Immunisation Supply Chain Strategies

2014 Vaccine Manufacturer Consultation
Copenhagen, 9 October 2014
Session Topics

• Why do immunisation supply chains matter?

• GAVI Alliance immunisation supply chain strategy

• UNICEF supply chain strengthening with governments

• Current activities in Zambia, Nigeria, DRC

• ViVa visibility for vaccines

• Discussion
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Immunisation supply chain risk will increase due to higher volumes, doses and vaccine cost.

Growing volume (cm³) to vaccinate per child¹

- 2010: 70 cm³
- 2020: 280 cm³

Increasing number of doses²

- 2010: ~4x
- 2020: ~6x

Introduction of more expensive vaccines³

- 2010: $0.8
- 2020: $4.1

Increase in stock keeping units per year for GAVI vaccines⁴

- 2010: ~5x
- 2020: ~2x

Note: All figures relate to GAVI-funded vaccines

1. UNICEF Supply 2012 Financial report, WHO data for Pneumo and Rota vaccines, and HPV (only for girls);
2. 2010: GAVI Shipment Data; 2020: GAVI SDF Forecast; Including volume for GAVI future graduated countries;
3. Comparison based on 2013 Price; 2020 Vaccines include: Rota, Pneumo; HPV; 2010' vaccines include: YF, Measles, DPT, OPV (UNICEF SD);
4. GAVI Background SDF Information; 2010*: estimates based on 2009 data; 2020: estimates based on 2013 forecast
## Vaccine introduction status and tentative plan for Eastern & Southern Africa region: 2014-2018

<table>
<thead>
<tr>
<th>Country</th>
<th>Penta</th>
<th>Pneumo</th>
<th>Rota</th>
<th>MSD</th>
<th>MR/MMR</th>
<th>HepB birth</th>
<th>HPV</th>
<th>IPV</th>
<th>YF</th>
<th>MenA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Somalia</td>
<td>2013</td>
<td>2016</td>
<td>2018</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2015</td>
</tr>
<tr>
<td>South Sudan</td>
<td>2014</td>
<td>2016</td>
<td>2018</td>
<td>2018</td>
<td></td>
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<td></td>
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<tr>
<td>Swaziland</td>
<td>2010</td>
<td>2008</td>
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**Updated date:** Aug 2014

**Tentative year of vaccine introduction number of introduction plan 2014-2018 Total**

**Total:** 95
On average country immunisation supply chains do not meet WHO standards today

% of countries that reach 80% target on relevant supply chain WHO standards

- Not reaching standard
- Reaching standard

<table>
<thead>
<tr>
<th>Category</th>
<th>Not reaching standard</th>
<th>Reaching standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-shipment &amp; vaccine arrival</td>
<td>20%</td>
<td>80%</td>
</tr>
<tr>
<td>Temperature monitoring</td>
<td>24%</td>
<td>77%</td>
</tr>
<tr>
<td>Storage capacity</td>
<td>38%</td>
<td>62%</td>
</tr>
<tr>
<td>Buildings and equipment</td>
<td>28%</td>
<td>73%</td>
</tr>
<tr>
<td>Maintenance &amp; vaccination control</td>
<td>16%</td>
<td>85%</td>
</tr>
<tr>
<td>Stock management</td>
<td>19%</td>
<td>81%</td>
</tr>
<tr>
<td>Distribution</td>
<td>17%</td>
<td>83%</td>
</tr>
<tr>
<td>Vaccine management</td>
<td>30%</td>
<td>70%</td>
</tr>
<tr>
<td>Information systems</td>
<td>37%</td>
<td>63%</td>
</tr>
</tbody>
</table>

1. EVM (Effective Vaccine Management) Assessments – Average score of Principal, Sub-National, Local District and Service Point Level; Source: EVM assessment for 57 GAVI countries, WHO
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The strategy was developed in a collaborative process with Alliance partners

**Review of strategy in eight Steering Committee workshops**

- Baseline analysis drawing on discussion with 25 country level experts
- Surveyed >25 EPI managers
- Presentations at regional EPI managers meetings
- Direct consultations

**Countries**

**Consultations with PPC and board members**

**Private sector / other partners**

- Consulted on strategy with ~35 private sector and other partners
- Presentation at World Vaccine Congress

**Global health community**

- 67 members actively involved through working groups
- Presentation at workshops and conferences
The task of moving vaccines and immunisation products to beneficiaries involves many challenges:

Evidence points to issues in seven areas:

- Limitations in supply chain system design
- Insufficient and misallocated human resources
- Ineffective use of data for management
- Weak distribution systems
- Inadequate budget and distribution systems
- Deficient cold chain equipment
- Increasing volume and value
The resulting strategy framework builds on a number of critical priorities and initiatives.

**Vision 2020**
Immunisation supply chains provide potent vaccines efficiently to all.

**Objectives**
1. Maintain vaccine potency
2. Use resources efficiently
- Ensure availability of right vaccines and supplies

**Change**
Alliance-wide theory of change

**Priorities and Initiatives**
- People & Practices
- Cold Chain Equipment
- Data for Management
- Distribution & Transport

**System Design & Optimisation**

**Implementation mechanisms**
- Policy changes and guidance
- In-country change process
- Roles & responsibilities
- Funding mechanisms
- Technical assistance
- Implementation roadmap
- Budget

1. Currently EVM
Source: GAVI Alliance Task Force
Managing change in countries will build upon existing mechanisms

1. Country change team
   - Country-led team to manage implementation; supply chain manager is key participant

2. Country supply chain plan
   - Improvement plan based on assessments and tools

3. Grant application (HSS/NVI)
   - Increased support for applications. Improved guidelines to strengthen link with improvement plans

4. IRC and High level panel review
   - Right supply chain expertise on IRC and high level panel

5. Implementation of improvement plan

6. Monitoring & evaluation

Support & Funding

- CSOs
- Partners
- Donors
- Private sector

Partners aligned to promote and support implementation

Supply chain management dashboard to support monitoring
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Support government initiatives with short term targeted support

In such cases the goal is to work closely with UNICEF country offices and governments to strengthen and optimize key segments of supply chains for targeted products to reduce costs, stock-outs, wastage, improve performance –

- and help achieve results in Results Areas:
  1 (Health), 2 HIV/AIDS), 3 (WASH), 4 (Nutrition), 5 (Education)
Support government initiatives to achieve long term results

Funding & Policies

Investments & Infrastructure

Systems & Data

People & Practices

Sustainable National Supply Chains

DEFINITION OF NEED
Budgeting & Planning
Procurement
Delivery & Clearance
Inspection
Warehousing, Distribution, & Reorder
Utilization by End User
Monitoring & Evaluation
What does success look like in 2017?

Increased number of countries implementing national supply chain systems strengthening/capacity development strategies, led by government and aligned with national strategic health plans

**Strong networks** created with increased collaboration, sharing and co-ordination in supply chain activities at global, regional and country level

> 20 Government supply chains strengthened and optimized for targeted products

**Global Learning Centre** is recognized as a platform for supply chain resources and learning

Increased use of supply chain data to support decision making, from determination of need through to delivery to the last mile
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Implementing a National Supply Chain Strategy in Zambia

- National Supply Chain Strategy developed by MoH and partners and endorsed by Minister of Health; aligned with the National Strategic Health Plan
- Govt and partners are implementing supply chain strengthening initiatives that support the national strategy under the 8 strategic pillars:
# LMIS: Microsoft Dynamics Navision warehouse module in Nigeria

## Context

Currently warehouse management at national level in Nigeria does not provide real time, accurate data.

The high volume of incoming and outgoing stock necessitates the need for an integrated, robust LMIS system for all levels of warehouse management in Nigeria.

## Scope

The deployment of Microsoft Dynamics Navision 2013 will be limited to:

- 1 Central Store
- 6 Zonal Stores
- 37 State Stores (36 states and FCT)

## Objectives

- Increase vaccine supply chain visibility and improve stock management and communication between the supply chain tiers.
- Transfer the ownership to the government after installation, training, etc to ensure sustainable use and maintenance of the system.

## Warehouse Module Structure

The system includes the modules:

- Vaccine Requisitions
- Vaccine Issuance
- Stock Movement
- Stock Location Transfers
- Stock Level Management
- Stock Expiry Date Tracking
- Audit & Inspection
Decentralisation of international vaccine shipments to reduce bottlenecks

Problems observed today:

- High frequency of international shipments to the capital airports
- Large cold room capacity required

Potential solutions:

- Support the decentralization of international shipments and destination points to provincial international airports
- Contribute to analyse the benefits of a decentralised distribution network
- Contribute to capacity development of human resources at multiple levels

Data: UNICEF Supply Division 2013
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ViVa is a stock monitoring projection and early warning / advocacy tool
ViVa enables identification and communication of potential upcoming vaccine supply constraints.
ViVa evaluation of pilot phase: success criteria and result of feedback survey

### Criteria of success

<table>
<thead>
<tr>
<th></th>
<th>Visual Aspect: Is the graphics acceptable?</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Usability: Is the tool user friendly?</td>
</tr>
<tr>
<td>3</td>
<td>Frequency of use as monitoring tool: How frequently was the tool used as monitoring tool?</td>
</tr>
<tr>
<td>4</td>
<td>Frequency of use as advocacy tool: How frequently was the tool used as advocacy tool?</td>
</tr>
<tr>
<td>5</td>
<td>Utility of the tool as monitoring tool: How useful was the tool as monitoring tool?</td>
</tr>
<tr>
<td>6</td>
<td>Utility of the tool as advocacy tool: How useful was the tool as advocacy tool?</td>
</tr>
<tr>
<td>7</td>
<td>Stock level information requirement update: How difficult it is to provide the information required?</td>
</tr>
<tr>
<td>8</td>
<td>Frequency of stock level update requirement: Is the frequency adequate?</td>
</tr>
</tbody>
</table>

### Feedback survey result / Comments

<table>
<thead>
<tr>
<th>Score</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>84% Very appropriate – 5% Extremely appropriate</td>
</tr>
<tr>
<td>3.9</td>
<td>68% Very easy – 11% Extremely appropriate</td>
</tr>
<tr>
<td>4.2</td>
<td>68% Very useful – 26% Extremely useful</td>
</tr>
<tr>
<td>4.3</td>
<td>53% Very useful - 37% Extremely useful</td>
</tr>
</tbody>
</table>

Frequency not assessed in the feedback survey; but slides extracted from ViVa used during monthly CCIA meetings in DRC and Niger.

Not assessed in the feedback survey; but weekly stock level were provided at 85%.
The Supply Chain Ends Here
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