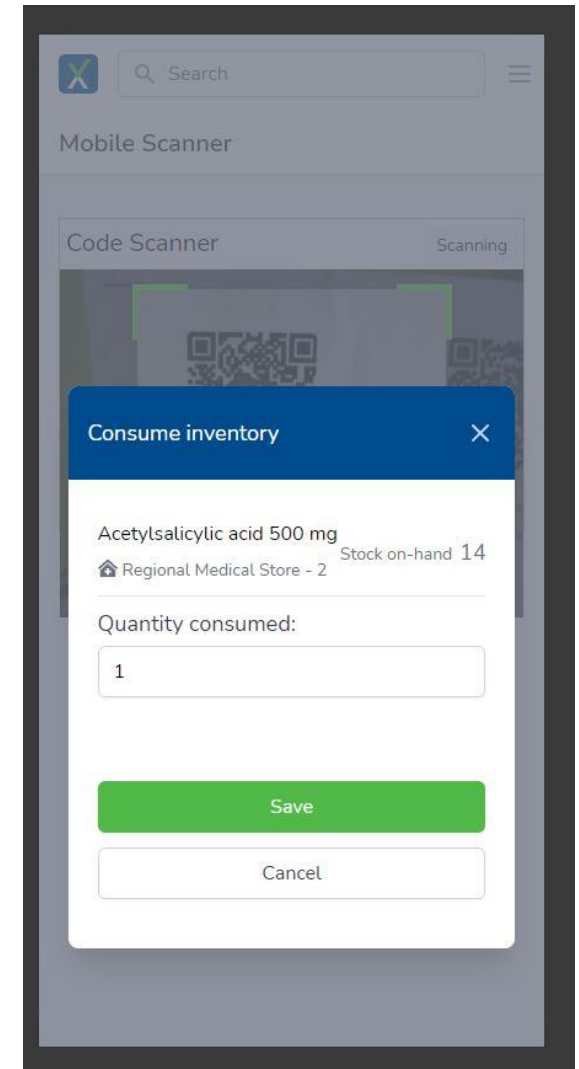
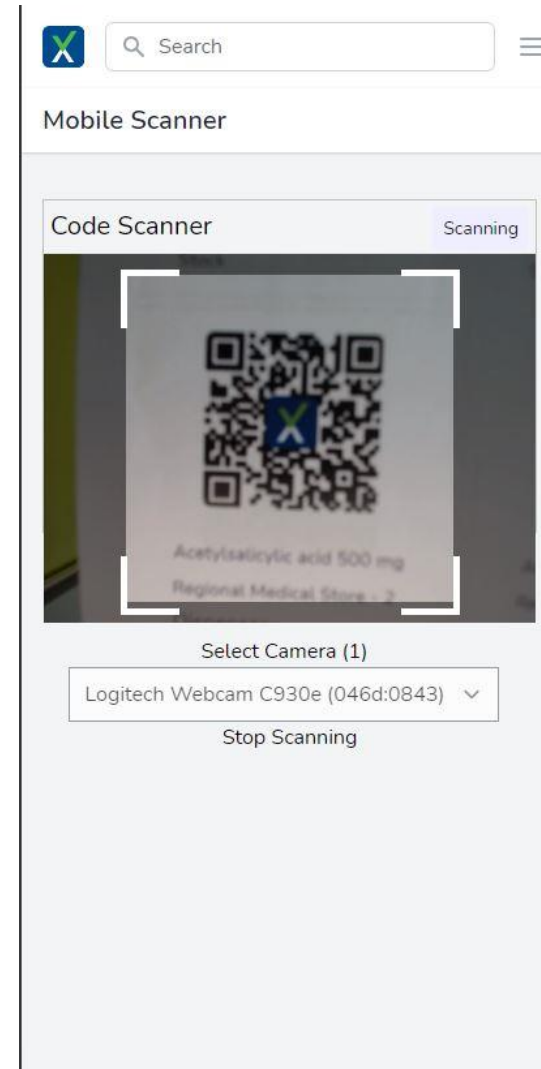
The screenshot displays the Medexis web application interface. At the top, there is a navigation bar with the Medexis logo and menu items: Dashboard, My data, Data Entry, Reports, and Analysis. A search bar is located on the right. Below the navigation bar, the page title is 'Inventories'. The main content area shows a table of inventory items with columns: Program, Facility, Warehouse, Bin / Location, Commodity, Batch/Lot, Expiry date, Stock on-hand, Unusable stock, Allocated in, and Allocated out. The table lists several items, including Albendazole and Abacavir. A 'Show stock as sub units' toggle is visible in the top right of the table area. A 'Budget validation' dialog box is overlaid on the bottom right of the screen, showing a table with columns: FACILITY, REQ. VALUE, and BUDGET AVAILABLE. The dialog shows a request for \$12,660.00 from the 'Regional Medical Store - 2' against a budget of \$199,991.71. There are 'Approve' and 'Cancel' buttons in the dialog.

Program	Facility	Warehouse	Bin / Location	Commodity	Batch/Lot	Expiry date	Stock on-hand	Unusable stock	Allocated in	Allocated out
Essential medicines	Bananssaba - CSCOM	Dispensary	Stock	Albendazole 400 mg comp - DIS	--	--	16200000	0	0	0
Essential medicines	Bananssaba - CSCOM	Dispensary	Stock	Albendazole 200 mg comp - DIS	--	--	3100000	0	0	0
Essential medicines	Bananssaba - CSCOM	Dispensary	Stock	Abacavir (ABC)/Lamivudine (3TC) 600/300 mg comprimé B/30	--	--	1120000	0	0	0
Essential medicines	Bananssaba - CSCOM	Dispensary	Stock	Abacavir (ABC)/Lamivudine (3TC) 120/60 mg comprimé B/30 - DIS	--	--	520000	0	0	0
Essential medicines	Bananssaba - CSCOM	Dispensary	Stock	Acide Folique Comp 5	--	--	370000	0	0	0
Essential medicines	Central Medical Store	General								
Vaccination	Central Medical Store	General								
Vaccination	Central Medical Store	General								
Vaccination	Central Medical Store	General								
Essential medicines	Regional Medical Store - 2	General								

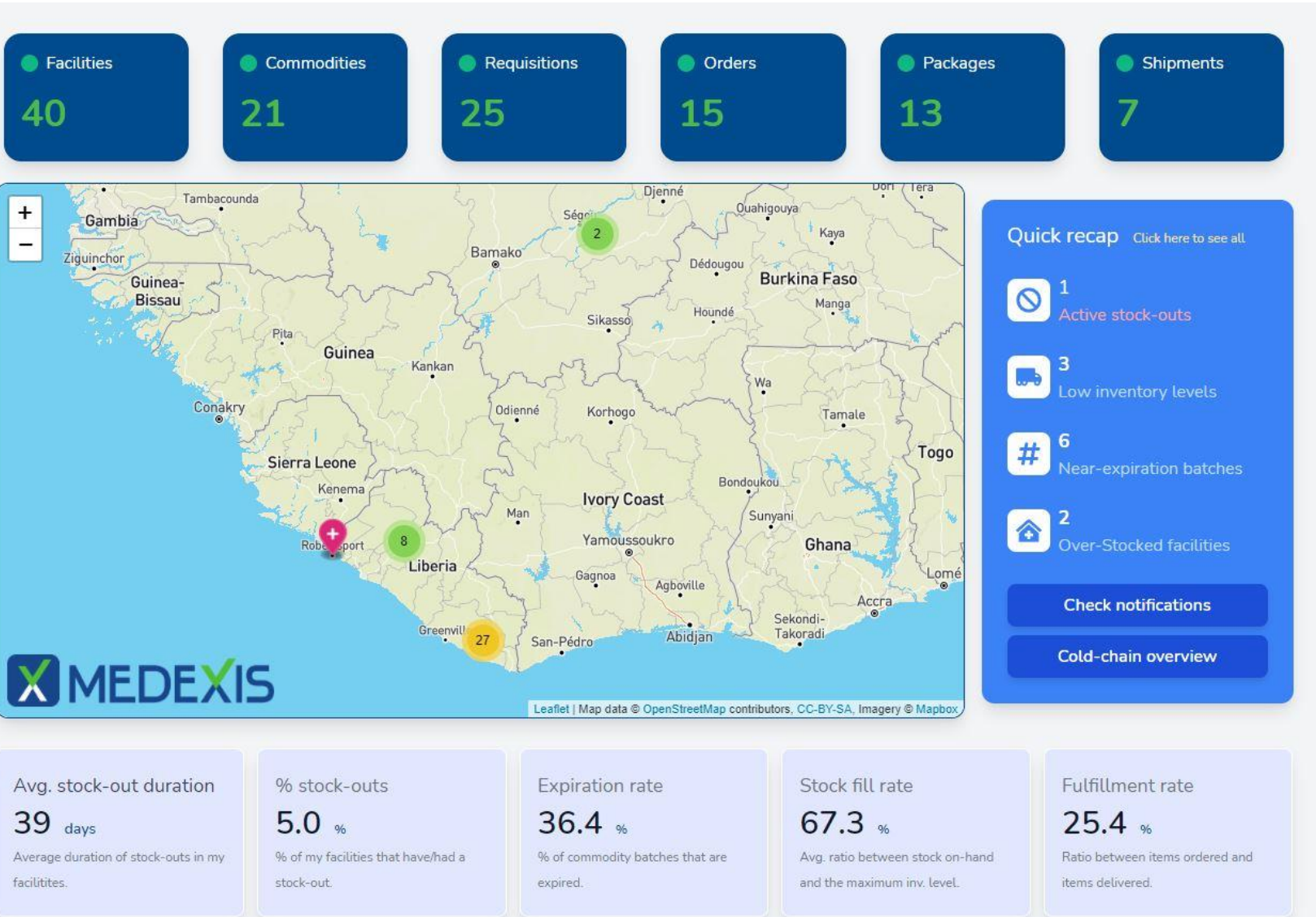
FACILITY	REQ. VALUE	BUDGET AVAILABLE
Regional Medical Store - 2	\$12,660.00	\$199,991.71

i+ Medexis: Features

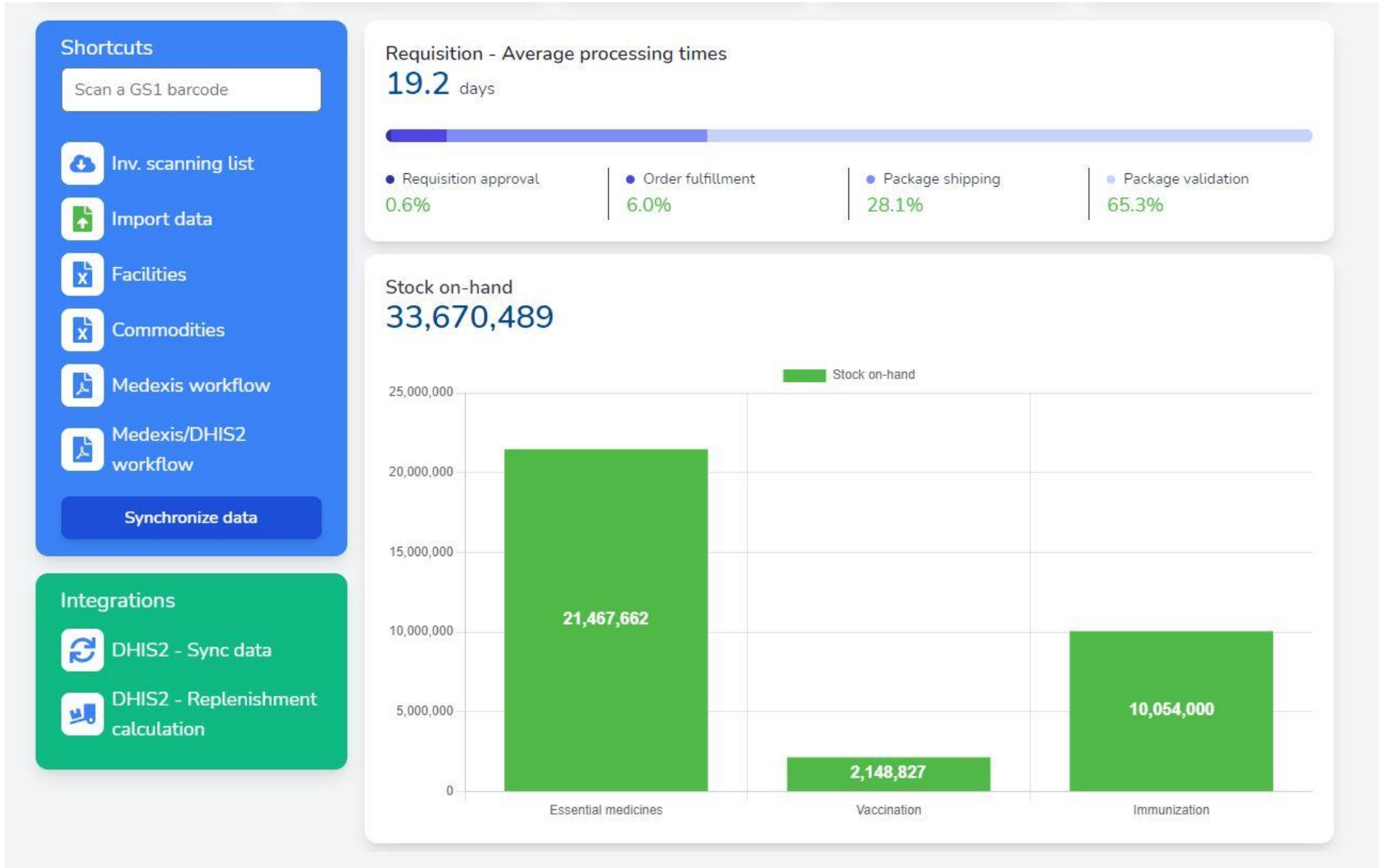
- + Community Health Workers enter data into the DHIS2 app, which is integrated with Medexis
- + System can be used on Android phones
- + System supports barcode scanning
- + Compatible with GS1



i+ Medexis Dashboards



i+ Medexis Dashboards



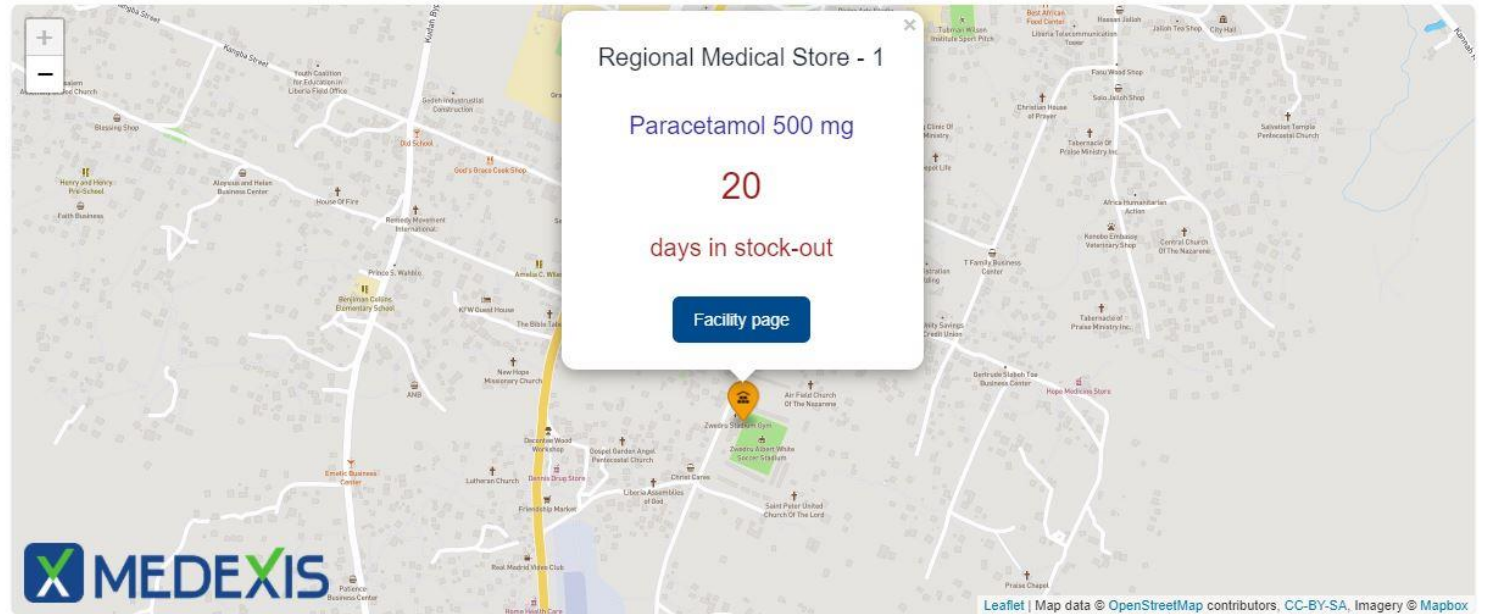
- + Processing time
- + Lead time
- + Stock on hand by program
- + Stock on hand by units and by value

i+ Stock Out Analysis



- + Stock outs by location
- + Stock outs by item
- + Length of stock out

Active stock-outs



Show 10 rows

Search:

Status	Facility	Warehouse	Commodity	Started at	Ended at	Stock-out days
Active	Regional Medical Store - 1	Dispensary	Paracetamol 500 mg	Friday, September 17, 2021	--	20
Closed	Regional Medical Store - 1	General	Acetylsalicylic acid 500 mg	Saturday, September 18, 2021	Friday, September 24, 2021	6
Closed	District Hospital - 2	General	Paracetamol 500 mg	Saturday, March 27, 2021	Monday, August 2, 2021	128
Closed	District Hospital - 2	General	Paracetamol 500 mg	Tuesday, April 27, 2021	Tuesday, April 27, 2021	0

i+ Shipment Monitoring

- + Optimal “milk round” calculation
- + Monitoring of individual shipments

MEDEXIS Dashboard My data Data Entry Reports Analysis Search

Shipments My data

Show 10 rows

Status	Code	Origin	Creation date	Effective date	Courier	Comments	Details	Route
Waiting loading	Shipment_1627774861	Central Medical Store	Sunday, August 1, 2021	Sunday, August 1, 2021	Courier 1	With courier and vehicle. Not in transit	Details	Route
Loaded / In transit	Shipment_1630504845	Central Medical Store	Wednesday, September 1, 2021	Wednesday, September 1, 2021	Courier 1	--	Details	Route
Loaded / In transit	Shipment_1629415483	Central Medical Store	Tuesday, August 24, 2021	Tuesday, August 24, 2021	Courier 2	--	Details	Route
Loaded / In transit	Shipment_1627984139	Central Medical Store	Tuesday, August 3, 2021	Tuesday, August 3, 2021	Courier 1	--	Details	Route
Loaded / In transit	Shipment_1627775037	Central Medical Store	Thursday, August 5, 2021	Thursday, August 5, 2021	Courier 1	All good	Details	Route
Loaded / In transit	Shipment_1627774967	Central Medical Store	Sunday, August 1, 2021	Sunday, August 1, 2021	Courier 1	Courier, Vehicle and In transit	Details	Route
Unknown	Shipment_1627984063	Central Medical Store	Saturday, October 9, 2021	Saturday, October 9, 2021	Courier 3	--	Details	Route

Showing 1 to 7 of 7 entries Previous 1 Next

Suggested route for Shipment_1630504845



Inventory Regulation & Batch Recall



Dashboard

My data

Data Entry

Reports

Analysis



Recalculate inventory levels

Analysis

Select data to recalculate inventory levels

Facility

Regional Medical Store - 2

Start date

09-Apr-2021

End date

09-Oct-2021

Get suggestions

Calculated inventory levels

COMMODITY	STOCK ON-HAND	AMC	STOCK-OUT DAYS	EMERGENCY LEVEL	SUGGESTED	RE-ORDER LEVEL	SUGGESTED	OPTIMAL LEVEL	SUGGESTED	ADJUST
Acetylsalicylic acid 500 mg (ACTSCA500)	796	0.65	0	150	1	400	1	800	2	Adjust
Paracetamol 500 mg (PRCTM500)	50621	1.14	0	300	1	575	2	1000	4	Adjust
Sodium Valproate, 200 mg (SODVALTA1)	10000	0	0	0	No need to adjust	0	No need to adjust	0	No need to adjust	

*Quantities presented in sub-units
*AMC: Average Monthly Consumption



Recall Batch

Are you sure you want to recall this batch this batch will be moved to the unserviceable bin location in the current warehouse and all users associated with the facility will be informed about this batch lot recall This action cannot be undone!

Comments

Optional

Cancel

Recall

i+ Search Functionality



MEDEXIS Dashboard My data Data Entry Reports Analysis Search

Search

Package_1627

- Package: Package_1627642194 PACKAGES
boxes: 2 Friday, July 30, 2021 Regional Medical Store - 1 Validated at destination
- Package: Package_1627665994 PACKAGES
boxes: 1 Friday, July 30, 2021 Regional Medical Store - 2 Validated at destination
- Package: Package_1627642697 Details Put-away commodities PACKAGES
boxes: 2 Friday, July 30, 2021 Regional Medical Store - 2 Partly validated at destination
- Package: Package_1627642447 PACKAGES
boxes: 1 Friday, July 30, 2021 Regional Medical Store - 1 Validated at destination
- Package: Package_1627983194 Print Label PACKAGES
boxes: 2 Tuesday, August 3, 2021 Regional Medical Store - 1 Assigned to shipment
- Package: Package_1627682397 Print Label PACKAGES
boxes: 1 Friday, July 30, 2021 Regional Medical Store - 2 Assigned to shipment
- Package: Package_1627983342 PACKAGES
boxes: 5 Tuesday, August 3, 2021 Regional Medical Store - 2 Validated at destination

Put-away commodities

Select the warehouse and bin/location to store the commodities received:

Warehouse: Dispensary Bin / Location: Stock

COMMODITY	QUANTITY	PRICE (USD)	
Acetylsalicylic acid 500 mg	75	4.3700	

Cancel Save

i+ Medexis: Implementation



Support and Sustainability

- + Local stakeholders engaged from the beginning of implementation
- + Integration with DHIS2 means very little training at the lowest level
- + 3-4 days training for central and large health facility level

Fees

- + Annual license fee with payment per user/facility, or
- + One-time, national perpetual license





IN COUNTRY EXPERIENCE



TechNet-21

i+ Why Medexis for Burundi?



- + Between 2013-2015, after improvements to paper-based LMIS, MOH requested i+solutions to digitize the system
- + Medexis Phase 1: designed in 2018, and implemented in 2019 for reproductive health products
- + Medexis Phase 2: implemented in 2020 for nutrition products
- + Medexis Phase 3: planned for 2021 for vaccines

i+ Country Experience: Burundi



- + Medexis currently running in:
 - + 133 health facilities out of 1,300
 - + 13 districts out of 47
- + Used to track select vaccines, reproductive health and nutrition products
- + App being piloted for “ride share solution” on last mile transportation

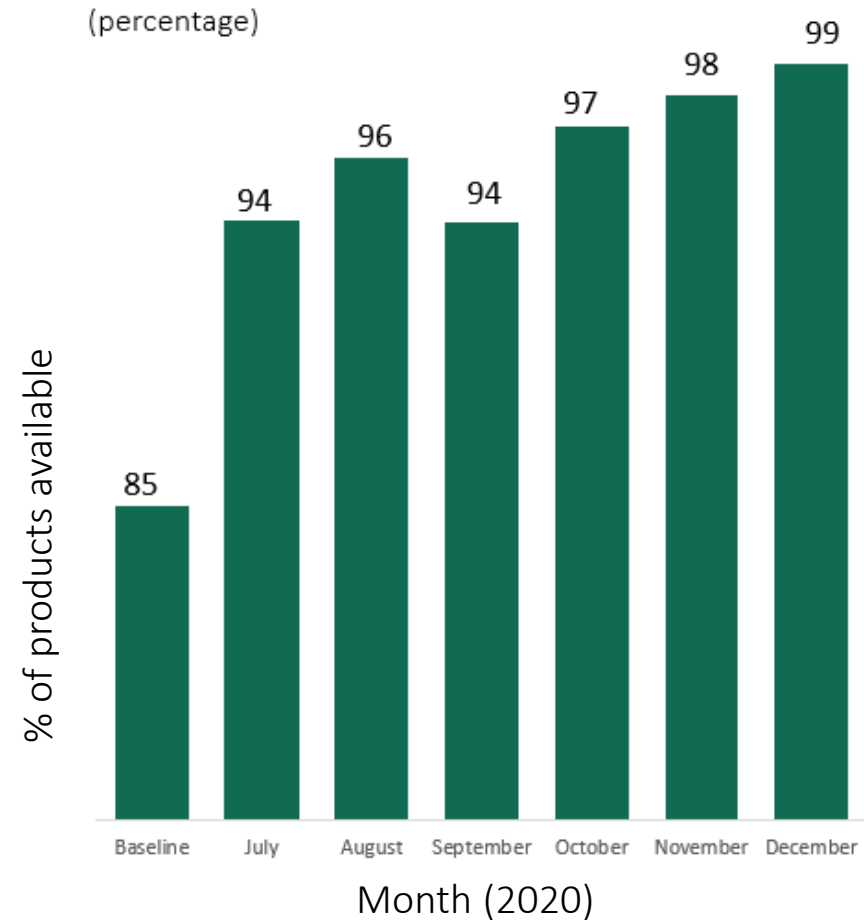
i+ Results: Burundi Pilot



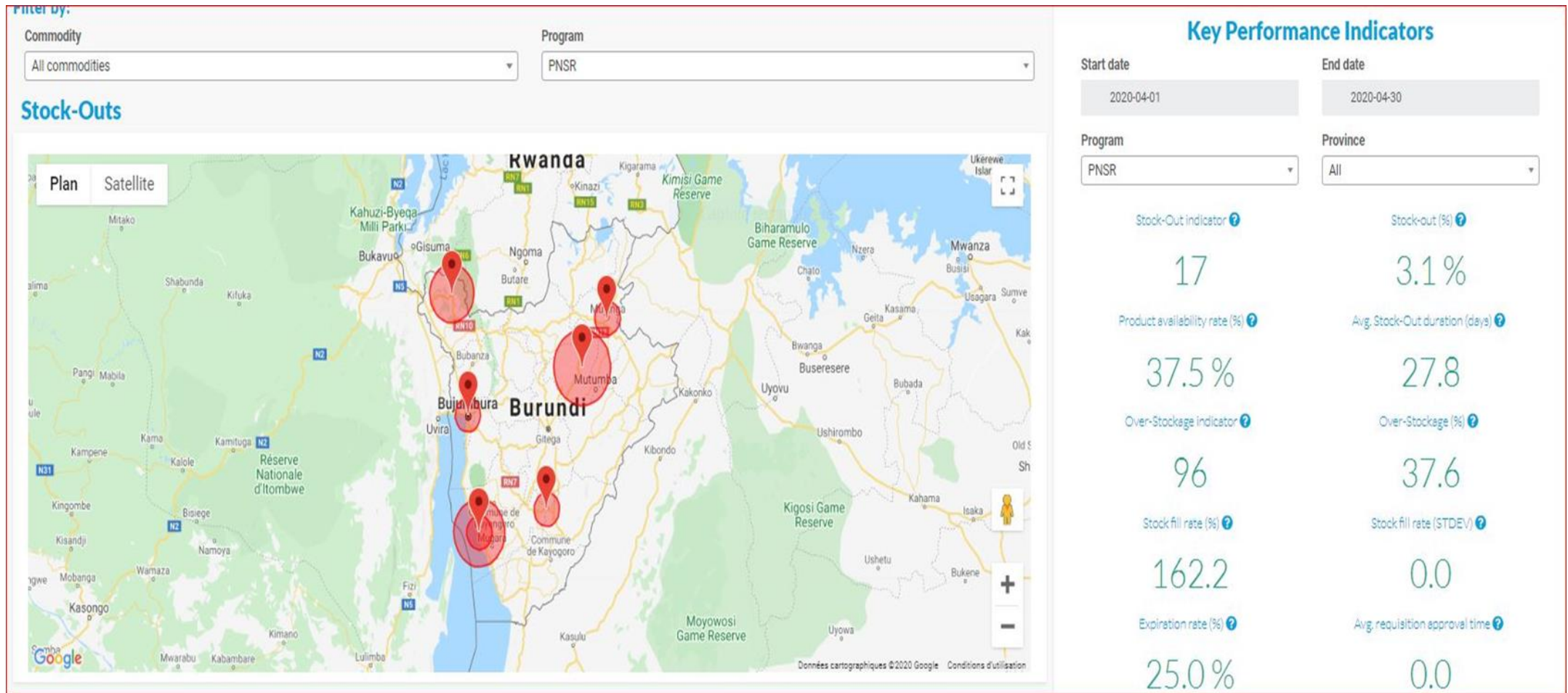
Observations: Product Availability

- + Availability of products has increased while using Medexis
- + Availability rate was measured for 10 products
- + Baseline study conducted in October 2019

Product availability compared to baseline



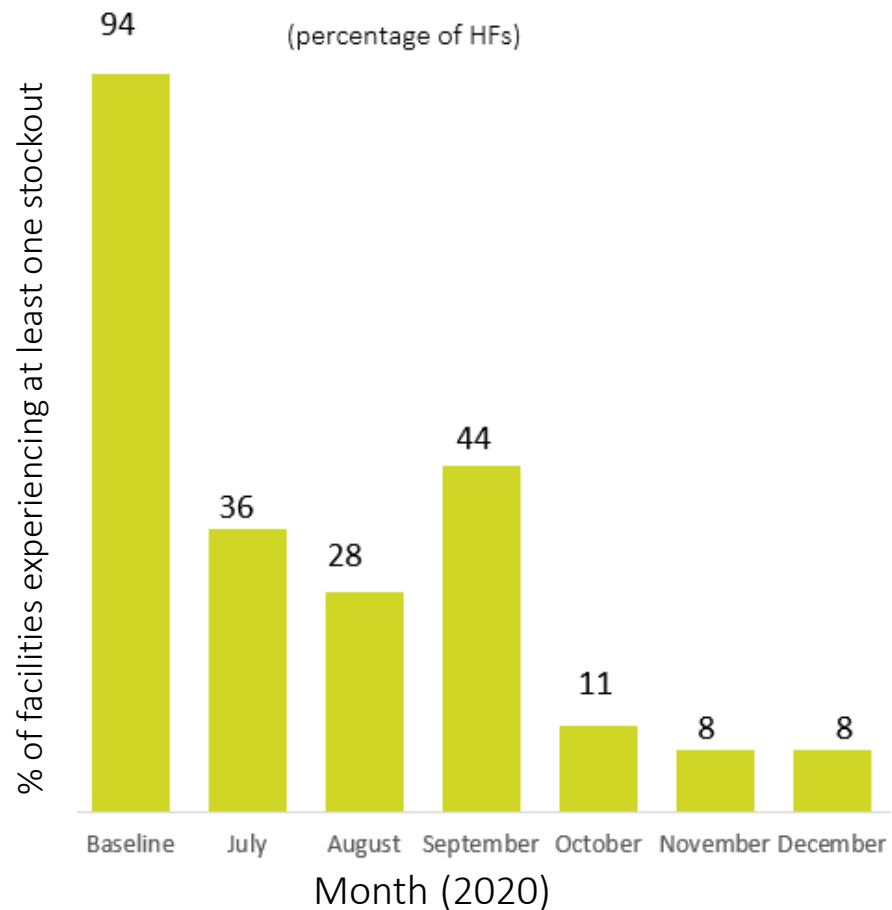
i+ Stock Outs: Burundi



i+ Results: Burundi Pilot



Stockout percentage compared to baseline



Observations

- Stockouts were reduced
- Out of stock rates were reported by health facilities
- Baseline study conducted in October 2019

i+ The Way Forward: Burundi



- + Expansion to additional facilities for vaccines (childhood and COVID-19) and corresponding cold chain equipment, and nutrition products
- + Data exchange with national central medical store
- + Integration with DHIS2 app currently used by Community Health Workers





Thank you!

Contact details

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