Immunization Supply Chain Challenges in Fragile State

UNICEF – Somalia
12th May 2015
Presenter: Douglas Mukwaya
The vaccine Supply chain system in Somalia

Districts and MCH (health facilities):
- Most of the MCHs in CSZ are run by partners
- In NWZ & NEZ MCHs are run by government institutions
- OPV for the campaign only issued

**Two Key activities**

**Planning done by UNICEF:**
- Estimating adequate quantities of vaccines & safe injection equipment
- Defining adequate capacities for storage & transport

**Monitoring done by WHO:**
- Collecting consistent data
- Processing relevant indicators
- Taking action

Shipment & arrival procedures:
- International packaging & shipping
- VAR procedures
Cold Chain Hubs - SCZ

Regions covered

1. Mogadishu
   - Banadir
   - Lower Shabelle
   - Middle Shabelle

2. Dusamareb
   - Galgaduud
   - Hiraan (8. Beletwein)
   - South-Mudug

3. Elberde
   - Bakool

4. Baidoa
   - Bay

5. Belethawa
   - Gedo

6. Kismayo
   - Eastern part of Lower Juba (i.e. Kismayo Town)

7. Afmadow
   - Western and southern parts of Lower Juba (i.e. Afmadow and Badade districts)

*Access often limited to main towns and surrounding villages*
Vaccine Supply Management – Model A

Direct supply to all 7 hubs from Nairobi by charter flights
Vaccine Supply Management – Model B

Vaccine Supply Routes
1. Nairobi -> Mogadishu
2. Mogadishu -> cold chain hubs

Except
No regular flights -> Afmadow
Replenishment done using missions or UNHAS charters from available locations (Mogadishu, Nairobi, Baidoa)

By Air
In-Bound
Commercial (regular)
UNHAS (charter)
Internal
Commercial (regular)
UNHAS (regular)
UN mission
By Road
# Vaccine Supply Chain Management Transition

## BEGINNING OF OUTBREAK vs. IMPROVED VACCINE SUPPLY CHAIN MGMT

<table>
<thead>
<tr>
<th>Availability &amp; Flexibility</th>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Mogadishu hub</strong></td>
<td></td>
</tr>
<tr>
<td>• 1 month of stock (SIAs; remaining balance used as rolling stock)</td>
<td></td>
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<tr>
<td><strong>Other hubs</strong></td>
<td></td>
</tr>
<tr>
<td>• 1 month of stock (SIAs; remaining balance used as rolling stock)</td>
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</tbody>
</table>

| **Mogadishu hub**         |  |
| • 1-2 months of stock (SIAs and PVP) |  |
| **Other hubs**            |  |
| • 2-3 months of stock (SIAs and PVP) |  |
| • Optimized preparedness  |  |

**Additional cold chain capacity added**

## Cost efficiency

| **Commercial round charter flight from NBO** |  |
| • Appr. USD 80,000 |  |

**Most cost efficient route available used**

1. UN mission (free)
2. Commercial regular (USD 2/kg)
3. UNHAS regular (USD 5/kg)
4. UNHAS charter (cost depends on flight time and volume, <50% of commercial charter)
5. Commercial charter (cost depends on flight time, volume, type of aircraft)

## Safety

| **Physical cold chain assessments not conducted** |  |
|  |  |
|  |  |

**6/8 cold chain hubs assessed for capacity and quality**

• Equipment
• Human resource
• Security
• Infrastructure
Cold Chain Locations and vaccine hubs in Somalia
Vaccine supply in South Central Somalia

**Challenges in delivery**
- Limited safe road access
- Limited availability of regular commercial flights
- Changing security scenario requires dynamic planning

**Changing access scenario**
- Ensure vaccine availability for areas opening up
### What it takes?

- **Staff time** – planning, monitoring, on-going follow-up
- **Collaboration and engagement with**
  - UN agencies (i.e. UNHAS, UNDSS, OCHA, WFP)
  - NGOs, Kenya customs, local transport companies
- **Cost impact**
  - Commercial charter round flight: appr. USD 80,000
  - Present arrangement leading to cost reduction to: USD 10,000-20,000
- **System can be extended to EPI**

### Flight Details

<table>
<thead>
<tr>
<th>Flight Date</th>
<th>Aircraft Type</th>
<th>Number of Units</th>
<th>Weight in Kgs</th>
<th>Volume CBM</th>
<th>From</th>
<th>To</th>
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<td>24</td>
<td>722</td>
<td>3.656</td>
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<td>28</td>
<td>0.118</td>
<td>Nairobi</td>
<td>Baidoa</td>
<td>$12,750.00</td>
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Ongoing challenge: Reaching effective vaccine management standards

- Implementing the EVMA recommendations at the NVS is not as easy as planned due to the fact that this is a contracted facility hence have no direct control over it.

- Lack of skilled technical human resource in relevant supply chain offices especially at the lower levels.

- Planned actives are often not carried out as planned due to numerous reasons.

- Bureaucracy in accessing funds in order to implement activities is still a challenge.
Challenges Faced are: information, resources and security

- Integrated CCE information Management:
  - Missing key data
  - Delay in verification
  - Difficulty in sharing information
  - Accessibility (WHO can but not for UNICEF)

- Monitoring: Old tools to monitor stock levels

- Funding gap – delay in procurement

- Lack of enough HR capacity for installation/repairs

- Late feedback/attention in regards to faulty equipment.

- Security problems in accessing and delivering cold chain equipment especially in SCZ

- Lack of appropriate fuel to run the cold chain which lead to loss of 3 HF last year
SCZ HF which was burnt down due to cold chain related problems
Access Constraints: Security, Weather and Access constraints impair service delivery by increasing lead-times and uncertainty in the supply chain while concurrently increasing operating costs – flights, additional warehousing, higher costs to operate. They must be considered for all movements and plans made accordingly. Typical Constraints include:

1. Variable road access due to security constraints
2. Road Restrictions from Somaliland to Puntland
3. Limited Infrastructure with limited international shipping / airlines with direct calls in Somalia.
4. Monsoon/Rainy Season: Transport should be planned to avoid these periods as much as possible.
The 5 key focused area for 2014-2015

**Logistics Management Information System:**
LMIS establishes data/information flow for real time tracking of supplies and achievements to ensure timely action taking and avoid that invested efforts not being wasted
Leads to informed management & decision

**CCL gap analysis:**
CC Capacity Assessment deals with the physical status of the infrastructure to store and transport the new vaccines under recommended conditions
Leads to CC rehabilitation

**EVM follow-up assessment & improvement:**
EVM Assessment looks at the quality of vaccine management processes to ensure that new expensive vaccines will be handled and used efficiently
Leads to EVM Improvement

**Introduction of temperature monitoring system:**
30 days temperature monitoring system
Central Temperature Monitoring system for cold rooms
Leads to quality and equipment performance
Recommendations for Fragile States

Using IT for real time monitoring

1. Having refrigerators installed with remotely controlled temperature monitoring devices

2. Having vaccine boxes with bar codes or chips that can be scanned as vaccine are loaded and offloaded from the refrigerators (especially solar fridges) – for vaccine stock balances

If this can be done, it will reduce staff risk exposure in fragile state.