Implementation of GS1 Standards in Pakistan
Results of Piloting in Public Health Supply Chains

Dr. Muhammad Tariq
Country Director, USAID | DELIVER PROJECT, Pakistan
MTARIQ@myuw.net

Country Overview
Total population: ~196 million
Size: 796,095 sq km
Administrative structure:
- 5 provinces
- 143 districts
- 4 Federally administered regions (GB, AJ&K, FATA and ICT)

What was our mandate
Better Governance and Accountability of FP & EPI/PEI Supply Chains

A Model for the Global Community: Open Source LMIS

vLMIS – Better insight through data

cLMIS – Better insight through data
Background

- Directorate Central Warehouse, Karachi is using pre-printed non-GS1 Bar codes for tracking contraceptive commodities since Aug 2012
- Logistics management information system (LMIS) is being used as a central database to store and share barcode information (batch number) for any particular product
- Vaccine and Contraceptive LMIS Release 2 was mandated with bar code tracking of commodities
- GS1 barcode Pilot was planned from Dec14 to May15

Supply Chains

Pilot Products

Contraceptive

Vaccine (Measles & Tetanus Toxoid)

Training & visit by VPPAG

- Trainings on GS1 standards:
  Federal EPI Store users – Jan 2015
  Provincial and District users – Feb 2015
- Kaleb Brownlow visits
  Federal store to hear progress from National Manager EPI, Dr. Saqlain Gilani
WHAT HAVE WE LEARNT

Bar code suitable for National, Provincial but not district level due to unavailability of barcode on sub-secondary package

- Secondary package (with GS1-DataMatrix bar code) of Measles 10 dose or TT vaccine from SII has 06 sub-secondary packs with 50 vials and it contains no bar code.
- In districts, average issuance for a Union Council is approx. 100 vials of Measles, where one or two sub-secondary packs are being issued and due to no printed bar code, scanning could not be carried out.

Bar code solution is suitable for National, Provincial but not district level, due to unavailability of barcode on sub-secondary package

<table>
<thead>
<tr>
<th>Healthcare Product</th>
<th>Primary packaging (one vial)</th>
<th>No Bar code</th>
<th>Sub-Secondary packaging (multipack - 1 box of 50 vials each)</th>
<th>No Bar code</th>
<th>Secondary packaging (6 multipacks of 50 vials each)</th>
<th>GS1-Data Matrix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tertiary packaging – (4 multipacks of secondary packaging)</td>
<td>GS1-128</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
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Serialization and Delimiter Character

- For complete tracking of products, serialization is key to accuracy as it avoids double scanning and tracing of batches throughout the supply chain.
- GS1-DataMatrix from SII has no delimiter character while parsing scanned string to separate variable length serial number and the batch.

Case study of using serial and delimiter

- During pilot it was required to have physical count and during physical count it was found that 160 boxes were scanned twice. This fact was found due to serial number of boxes.
- GS1-Data Matrix Bar code Measles-10 from SII:
  - 01890121303506
  - 17160200
  - 10004M4012
  - 2155P2Z3JJC2GD5RAPA3AVYF
- 10 & 21 identifier can be part of serial or batch number, hence we used 21S as unique string to separate serial.

Quality of bar code

- Bar codes need to be printed on paper sticker instead of rough box surface.
- Suppliers may consider quality of bar codes issue like no, skewed and deformed bar codes.
Mix batches and lose products

- Mix batch in a secondary box requires multiple bar codes or needs to be avoided
- Consignments must be round to secondary package and must not contain any lose products

Simplification of vLMIS Scanner App

- Simplification and enhancement of bar code scanner application

vLMIS is the “Immunization Performance Management System” of Pakistan for good governance and high accountability of global and domestic investments

Summary of Recommendations

- Create demand and preparedness within host countries to procure GS 1 complaint supplies
- Vaccine industry responds to GS 1 pilot experience in Pakistan and other countries
- The industry is requested for adequate preparedness on GS 1 compliance for all antigens
- Pakistan needs resources to scale up GS 1 to all remaining 175 locations of the country

Thanks

For more information

www.deliver.jsi.com
www.lmis.gov.pk