Cold chain equipment—Future direction under the supply chain strategy framework

Cold chain industry consultation

Copenhagen, Denmark, 2 October 2013
Outline

- Introduction
- Strategy Framework
- Options for cold chain strengthening
GAVI Alliance Supply Chain strategy timeline

- **Q4 2012**: Taskforce established
- **Q1 2013**: Board discussion of supply chain
- **Q2 2013**: Presentations & review of landscape findings
- **Q3 2013**: Cold chain work transferred to taskforce
- **Q4 2013**: Taskforce agrees priority work areas
- **Q1 2014**: Present framework to Board
- **Q2 2014**: Present framework to Programme & Policy Committee
- **Q3 2014**: Update Board
- **Q4 2014**: Strategy development & implementation
Landscape analysis of the end-to-end supply chain

Global Supply Chain

- GAVI board decision to add vaccine
  - GAVI Board
- Vaccine market shaping strategy
  - GAVI
  - Recipient countries
  - Alliance partners
- Application and approvals (for new Vx)
  - Recipient countries
  - IRC
- Demand and supply planning
  - GAVI Secretariat
  - UNICEF, WHO
  - Vaccine manufacturers
- Annual Progress Review (for existing Vx)
  - Recipient Countries
- Fund transfer to UNICEF SD
  - Donors
  - Countries
- Tendering
  - UNICEF
  - PRG
  - Vaccine manufacturers
- Ordering
  - MoH of recipient countries;
  - UNICEF, GAVI
- Delivery to countries
  - Freight forwarders contracted by UNICEF

In-country Supply Chain

- Data
- HC facility/Outreach
  - MoH
- District level
  - MoH
- Sub-national level
  - MoH
- National warehouse
  - MoH
- Customs clearance
  - UNICEF
  - CC agent

1 Supply chain designs differs by countries – Some countries have additional layer (zonal) after regional depots, making it a 5-level SC; Others have fewer levels under a “hub” concept; down to district level, transportation can be delivered by upper level, or collected by lower level
2 Regional, zonal or state level depots or hubs
3 Health office and/or storage
4 Data includes logistics/supply information (eg. how much was received, used, remains on hand) and service information
## The most cited challenges along supply chain

<table>
<thead>
<tr>
<th>Global</th>
<th>Applications and Approval</th>
<th>Interface</th>
<th>Delivery to countries</th>
<th>Storage &amp; distribution</th>
<th>In-country</th>
<th>Availability at point of vaccination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market shaping, program design and long-term planning</td>
<td>1. Data discrepancy between country data and global data</td>
<td>3. Short-term planning &amp; procurement</td>
<td>4. Long lead-times and delays in getting shipment clearance</td>
<td>5.1 Multiple levels of supply chain holding inventories cause inefficiencies</td>
<td>6.1 Limited transparency on the frequency, size and location of demand</td>
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<tr>
<td>1.1 Data discrepancy between country data and global data</td>
<td>2.1 Long lead times for approval due to lengthy application and approval processes</td>
<td>3.1 Poor quality of short-term country forecasts</td>
<td>4.2 Lack of transparency into shipment data</td>
<td>5.2 Insufficient or non-functional cold chain equipment</td>
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<td>1.2 Multiple formal and informal signals of demand received by manufacturers with limited opportunity to reconcile/discuss</td>
<td>2.2 Timing of approval, e.g. approval rate for 2013 support:</td>
<td>3.2 Frequent short term updates of the demand forecast communicated to manufacturers</td>
<td>5.3 Suboptimal cold chain equipment selection</td>
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<tr>
<td>1.3 SCM considerations not sufficiently taken into account in product specifications and standards</td>
<td>• 81% in Nov/Dec</td>
<td>3.3 Last minute sharing of procurement plan and changes with manufacturers</td>
<td>5.4 Poor equipment repair and maintenance</td>
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<td>1.4 Lack of total cost perspective on portfolio and SC decision</td>
<td>• 5% in Feb/Mar</td>
<td>3.4 Missed return on investment from money on “Procurement Accounts”</td>
<td>5.5 Lack of well-documented SC processes and often not well implemented</td>
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<td>• 13% reported later</td>
<td>3.5 Delay of fund transfer from countries for co-funding of vaccines</td>
<td>5.6 Limited expertise to operate and oversee SC, and to implement SC processes</td>
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<td></td>
<td>3.6 Countries do not always receive products according to their preferred specification</td>
<td>5.7 Ad-hoc delivery schedule leading to unreliable distribution</td>
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<td></td>
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<td>3.7 Vx intro decisions and scheduling are not robust enough and change frequently</td>
<td>5.8 Insufficient vehicles and other transportation resources</td>
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### Data for Decision Making

7.1 Lack of functioning information systems providing timely and accurate data

7.2 Data not routinely used, analyzed, or incorporated into decision-making

### Performance Management

8.1 Limited implementation of improvements following EVM

8.2 Lack of end-to-end performance management and standardized performance management metrics
**Mission**
To save children’s lives and protect people’s health by increasing access to immunisation in poor countries.

**Strategic Goal 1**
Accelerate the uptake and use of underused and new vaccines by strengthening country decision-making and introduction.

**Strategic Goal 2**
Contribute to strengthening the capacity of integrated health systems to deliver immunisation.

**Objectives**
The objectives of the supply chain strategy are to maximise:
- Vaccine **availability** at the point of administration
- **Efficiency** of vaccine supply chains
- The **viability** of vaccines at the point of administration

**Cross-cutting Priorities**
- People & Practice
- Data for management
- **Cold chain equipment**
Many supply chain activities are underway

People & Practice:
- AMP’s Logivac center for West Africa in Benin
- Supply chain redesign in Benin
- Multiple orgs work with MOH in DRC and Nigeria on SC improvement
- WHO improving EVM IP implementation
- People that Deliver raising profile of health logisticians

Data for management:
- PATH’s Better Immunization Data (BID) in Africa
- CHAI LMIS work in Ethiopia, Tanzania, Nigeria
- PATH’s Barcode feasibility in Tanzania
- Village Reach OpenLMIS and work in Mozambique
- USAID/Deliver LMIS in Pakistan
- WHO’s work to improve LMIS tools

Cold chain equipment:
- CIDA funding for equipment procurement planned for Ethiopia, Mozambique, Nigeria, Tanzania.
- Haiti transitioning to solar equipment.
- JICA funding for Zambia ILR procurement.
- Private sector partnership working on CCE maintenance in Ghana.
- UNICEF work to expand use of continuous temperature monitors.
- Supply chain improvements for Nigeria, DRC, India through tailored country approach.
There are a number of opportunities for intervention within cold chain strengthening

- Increase guidance and support to countries for cold chain management and procurement
- Use target product profiles to encourage high performance, low maintenance, technologies
- Produce strategic demand forecast for equipment
- Smooth procurement and delivery across countries and over time
- Build on maintenance and repair networks and centres of excellence to support investments
- Improve feedback from countries to help manufacturers, consumers
- Develop cold chain funding options?
The current cold chain equipment funding and procurement structure is fragmented

**Current capex spending (100% = ~$40M per year)**

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<tr>
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<th>~40%</th>
<th>~20%</th>
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<tbody>
<tr>
<td>Donor–funded (flows via countries)</td>
<td>~10%</td>
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<tr>
<td>Donor-funded (funds to UNICEF)</td>
<td>~25%</td>
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<tr>
<td>Donor-funded</td>
<td>~25%</td>
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<tr>
<td>Government-funded</td>
<td>~5%</td>
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Donor-funded (funds to UNICEF)                              Donor-fledged  
~25%                                                          ~25%  
Government-funded                                             
~15%                                                          

**UNICEF-procured**      **Donor-procured**¹      **Government-procured**

1 Includes UNOPS who typically act as procurement agent for other donors

SOURCE: Country MoH Interviews, UNICEF procurement data, Donor interviews; team analysis
A significant funding increase over current levels will be required

Projected funding gap through 2020, USD

- Anticipated spend on cold chain equipment: ~500
- Expenditure required to address cold chain gaps: ~500
- If market successfully shaped: ~500

SOURCE: Country MoH Interviews, UNICEF procurement data, Donor interviews; team analysis