

# **Uganda – Lessons Learned from Improving Vaccine Management Using EVM Approach**

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William Musubire  
Vaccine Store Management Officer  
Uganda

# Presentation outline

Country context

Integrated Management as a way forward

How it works in Uganda?

The EVM assessment and progress with key notes

Benefits of integration

# Country Context

**Republic of Uganda** is located in sub-Saharan Africa along the equator and covers an area of 241,550 km<sup>2</sup>



## Country statistics

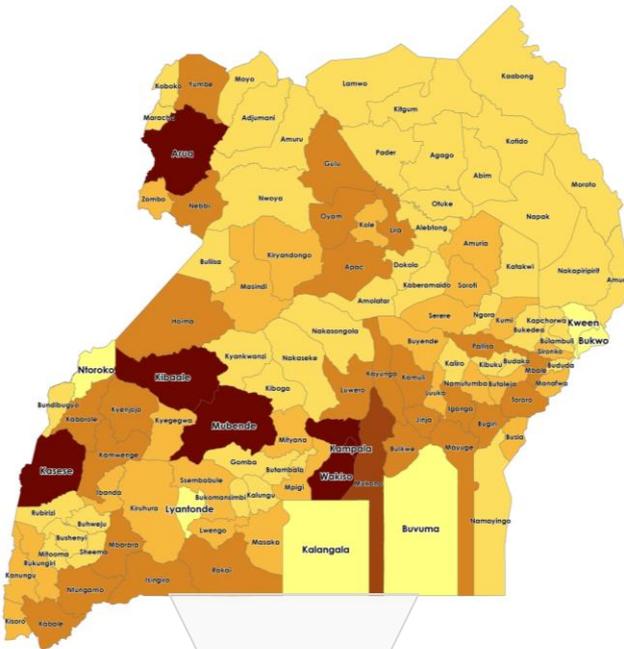
<b>Total population (2014) [1]</b>	34,856,813
% Population under 15 (2012)	48.54
% Population over 60 (2012)	3.72
Life expectancy at birth (2012)	57
Neonatal mortality rate per 1000 live births (2012)	23
<b>Under-5 mortality rate per 1000 live births (2012)</b>	69
Maternal mortality ratio per 100 000 live births(2010)	310
<b>% Births attended by skilled health workers (2011)</b>	<b>58</b>
Density of physicians per 1000 population (2005)	0.117
Density of nurses and midwives per 1000 population (2005)	1.306
Total expenditure on health as % of GDP (2011)	9.5
<b>Government expenditure on health as % of total government expenditure (2011)</b>	<b>10.8</b>
Adult (15+) literacy rate (2010)	73.2
Gross National Income per capita US\$ ( 2013 ) [2]	440
GDP per capita \$ ( 2010 ) [2]	1,028

Source: *Global Health Observatory April 2014*

<http://apps.who.int/gho/data/node.cco>

[1] *Uganda National Population and Housing census 2014*

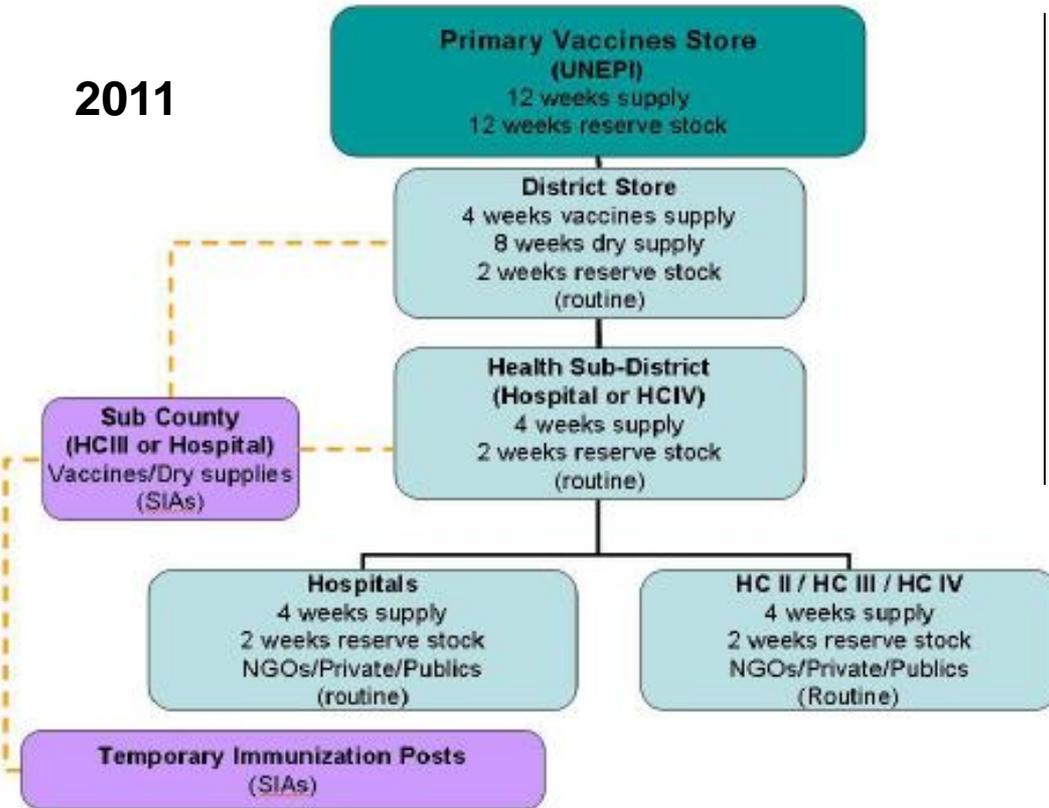
[2] *GAVI Full Country Evaluation: Annual Progress Report 2013*



# Context of Immunization Supply Chain Management

## ISCM in 2011 versus 2014

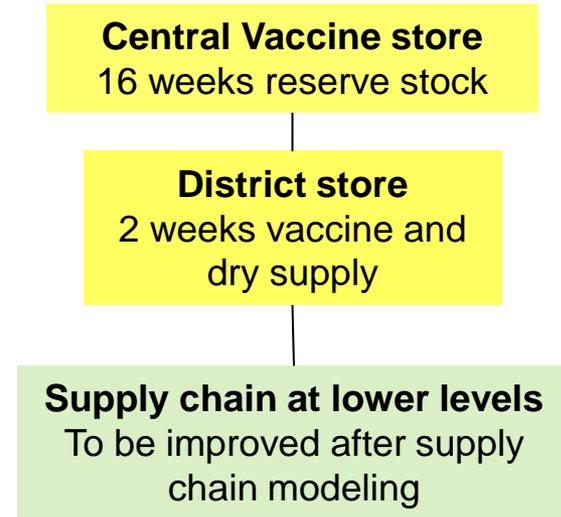
2011



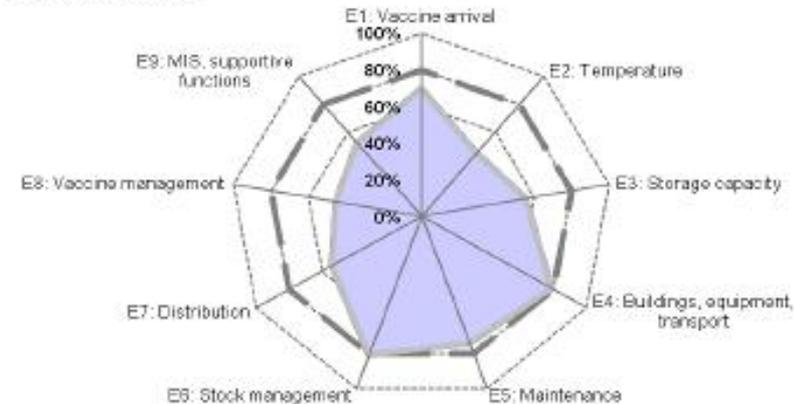
### Key context

Following persistent decline in immunization indicators < 80% DPT3 in 2011 and Low score during 2011 EVMA assessment specifically 54% E7\_Distribution and 45% E8\_Vaccine management.

Starting 2014



Criteria Scores



# Integrated Management as a way forward!

In 2012, the vaccine logistics function was transferred to the government pharmaceutical warehouse and medical logistics; National Medical Stores – NMS

**Expected benefits from this integration were;**

- a. Use the vast warehousing and distribution expertise of NMS to improve vaccines delivery lead time.
- b. Use the already existing NMS refrigerated trucks and other fleet to distribute vaccine supplies
- c. Use NMS logistics expertise and synergies to lower vaccine storage and distribution costs.
- d. Ensuring sustainability of in-country vaccines delivery system

**Above all having strong team work, dedication and supportive management**

# How it works

## UNEPI

- Policy formulation
- Setting standards
- Supervision
- Training
- Monitoring & evaluation

## NMS

- Storage & Distribution



## With Partner Support

- UNICEF
- WHO
- CHAI
- PATH



**Improved  
country  
vaccine  
logistics  
management**

**Collaborative vaccine forecasting**

### **Phase One (2012)**

1. NMS procures vaccines and related supplies
2. Storage of vaccines at NVS
3. Distribution from NVS to DVS

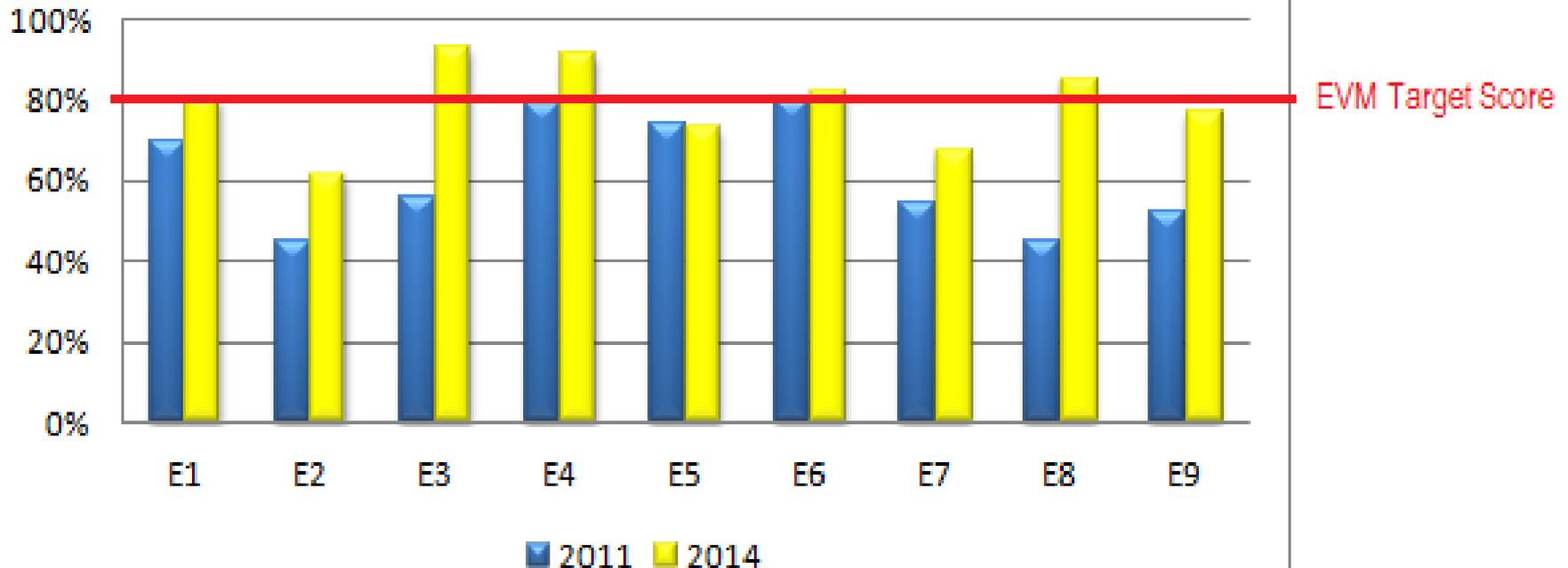
### **Phase Two (starting 2014)**

- a. Last mile delivery up to health facility level
- b. Maintenance of cold chain equipment at DVS

# Measuring progress through the EVM assessment

- NVS showed significant improvement in all the 9 criteria including five meeting the 80% standards set for countries to achieve under the EVM initiatives

## Comparison of NVS Criteria Scores 2011 Vs 2014



# Storage and transport capacity improvement

## Storage specifics

- DVS and SP storage mainly LPG absorption fridges
- Storage capacity affected by frequent breakdown and delayed supplied of LPG from the centre
- Improved Dry storage at NVS

## What has been introduced

- Fully refrigerated trucks move vaccines from NVS to DVS (with monitored temperature conditions)
- Improved storage practices and systems at the NVS

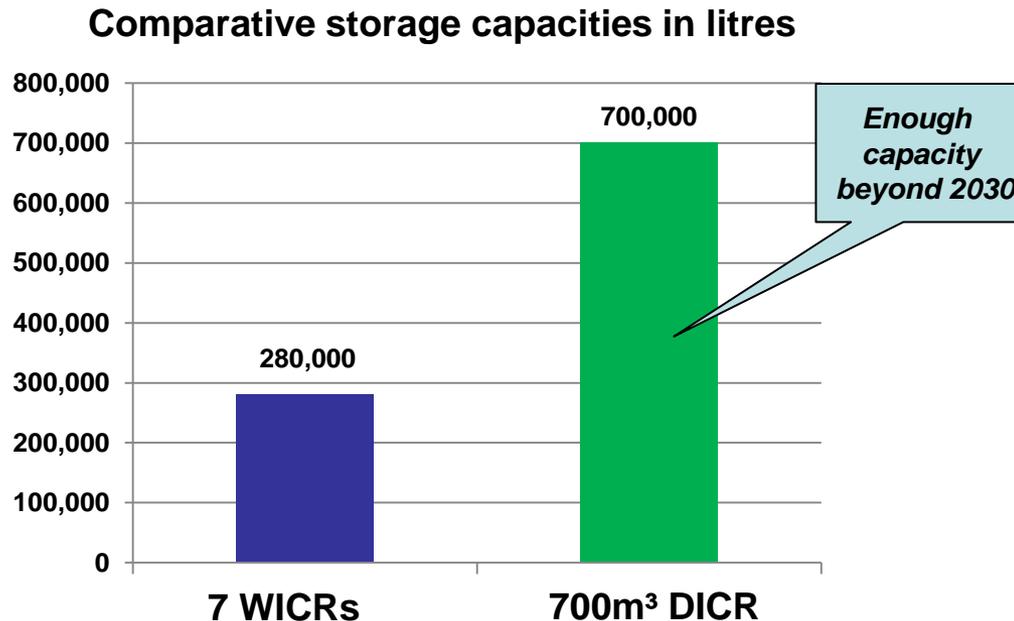
## Planned Strategic improvements

- a. Next 5 years, replace 70% of LPG with Solar DD fridges (sustainability)
- b. Build capacity: installation and maintenance of Solar DD
- c. With increased rural electrification: Turn EG fridge to main power grid



# Long term vision!

- Cold storage expansion has been gradual over last 10 years (GAVI applications)
- 7 WICRs approved for all new vaccine introductions till 2018. (*still not enough*)
- Shift from multiple WICRs to single DICR ( 700 m<sup>3</sup>)



DICR option will offer an additional **420,000 litres** versus 280,000 litres from seven WICRs

## Benefits

- Less time spent on repeated planning to increase storage capacity
- More time focused on improving operations and vaccine management

## Technical support needed

Layout design of DICR to maximise available space

# Stock Management

## Major EVMA findings

- Facilities ordering based on consumption
- Stock out of data tools (VIMCB) still a challenge
- Wastage calculations not done
- VVM changes not recorded

## Key learnings

- a. Regular stock count to update inventory records
- b. Keeping all relevant stock records (*performance reporting, root cause analysis and corrective action*)
- a. Need to have regular exchange of stock information between national and district vaccine stores

**Technical support needed:**  
SMT, DVD MT and IRP tools working in silos; *How can we integrate all these tools to relay data to the centre?*

# Maintenance management

## EVMA Findings

- Reactive maintenance (Breakdowns)
- No planned preventive maintenance
- Maintenance records lacking
- No maintenance SOPs (new equipment)
- Updating the Cold Chain Inventory started

## Critical Corrective Action

- Develop a planned preventive maintenance program



## Key learnings

- a. Use maintenance record trends to identify skills gap (both user and technician)
- b. Regular update of CCI
- c. Review maintenance records to guide future selection of PQS equipment.
- d. Regular reporting on status of equipment maintenance.  
*(at country EPI technical meetings)*

## Technical support needed:

- Developing systems for planned Preventive Maintenance
- Developing SOPs (SDD systems)

# Mgt Information System & Supportive functions

## Major EVMA findings

Wastage calculations not done

Frequent stock out of data tools at DVS and SP

## Critical constraints in LMIS

- Logistics data is managed in silos at all levels
- Heavily paper based (analysis constraint)
- No country snapshot visibility of key indicators.

## Ongoing

Updating supportive supervision check-list to add EVMA criteria checks



## Technical support needed:

- Linking all available tools to a central EPI depository  
(with possibility of data access via cloud)
- Centralized report generator for key EPI indicators
- Training and roll out of current versions of DVD MT, DHS, SMT

# Distribution Management

- **EVMA findings**
- Use of vaccine carrier however conditioning of ice pack **not properly done** .
- Fully refrigerated trucks (2°- 8°C) distribute vaccines from NVS to DVS.
- Monitored temperature conditions during distribution (Log tags and freeze tags)
- Good contingency plan for NVS .. Refrigerated Trucks used as the option.

## Key learnings

- a. Irregular and non standardised last mile distribution (LMD) of vaccines.
- b. Delayed supply to facilities results in:
  - Reduced ordering from NVS due to limited DVS storage capacity
  - Risk of stock out of vaccines at service point
- c. Distribution performance indicators hard to get at this supply level



## Technical support needed:

- Supply chain modelling to determine best vaccines LMD method to SP.
- New technologies that prevent freezing during transportation (vaccine carrier)
- Possibility of Policy shift from **conditioned ice packs to cool packs** (WHO)

# Vaccine management procedures

## Major EVMA findings

- Good understanding and use of VVM at all levels
- MDVP appropriately used
- Knowledge & use of Shake Test procedure still a challenge at DVS and HF level
- Vaccine wastage not tracked

## Key learning's

- a. Lack of wastage data plus lack of corrective measures causing reduced stock availability at facility (*i.e faster depletion of stock*)
- b. Need for strengthening wastage monitoring through supportive supervision (*include wastage monitoring on supervision checklist* ).
- c. Start regular updates on all EVMA criteria during monthly EPI technical meetings

## Technical support needed:

Continued support during planning and implementing of in-country trainings

# Benefits of Integration

UNEPI and NMS work with partners UNICEF, WHO, CHAI and PATH under the **Vaccines Management Committee**

- **Forecasting**
- **Stock reviews**
- **Policy formulation (Logistics)**
- **Monitoring vaccine utilisation and wastage**

**A forum for collaborative approach to solving EPI logistics issues**

## **Benefits**

- a. Improved monthly distribution to districts (vaccines and LPG)
- b. Easier consultations and quick transfer of technical information
- c. Improved immunisation coverage ( DPT3 <80% in 2011 and >95% in 2014)
- d. Improved storage and stock data management at central level
- e. Faster and reliable reporting from central and district level. (improved communication)
- f. Improved 2014 EVMA scores at NVS level
- g. NMS providing maintenance support at DVS level
- h. Collaborative training of DCCAs in vaccine logistics management



Working together to make the improvement

# Thank You

