

Tanzania leading the way with barcodes on vaccine packaging

Barcodes to Increase Supply Chain Visibility in Tanzania

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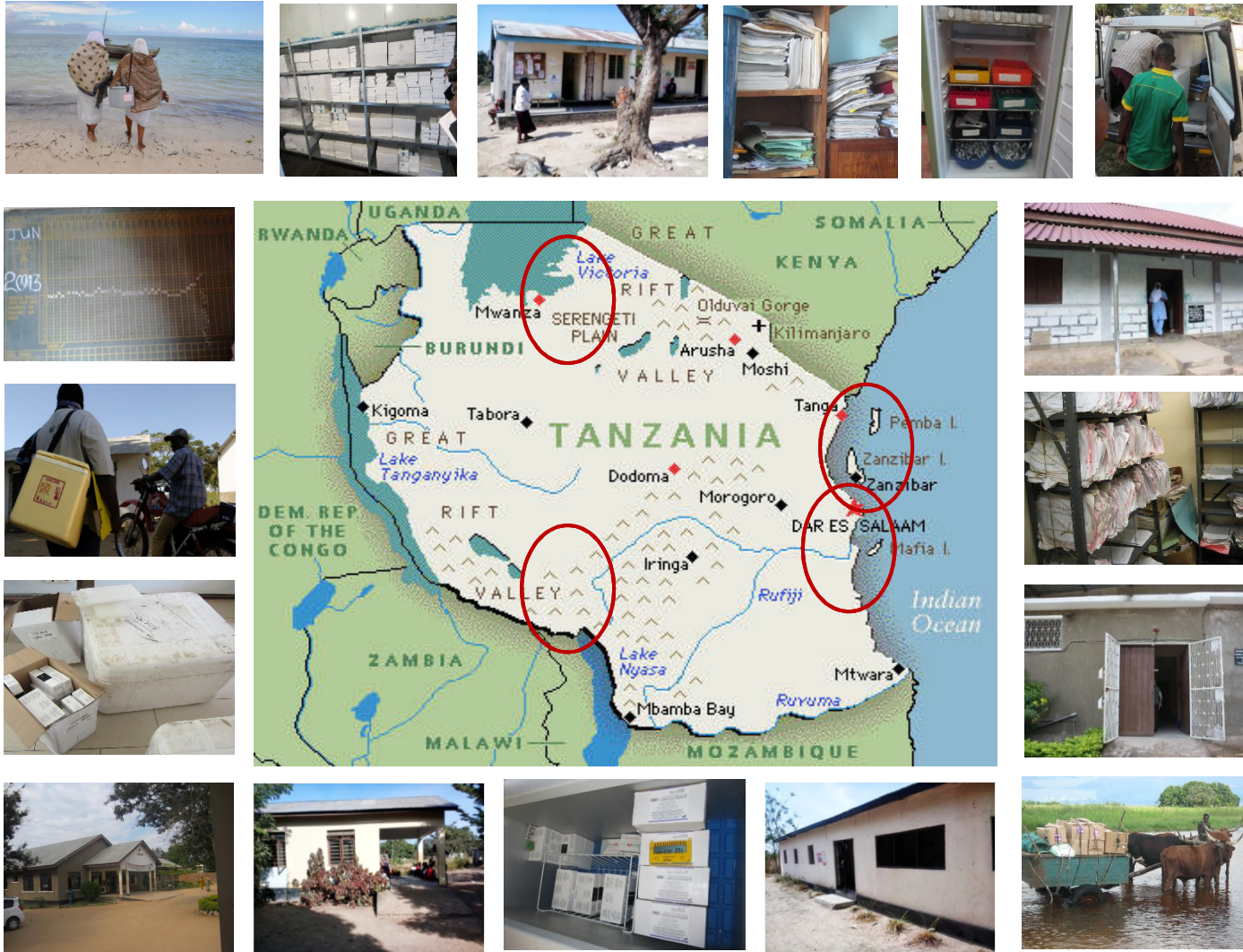


Photo credit

What if...

...in five years, any country, multilateral organization, and donor in the world can track the movement of vaccines from manufacturer to recipient through the use of inexpensive, easily usable, and reliable barcode technology?

Yet today, some challenges remain



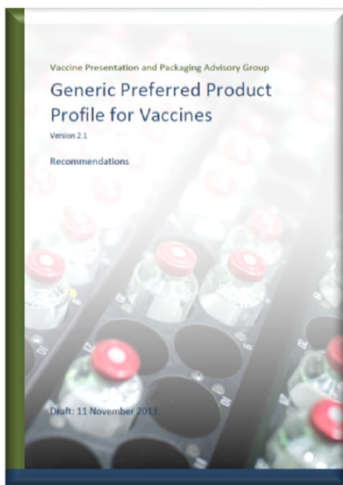
But barriers are being overcome

- Continued investment from PATH's innovation fund to bring global best practices in supply chain to low and middle income countries
- Leadership by Tanzania Ministry of Health and Social Welfare's (MoHSW) efforts to improve the quality of immunization data management
- National deployment of electronic Logistics Management Information System across Tanzania

Catalyst funding and leadership from Gavi, the Vaccine Alliance



- Initiation by Pfizer to include barcodes on vaccine packaging shipped to Tanzania as of February 2014
- Gavi funding to develop and test software prototypes and hardware profiles in Tanzania
- WHO Vaccine Presentation and Packaging Group recommendation to use barcodes conforming to GS1 standards and specifications



Warnings regarding expiry dates

The screenshot shows the 'Send Package' page in the Vaccine Tracking System. The page is titled 'Send Package' with the subtitle 'Prepare and send package to regions'. The user is logged in as 'National Store'. The page displays a table with the following data:

GTIN	Item	Lot	Max :5 boxes Min :2 boxes	Current Stock	Expired X 25 Mar 2014
1234567890074	BCG (Serum)	TZS9282		0	

A red warning box on the right side of the table states: 'This item has expired'. The page also includes a search bar, a sidebar with navigation options (Dashboard, Receive, Dispatch, Inventory, Reports), and a top navigation bar with the Ministry of Health and Social Welfare logo and 'Logged in as National Store'.

The screenshot shows the 'Send Package' page with a warning dialog box displayed. The dialog box contains the following text: 'There is other similar item in stock which will expiry sooner. Do you wish to proceed'. Below the text are two buttons: 'No' (red) and 'Yes' (green). A blue arrow points from the 'Yes' button to the 'Pregnancy' column in the table above, which has the value '82297'. The table data is as follows:

Region	Target Population	Birth	Pregnancy	Surviving Infants	Enter Lot Number
Arusha	1696054	59362	82297	54273	Enter Lot Number

The page also includes a search bar, a sidebar with navigation options, and a top navigation bar with the Ministry of Health and Social Welfare logo and 'National Store'.

Visibility to current inventory against min-max recommendations

Ministry of Health and Social Welfare
Immunization and Vaccine Development (IVD)

National Store

Search...

Send Package Prepare and send package to regions Dashboard > Prepare Package

Region: Arusha

Target Population: 1696054 Birth: 59362 Pregnancy: 82297 Surviving Infants: 54273

Enter Lot Number:

GTIN: 18358572038457 Item: Rota Lot: H5150-12 Max: 14 boxes Min: 5 boxes Current Stock: 0 Expiry Date: 31 May 2016 Boxes:

Voucher Number: 011403016659 Name of store: Arusha Region Date: 17 Jun 2014

GTIN	Manufacture	Description	Lot Number	Expiry	Amount Issued (Doses)	Min Stock	Max Stock	Current Stock	New Stock
1234567889757	Sanofi Pasteur	Measles	9282	2014-08-07	400	1583	4749	10	410

Visibility into all levels of the supply chain

The image displays three screenshots of a web application interface, illustrating the visibility into all levels of the supply chain. Each screenshot shows a different level of the supply chain, from the National Store to the Karatu District.

Top Screenshot: National Store Information

Ministry of Health and Social Welfare (Immunization and Vaccine Development (IVD)) | Logged in as *National Store* | Logout

Search... **My Store** National Store Information

#	Lot Number	Manufacturer	Name	Number Of Doses	Doses Per Box	Boxes	Expiry Date
1	9282	Sanofi Pasteur	Measles	9300	100	93	7 Aug 2014
2	TZS9282	Serum Institute of India	BCG (Serum)	1000	1000	1	25 Mar 2014
3	929CDM	Haffkine	OPV	2000	1000	2	31 Mar 2015

Middle Screenshot: Arusha Region Stock Information

Ministry of Health and Social Welfare (Immunization and Vaccine Development (IVD)) | Logged in as *Arusha Region* | Logout

Search... **Stock** Arusha Region Stock Information

#	Lot Number	Manufacturer	Name	Number Of Doses	Vials	Boxes	Expiry Date
1	9282	Sanofi Pasteur	Measles	10	1	0.1	7 Aug 2014
2	1457	Biological E Limited	TT	2000	100	5	10 Apr 2016

Bottom Screenshot: Karatu District Stock Information

Ministry of Health and Social Welfare (Immunization and Vaccine Development (IVD)) | Logged in as *Karatu District* | Logout

Search... **Stock** Karatu District Stock Information

#	Lot Number	Manufacturer	Name	Number Of Doses	Vials	Boxes	Expiry Date
1	9282	Sanofi Pasteur	Measles	50	5	0.5	7 Aug 2014

Facilitate completion of Vaccine Arrival Report

Ministry of Health and Social Welfare
Immunization and Vaccine Development (IVD)

National Store

Search...

International Shipment

Manage international shipment Dashboard > Roles

On Transit Received

International shipment + add

#	SSCC	Item	Manufacture	GTIN	Lot Number	Expiry	Doses	Action
1	003391707200409298	PCV-13	Pfizer	1234567890388	H5150-12	2 Mar 2015	12000	
2	003391707197909290	BCG	BB-NICPD Ltd.	1234567889771	19751979	22 Feb 2017	7100	
3	0033917							

Dashboard
Receive
Dispatch
Inventory
Reports
Settings

Ministry of Health and Social Welfare
Immunization and Vaccine Development (IVD)

National Store

Search...

Package Arrival

National vaccine arrival Dashboard > vaccine arrival

Scan the SSCC

Scan Package SSCC Number Submit

GTIN	Description	Manufacture	Lot	Expiry	Vials	Boxes	Doses
1234567889757	Measles	Sanofi Pasteur	019L1008B	2016-11-14	650	65	6500

Quantity Okay

Physical Damage

WM Status

Temp monitors Status

Confirm Cancel

Comments and Observations

Dashboard
Receive
Dispatch
Inventory
Reports
Settings

Results

- Evaluated 60 scanner options, selecting representative models for field work
- Overall positive feedback as national, district, and regional immunization officers saw the addition of barcodes to the vaccine management process as very positive.
- Challenge scanning in low light with crowded conditions, and small size of barcode



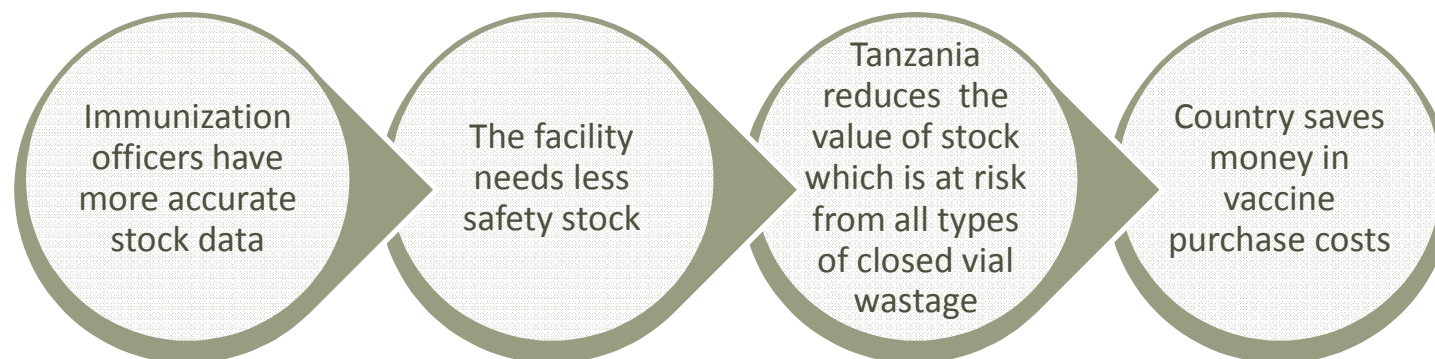
“The system will improve my work by reducing time used to count the stock during receiving or dispatching of vaccines.”

“Would reduce the emergency trips which is usually caused by inadequate vaccine record keeping”

“The improvement of quality of data could be significant when assessing movement of stock (time) from higher levels to low levels.”

Next Steps

- Incorporate barcode functionality into national systems
- Perform independent evaluation to measure impact
 - Closed vial vaccine waste
 - Emergency trips made to remedy stock issues
 - Accuracy of stock data
 - Reduce time spent by staff on distribution and inventory management



Thank you

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Global Background Leading to eLMIS

