The Learning Network for Countries in Transition (LNCT)

- A platform dedicated to supporting countries as they transition away from Gavi support to full domestic financing of their national immunization programs.

- LNCT, pronounced “linked”

- 15 member countries from various regions, in various stages of the Gavi transition process

- Audience is country practitioners and policymakers involved in financing and managing immunization programs in Gavi transitioning countries
Vaccine Forecasting & Budgeting

LNCT Procurement Webinar Series (2 of 3)

2 July 2018

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Miloud Kaddar, Senior Health Economist, Independent Consultant, LNCT Technical Facilitator

John Doe Presenting
Outline

1. Planning for vaccine forecasting and budgeting – processes and steps

2. Forecasting and budgeting – methods and tools

3. Forecasting and budgeting tools and best practices
Why vaccine forecasting and budgeting is critical for immunization program performance

Under-estimation

- Shortages & stock-outs
- Low coverage
- Credibility of services
- Poor budgeting...

Over-estimation

- Poor handling, inefficiencies
- Wastages of resources
- Poor budgeting...
Planning for vaccine forecasting and budgeting: Two planning levels

1. Planning the **actions** needed to reach different EPI objectives: *Most important step!*

2. Forecasting the **resources** needed to implement identified actions
Planning actions needed is an intense thinking process

- **Objective**
  - Situation analysis
  - Problem identification
  - Objective setting

- **Action Plan**
  - Implementation
  - Monitoring
  - Evaluation

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**LNCT**
Learning Network for Countries in Transition

**Gavi**
The Vaccine Alliance
Situation analysis and objective setting: expel of Effective Vaccine Management (EVM)
## Example of Effective Vaccine Management (EVM) Action Plan

**EVM improvement plan**

<table>
<thead>
<tr>
<th>Item no.</th>
<th>EVM level(s)</th>
<th>EVM criterion(s)</th>
<th>Task description</th>
<th>Prior</th>
<th>Interventions</th>
<th>Budget</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Completion indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PR</td>
<td>E1</td>
<td>Organize annual meeting with customs to provide report on vaccine arrivals and updates on plans for next year</td>
<td>Low</td>
<td>Coordination meetings</td>
<td>$1,500</td>
<td>$500</td>
<td>$500</td>
<td>$500</td>
<td>Meeting report</td>
</tr>
<tr>
<td>2</td>
<td>PR</td>
<td>E2</td>
<td>Conduct a controlled temperature monitoring study using WHO protocol to determine the temperature profile of the vaccine supply chain in the country</td>
<td>High</td>
<td>Study</td>
<td>$30,000</td>
<td>$30,000</td>
<td>$0</td>
<td>$0</td>
<td>Study report</td>
</tr>
<tr>
<td>3</td>
<td>PR, LDL, SP</td>
<td>E2, E4</td>
<td>Equip cold-freezer rooms with continuous temperature monitoring devices</td>
<td>High</td>
<td>Procurement and installation of temperature loggers</td>
<td>$30,000</td>
<td>$30,000</td>
<td>$0</td>
<td>$0</td>
<td>Equipment installation report</td>
</tr>
<tr>
<td>4</td>
<td>PR, LDL, SP</td>
<td>E2</td>
<td>Establish temperature reading and plotting during weekends and holidays</td>
<td>High</td>
<td>Supportive supervision</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>Official memo from MCH/EPI</td>
</tr>
<tr>
<td>5</td>
<td>LDL</td>
<td>E2, E4</td>
<td>Equip all lowest distribution level stores with continuous temperature monitoring devices (type 30-days temperature recorders)</td>
<td>High</td>
<td>Procurement and installation of temperature recorders</td>
<td>$1,500</td>
<td>$1,500</td>
<td>$0</td>
<td>$0</td>
<td>Equipment installation report</td>
</tr>
<tr>
<td>6</td>
<td>LDL</td>
<td>E2</td>
<td>Organize a 2-day training session for staff at the lowest distribution level store on the implementation of adequate temperature</td>
<td>High</td>
<td>Training</td>
<td>$6,000</td>
<td>$6,000</td>
<td>$0</td>
<td>$0</td>
<td>Training agenda and report</td>
</tr>
<tr>
<td>7</td>
<td>SP</td>
<td>E2, E4</td>
<td>Equip all service delivery level refrigerators with continuous temperature monitoring devices (type 30-days temperature recorders)</td>
<td>High</td>
<td>Procurement and installation of temperature recorders</td>
<td>$15,000</td>
<td>$7,500</td>
<td>$7,500</td>
<td>$0</td>
<td>Equipment installation report</td>
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<tr>
<td>8</td>
<td>SP</td>
<td>E2</td>
<td>Organize regional training sessions for staff at the service delivery level on the implementation of adequate temperature</td>
<td>High</td>
<td>Training</td>
<td>$30,000</td>
<td>$15,000</td>
<td>$15,000</td>
<td>$0</td>
<td>Training agenda and report</td>
</tr>
<tr>
<td>9</td>
<td>PR, LDL, SP</td>
<td>E2</td>
<td>Revise and implement the temperature monitoring chart to formally include alarm events and remedial actions to be taken</td>
<td>High</td>
<td>Management and coordination</td>
<td>$6,300</td>
<td>$2,100</td>
<td>$2,100</td>
<td>$2,100</td>
<td>Copy of national template at the facilities</td>
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<tr>
<td>10</td>
<td>PR, LDL, SP</td>
<td>E2</td>
<td>Establish a monthly review of temperature records and alarm events during supervisory visits</td>
<td>Medium</td>
<td>Supportive supervision</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>Filled temperature chart</td>
</tr>
<tr>
<td>11</td>
<td>SP</td>
<td>E2, E3</td>
<td>Organize regional training sessions for the staff on what to do in event of emergency, to include different kinds of fire extinguishers</td>
<td>Medium</td>
<td>Training</td>
<td>$30,000</td>
<td>$15,000</td>
<td>$15,000</td>
<td>$0</td>
<td>Training agenda and report</td>
</tr>
<tr>
<td>12</td>
<td>PR</td>
<td>E4</td>
<td>Provide the national vaccine store with telephone and internet connectivity</td>
<td>Medium</td>
<td>Management and coordination</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>Phone number and email address</td>
</tr>
<tr>
<td>13</td>
<td>SP</td>
<td>E4</td>
<td>Provide fire extinguishers for all health centres lacking at least one, and ensure annual maintenance checks for all fire extinguishers</td>
<td>Medium</td>
<td>Procurement and installation of fire extinguishers</td>
<td>$45,000</td>
<td>$15,000</td>
<td>$15,000</td>
<td>$15,000</td>
<td></td>
</tr>
</tbody>
</table>

**Total Budget:** $325,425 | $170,975 | $103,475 | $50,975

**Date:** 22 July 2014
Optimizing demand forecasting: Resources needed

- Material resources:
  - Vaccines & supplies (syringes, safety boxes)
  - Equipment: cold chain, transport, disposal ...
  - Consumable: fuel, electricity, spare parts, etc.

- Human resources:
  - Staff, volunteers, sub-contractors, etc.

- Financial resources
  - Costs of material & human resources
  - Other costs: insurance, etc.
  - Split into investment/replacement & operating costs
Vaccine specifications and their implications for demand projection
Immunization vaccine delivery system

Challenges...

- **Planning:**
  - Estimating adequate quantities of vaccines and safe injection equipment
  - Defining adequate capacities for storage and transport

- **Monitoring:**
  - Collecting consistent data
  - Processing relevant indicators
Optimizing demand forecasting and budgeting: Vaccine characteristics & specification inputs

- Formulation (liquid/lyop, mono/multi components, preserved/unpreserved)
- # doses required per vaccination course
- Administration (oral/injection/nasal)
- Storage conditions (temperature, light)

- Presentation: prefilled, single/multi-dose vials
- Packaging: # pieces, volume (cm³/dose),

- Formulation (liquid/lyop, mono/multi components, preserved/unpreserved)
- # doses required per vaccination course
- Administration (oral/injection/nasal)
- Storage conditions (temperature, light)
Optimizing demand forecasting and budgeting: Outputs from forecasting

- **Amount of supplies needed**
  - vaccines
  - injection equipment

- **Capacities needed**
  - storage (cold and ambient)
  - cooling/freezing packs (transport & vaccination)
  - transportation (shipping containers, vans)
  - vaccination force (sessions, staff)

- **Amount waste generated**
  - empty vials/ampoules
  - used syringes
Forecasting and budgeting – methods and best practices
Optimizing demand forecasting and budgeting: Methods for estimation of vaccine needs

- Target Population
- Previous Consumption
- Immunization sessions size

Consistent method and reliable data are key to ensure accurate forecasting of vaccines needs at all levels.
Estimation of vaccine needs: Target populations method

Formulae for estimating demand

\[ P_{target} \times V_{coverage} \times \text{No. doses} \times F_{wastage} \]

where,

- \( P_{target} \) = Target Population
- \( V_{coverage} \) = Vaccination Coverage
- \( \text{No. doses} \) = Number of doses required per target
- \( F_{wastage} \) = Wastage Factor
Estimation of vaccine needs: Target populations method

- **Target Population** ($P_{target}$)
- Vaccination coverage ($V_{coverage}$)
- No. of doses per target ($No_{doses}$)
- Wastage factor ($F_{wastage}$)

**Routine:**
- Total birth (~1-4% total population)
- Surviving infants (~1-3.5% total population)
- Pregnant women (~2-5% total population)
- Adolescent girls (~2% total population)

**SIAs:**
- <5 years (~20% Nids, MCV campaigns)
- <15 years (~45% MCV campaigns)
- CBAW (~20% MNT campaigns)
- other targets

**Routine:**
- BCG = 1 dose
- MCV = 1-2 doses
- Polio = 3-4 doses
- DTP&comb = 3-4 doses
- Pneumo = 3 doses
- Rotavirus = 2-3 doses

**SIAs:**
- Number of rounds
Estimation of vaccine needs: Target populations method

Vaccination coverage

- Target population \( (P_{\text{target}}) \)
- Vaccination coverage \( (V_{\text{coverage}}) \)
- No. of doses per target \( (\text{No.}_{\text{doses}}) \)
- Wastage factor \( (F_{\text{wastage}}) \)

Coverage should be realistic and based on the national disease control priorities.

**Routine:**

- Should be realistic
- Target for average or higher figures (multiple contacts vaccines).

**SIAs:**

- Set at 100% of the target
- Does not appear explicitly in formulae

Wastage factor

- Target population \( (P_{\text{target}}) \)
- Vaccination coverage \( (V_{\text{coverage}}) \)
- No. of doses per target \( (\text{No.}_{\text{doses}}) \)
- **Wastage factor** \( (F_{\text{wastage}}) \)

\[
F_{\text{wastage}} = \frac{100}{100 - \text{Wastage rate}}
\]

<table>
<thead>
<tr>
<th>Wastage rate</th>
<th>5</th>
<th>20</th>
<th>50</th>
<th>80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wastage factor</td>
<td>1.05</td>
<td>1.25</td>
<td>2.0</td>
<td>5</td>
</tr>
</tbody>
</table>
Estimation of vaccine & injection equipment needs: Target populations method

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Annual Vaccines</strong></td>
<td><strong>Annual doses</strong> = target population $\times$ Vaccination coverage $\times$ No. of doses per target $\times$ wastage factor $\times$ buffer stock</td>
</tr>
<tr>
<td><strong>Buffer Stock</strong></td>
<td>= annual demand $\times$ duration of buffer stock / 12months</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> for multiyear forecasts, buffer should be rolled out and incremented.</td>
</tr>
<tr>
<td><strong>Syringes for Injection</strong></td>
<td>(1) No. of injection syringes = target population $\times$ Vaccination coverage $\times$ No. of injections per target $\times$ wastage factor (1.11)</td>
</tr>
<tr>
<td></td>
<td>(2) No. of injection syringes = No. of vaccine doses</td>
</tr>
<tr>
<td><strong>Syringes for Dilution</strong></td>
<td>No. of dilution syringes = No. of vaccine vials (of reconstituted vaccines)</td>
</tr>
<tr>
<td><strong>Safety Boxes</strong></td>
<td>No. of safety boxes (2.5l) = Total No. of syringes / 70 (content)</td>
</tr>
<tr>
<td></td>
<td>No. of safety boxes (5l) = Total No. of syringes / 100 (content)</td>
</tr>
</tbody>
</table>
Estimation of vaccine needs: Methods for analysis of needs

**Method-1: per injection**
- Likely avoid over estimation of the quantity of syringes needed,
- Minimizes the over-stocking of syringes within the system.

*However,*
- Creates a fear of scarcity of syringes at the beginning,
- More complex implementation of the "bundling" during the first distribution.

**Method-2: per dose**
- Increases the availability of safe injection equipment,
- Simplifies implementation of the "bundling" during the first distribution,

*However,*
- May over-estimate the number of syringes,
- Requires rigorous monitoring to avoid over-stocking syringes on the field.
Estimation of vaccine needs: General observations on forecasting methods

Remarks:

- Planning parameters not always reflect the field reality
- Required efforts for optimisation often neglected during the selection of the planning parameters
- Often overlook the "mathematics" over the "art" of the estimation

However,

- Target population method remains the most suitable method for vaccine forecasts at higher levels (provincial, national, global),
- Especially in absence of reliable data on the implementation of services (new vaccines, reorganization of services, etc.).
EPI-Logistics Forecasting Tool
Toolbox Approach

- Need for tools
  - data requirements - large and diversified
  - Need for evidence based decision making
- There is tool for every job – toolbox vs “Swiss knife”
Purpose of EPI-Logistics Forecasting Tool

- Conduct the estimations of multiyear requirements for receiving, storing and distributing, of vaccines, syringes and safety boxes including logistic operational support

- Carry out scenario analysis permitting managers to review the impact of their planning:
  - with regards to introduction/changing of vaccines
  - conducting operations in support of vaccination strategy

- Contribute to multiyear plan and budget development

- Provide inputs to cMYP for vaccines, supplies, cold chain & supply chain operations
Description and use of Forecasting Tool

- The tool has been developed using Microsoft Excel
- 11 worksheets: data entry, planning, output and data source sheets
- Facilitates decision making in support for the purchase of supplies for the immunization programs
- Supports the planning of the processes and structures required to achieve efficient logistical operations in support of:
  - Warehouse operations (storage, transportation and distribution of supplies)
  - Vaccination operation
Instructions for Use

- **Getting started**
  - Keep original template or download from WHO website: [http://webitpreview.who.int/entity/immunization_delivery/systems_policy/logistics/en/](http://webitpreview.who.int/entity/immunization_delivery/systems_policy/logistics/en/)
  - Save as with new name: Exple: EPI_forecasting_country_year.xls

- **General principles:**
  - "Pop up" instructions appear in cells to guide data entry – **No instruction – no entry!**
  - All sheets protected (no password)
  - **"Copy / paste special – value"** can be use to upload external data
  - Dropdown lists refer to data sources that can be updated
<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>4</td>
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<tr>
<td>5</td>
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<td>7</td>
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<td>9</td>
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<td>12</td>
</tr>
<tr>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td>15</td>
<td>16</td>
</tr>
</tbody>
</table>

### SUMMARY

#### 1.- Input data sheets

- **data**: Plans for Routine Vaccination
- **Sias**: Plans for Supplementary Vaccination
- **Stores**: Planning data for national and intermediate vaccine stores

#### 2.- Results of the planning of vaccination activities (routine and supplementary)

- **routine_rational**: Multi-year forecast of Immunization Supplies & Storage Capacities for Routine at national level
- **sias_rational**: Forecast of Immunization Supplies & Storage Capacities for SIAs
- **routine_interm**: Annual forecast of Immunization Supplies & Storage Capacities for Routine at Intermediate stores
- **sias_interm**: Forecast of Vaccines, Safe Injection Supplies & Storage Capacities for Supplementary Vaccinations at Intermediate levels
- **subnational**: Multi-year Forecast of Immunization Supplies & Storage Capacities for Routine for Subnational stores
- **CC_transportation**: Summary of additional cold chain & vaccine shipment/transport needs for national & intermediate stores

#### 3.- Summary tables of cold chain estimations required within new vaccines applications to GAVI support

- **gavi_tables_nat**: Cold chain capacities required at the national/primary vaccine store
- **gavi_tables_interm**: Cold chain capacities required at the sub-national/intermediate vaccine stores

#### 4.- Tables with reference data sources

- **supplies**: VACCINES, SAFE INJECTION SUPPLIES & COLD CHAIN EQUIPMENT
- **CCEpt**: Refrigerator and freezer database
- **CR&VD**: SPECIFICATIONS & PERFORMANCE OF COLD BOXES & VACCINES CARRIERS

### SPECIAL INSTRUCTIONS

#### 3.1 National/primary vaccine store: the following data should be entered:

- **Cost of clearing**: indicate the cost of receiving vaccines and safe injection equipment at arrival in the country (clearing from customs, transport and storage costs)
- **Stock management cost**: NO ENTRY figures are set as a certain percent of the total value of the stock
- **Status of EVM**: select the status of implementation of EVM assessment at the primary vaccine store (Certified, Self-assessment, not done)
- **Available cold storage capacities**: indicate the gross and net storage of the cold chain (positive & negative)
Data entry sheets

1. **Data**: Data for planning routine and supplementary vaccinations
2. **Sias**: Data for planning supplementary vaccinations
3. **Stores**: Data on vaccine storage facilities and service points

Input data for planning vaccinations

- **Planning data for routine vaccinations**
  - Demographic data
  - Routine vaccination targets and plans

- **Frequency of supplies & Storage at national level**
  - Frequency of vaccine shipments
  - Estimation of population to be vaccinated

- **Planning data for supplementary vaccinations**
  - Vaccinations for disease control plans
  - Other interventions

- **Data on national store**
  - transit/handling fees
  - Status of EVM
  - Storage capacities (cold & dry storage)

- **Data on sub-national stores**
  - Total population
  - Storage capacities
  - Frequency of deliveries
  - Distance to supply
  - Cost (average) per delivery
## Multi-year forecast of Imm. Supplies & Storage Capacities for Routine at national level

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>Total 5-years</th>
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<tbody>
<tr>
<td><strong>Total cost of supplies &amp; logistics support</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td><strong>Cost of vaccines</strong></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Traditional vaccines</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underutilized vaccines</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Underutilized</td>
<td>$793,307</td>
<td>$813,172</td>
<td>$833,637</td>
<td>$854,470</td>
<td>$875,694</td>
<td>$897,768</td>
<td>$4,274,740</td>
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<tr>
<td>New vaccines</td>
<td>$2,012,163</td>
<td>$2,062,412</td>
<td>$2,114,016</td>
<td>$2,166,981</td>
<td>$2,220,969</td>
<td>$2,276,541</td>
<td>$10,840,918</td>
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<tr>
<td>New vaccines</td>
<td>$100,472</td>
<td>$105,784</td>
<td>$107,796</td>
<td>$110,535</td>
<td>$113,323</td>
<td>$116,188</td>
<td>$553,626</td>
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<tr>
<td><strong>Cost of safe injection supplies</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Traditional vaccines</td>
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<tr>
<td>Traditional</td>
<td>$43,517</td>
<td>$44,537</td>
<td>$45,654</td>
<td>$46,797</td>
<td>$48,022</td>
<td>$49,220</td>
<td>$234,231</td>
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<tr>
<td>Underutilized vaccines</td>
<td></td>
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</tr>
<tr>
<td>Underutilized</td>
<td>$56,955</td>
<td>$58,362</td>
<td>$59,793</td>
<td>$61,322</td>
<td>$62,818</td>
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<td>$0</td>
<td>$2,885</td>
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<td>$2,416</td>
<td>$2,483</td>
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<td>$12,682</td>
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<tr>
<td><strong>Vaccine receiving, storage &amp; stock management</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Vaccine shipment &amp; clearing costs</td>
<td>$152,309</td>
<td>$94,610</td>
<td>$98,836</td>
<td>$103,250</td>
<td>$107,849</td>
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<td>Vaccine stock management costs</td>
<td>$84,164</td>
<td>$87,993</td>
<td>$92,002</td>
<td>$96,192</td>
<td>$100,558</td>
<td>$105,141</td>
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<td>$3,156</td>
<td>$3,300</td>
<td>$3,450</td>
<td>$3,807</td>
<td>$3,771</td>
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<td>$61,736</td>
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<tr>
<td>Cold Chain additional annual running costs</td>
<td>$3,252</td>
<td>$3,318</td>
<td>$3,384</td>
<td>$3,452</td>
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<td>$17,265</td>
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<td><strong>Safe injection equipment receiving, storage &amp; stock management</strong></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>cost of clearing &amp; handling at arrival</td>
<td>$21,828</td>
<td>$30,724</td>
<td>$34,340</td>
<td>$39,139</td>
<td>$44,027</td>
<td>$49,059</td>
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<td>stock management cost</td>
<td>$5,024</td>
<td>$5,395</td>
<td>$5,608</td>
<td>$5,865</td>
<td>$6,133</td>
<td>$6,414</td>
<td>$29,415</td>
</tr>
<tr>
<td>stock management cost</td>
<td>$132</td>
<td>$142</td>
<td>$147</td>
<td>$154</td>
<td>$161</td>
<td>$168</td>
<td>$772</td>
</tr>
<tr>
<td>Cost of storage space at ambient</td>
<td>$16,672</td>
<td>$25,188</td>
<td>$28,585</td>
<td>$33,120</td>
<td>$37,733</td>
<td>$42,477</td>
<td>$42,477</td>
</tr>
<tr>
<td><strong>TOTAL COST</strong></td>
<td>$3,080,078</td>
<td>$3,106,702</td>
<td>$3,188,624</td>
<td>$3,274,375</td>
<td>$3,361,861</td>
<td>$3,452,231</td>
<td>$16,383,794</td>
</tr>
</tbody>
</table>
Outputs from estimations: subnational

Subnational multiyear

Outputs of **multiyear** estimation of needs and scenario analysis for vaccines, safe injection equipment and storage capacities for a selected subnational store

Subnational annual

Outputs of estimating **annual** (for a selected year) needs or scenario analysis for vaccines, safe injection equipment and storage capacities at all subnational stores
Summary...
Linking planning/demand forecasting and budgeting

1. State objectives
2. Action Plan
3. Evaluation
4. Adequate resources?
   - Yes
   - No
5. Additional Resources?
   - Yes
   - No
   - Reduce ambition
6. Implement
7. Monitor
Optimizing demand forecasting and budgeting: Planning prerequisites

<table>
<thead>
<tr>
<th>EPI component</th>
<th>Objectives</th>
<th>Logistics implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Routine immunization</td>
<td>Coverage and equity</td>
<td>Stock acquiring: vaccines, supplies, equipment</td>
</tr>
<tr>
<td>Disease control</td>
<td>Mass campaigns (Polio, measles, MNT &amp; YF), Surveillance activities (AFP, IDS, etc.)</td>
<td>Storage &amp; distribution: cold chain, transport management</td>
</tr>
<tr>
<td>Innovation</td>
<td>Introduction of new vaccines &amp; technologies (PCV, RV, HPV,..)</td>
<td>Stock management: Equipment installation &amp; maintenance</td>
</tr>
<tr>
<td>Integration with other programs: IMCI, Pneumo, AIDS, Adolescent health, etc.</td>
<td>Efficiency, economy of scale,</td>
<td>Waste disposal: collect, disposal</td>
</tr>
</tbody>
</table>

- Each of these program areas and their objectives have logistics implications, which translate in requirements
- Those requirements need to be reflected in the forecasting and budgeting exercise.
Optimizing demand forecasting and budgeting: From Inputs to desired outputs

### Programme targets
- Supply chain structure (# of levels, facilities)
- Vaccines & vaccination schedule (current & future)
- Vaccine management & utilization policies (stock levels, supply intervals)
- Equipment policies, status of CCE, maintenance system

### Use suitable tools
- Supply Chain sizing Tool
- EPI Logistics Forecasting Tool
- Equipment Inventory & Gap analysis Tool

### Desired outputs
- Estimation of vaccine demand (doses required)
- Capacities for storing and transporting vaccines & supplies
- Capacities for service delivery and waste disposal
Thank you!
Link to the EPI Forecasting Tool

CLICK HERE
Q&A Discussion Summary (1 of 2)

- Who should be involved in the annual vaccine forecasting exercise? Is it only for logisticians?
  - Setting objectives [for forecasting], is the responsibility of the program decision-makers. We want their perspective to reach everyone. The forecasting exercise itself can be delivered to the logisticians who make calculations on what the requirements will be to reach the targets. Then, presented to the decision-makers to mobilize the resources. It [forecasting] involves everyone from the top level down to the mid-level technicians.

- What is the most common mistake that countries make in vaccine forecasting and budgeting? – Logan Brenzel, BMFG
  - One of the mistakes we are seeing most frequently is re-conducting the set scope. We are used to making our decisions this way, [thinking] it will be the same thing. This may work for the programs that have reached a level of maturity. So, doing it the same way without necessarily seeking and re-seeking again for more efficiency and saving of resources.

- Is there one tool that’s recommended among the three tools that were presented? Easier, more accurate? Juliette Puret, Gavi
  - Different methods are being used. We are seeing people using the first [tool] mostly because it’s probably easy to approximate the parameters. Otherwise, it may be good to go for the third one, but what this exercise would require would not be realistic [in some countries] to implement. It may take a long time to make the estimations, but it’s well-done and gives a greater [more accurate] approximation.

- Is it feasible to implement vaccine forecasting for a facility-level immunization program? Oluwaseun Esan, Nigeria
  - Absolutely. This same approach can be done if microplanning processes are implemented in the program. Microplanning focuses on service delivery and provides for each district in different health areas.

- What is your advice and observations about the wastage rate and waste management as it relates to vaccine budgeting and forecasting? Miloud Kiddar
  - WHO and Gavi are investigating [this now] to find out the impact of wastage rate on the program sustainability to see if the higher the waste rate, the higher the demand will be. We didn’t have a method that would be able to look at suggestions from the modeling using the distribution of session size that determined the wastage. This exercise will come up with conclusions by the end of the year and will [allow us to see] - If I’m delivering my vaccines in this particular context - if I vaccinate once a week, once a month - what will be my wastage? It will allow you to predict that. Regarding waste management, it is the responsibility of immunization to take care [of] and plan to collect and dispose of the waste generated. We still need better, environmentally-friendly solutions that have yet to be developed.
Q&A Discussion Summary (2 of 2)

- How does internal displacement and refugee influx following conflict or disaster affect calculations? Kolawole Salami, Nigeria
  - This is a very disruptive factor in the forecasting. I think that some countries, like Jordan, factor in [for] some of this. The support should be there provided that you give some amount of calculations. If you have an idea of the refugee [situation], it can be estimated, but it is a challenging exercise.

- Some EPI managers tend to overestimate the quantity of vaccines needed, but now because of the financial constraints and the co-financing policies, have you seen any change in the way countries are forecasting the demand? Miloud Kaddar
  - Yes. But, still, I think there’s a clear pattern that is showing countries loading more costs on the vaccine forecasting and even procuring. I remember 5 or 10 years ago some countries had stock for up to two years or even three years. Today, most of the countries [have stock] between 9 and 12 months. This is a sign that countries are more conscious [today].

- There are often gaps between the forecasting of needs and what actually gets put into the budget. How can we strengthen this linkage at the country-level?
  - One of the solutions is a multi-year forecast. This [approach could help] reduce the gap between the forecast and budget because those who are allocating countries’ resources will have the visibility on the future and they can ensure that at least part, if not all, of the budget is allocated and secured.

- Do you suggest that EPI teams first consider the budget and then the number of doses needed or should they estimate the quantity needed and then look at the budget? Miloud Kaddar
  - The second – estimate what you need and ask for that.
Continue the conversation on the LNCT discussion forum

Explore at: https://lnct.global/forums/forum/discuss/

DISCUSS

LNCT members can share updates, exchange information, and solicit advice from other country teams or technical facilitators on Gavi transition processes or other Immunization topics.

Viewing 10 topics - 1 through 10 (of 10 total)

Discussion Around Recent Webinar: Where to find information on vaccine products

June 5, 2018 | Cristina Darer

Dear LNCT members, We hope that you found the vaccine procurement and markets information presented in the webinar held on 31 May 2018 useful. We encourage you to continue the discussion by submitting questions related to vaccine procurement and prices on this discussion topic.

Managing Transition in Nigeria – Our early experience and the challenges ahead

April 28, 2018 | Garba Bala Bakunawa

Lessons learnt from LNCT meeting were strategic to the success of Nigeria’s strategy for Immunisation and PHC System Strengthening. Even though the development of the transition