A Product by Any Other Name:
How Data Standards Can Improve Our Supply Chains

GLOBAL HEALTH
SUPPLY CHAIN SUMMIT

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Lindabeth Doby

Senior Management Information Systems Advisor
USAID

Trisha Long

Senior Business Intelligence Analyst
GHSC-BI&A

Kaitlyn Roche

Manager, Global Standards,
GHSC-PSM

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We've talked about it for years...

- Wouldn't it be great if we could exchange data between our LMIS and WMS?

- What if we could validate our HMIS reports with logistics data?

- Imagine the greater visibility a country supply chain would have with system interoperability

- Poor data visibility
    - Systems not interoperable
- Lack of standardization in processes and operations
    - Inconsistent packaging labels
    - No master data (product master or facility master)
- Lack of data governance processes or master data management

**…WHICH RESULTS IN RISK TO SUPPLY CHAIN SECURITY!**

Vision

To enable identification of every item procured at every point in the supply chain, through administration to the patient

Goal

To enable a secure and efficient supply chain from source through to service delivery

Objectives
- To enable end-to-end data visibility
- To identify and implement supply chain efficiencies
- To ensure supply chain security
- To increase patient safety
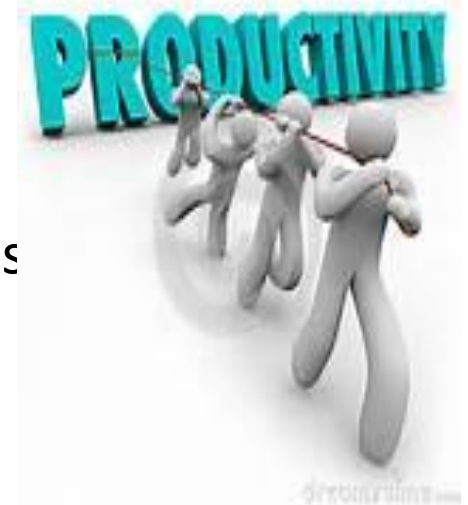
No standards? No Governance? What does that look like?

- Country X Example ---- Product Master Alignment:
  - Two systems in-country that were aligned during deployment but went out of alignment over the course of use
    - System 1 – 11,323 item records in product catalog
    - System 2 – 1,327 item records in product catalog
  - Duplication of data
    - 1,768 products are duplicated multiple times in the system resulting in 5,579 records in the product master (roughly 50% of total records)
    - Required two full time staff to correct order requisitions every month.
- Country Y Example - Product Master Alignment:
  - Harmonization challenges
    - Same product/item but different pack sizes
    - System owners don't want to give up ownership of the master list
    - DONORs send commodities that are not on the approved master list
    - Limited resources for sustaining the harmonized lists (it's going to happen again)

Why are global standards relevant?

Global Standards
- Published documents that establish specifications and procedures designed to ensure the reliability of the materials, products, methods, and/or services people use every day. (IEEE)
- Address a range of issues, including but not limited to a common nomenclature and protocols across various entities in support of interoperability.

GS1 Standards
- Develop and maintain global standards for business communications
- Provide a common language to identify, capture, and share supply chain data
- Specific focus on applicability of standards for healthcare supply chain

Supply Chain Data Visibility
- Enabled through common nomenclature, processes, and data sharing interoperability across all stakeholders in the global health supply chain

So what are we doing about it?

- Leveraging pooled procurement efforts to push manufacturers to comply with global standards

- Collaborate with other global donors on product masters

- Creating and publishing guidelines for easier adoption of standards by our country colleagues

- Acknowledging right now that this is likely a 10 year effort that we are launching, so working with all stakeholders to move along in adoption at a steady pace.

What is Product Master Data?

- Conforms to rules we have agreed to with our partners
  - Naming conventions
  - Standard classifications
- Maintained and updated in a controlled process
  - A data governance committee reviews proposed changes
  - Anyone can submit a change, only the data governance committee can approve it
  - After they are approved, changes are communicated to all partners

We agree: it's a car!

Credit for image idea: www.datamartist.com
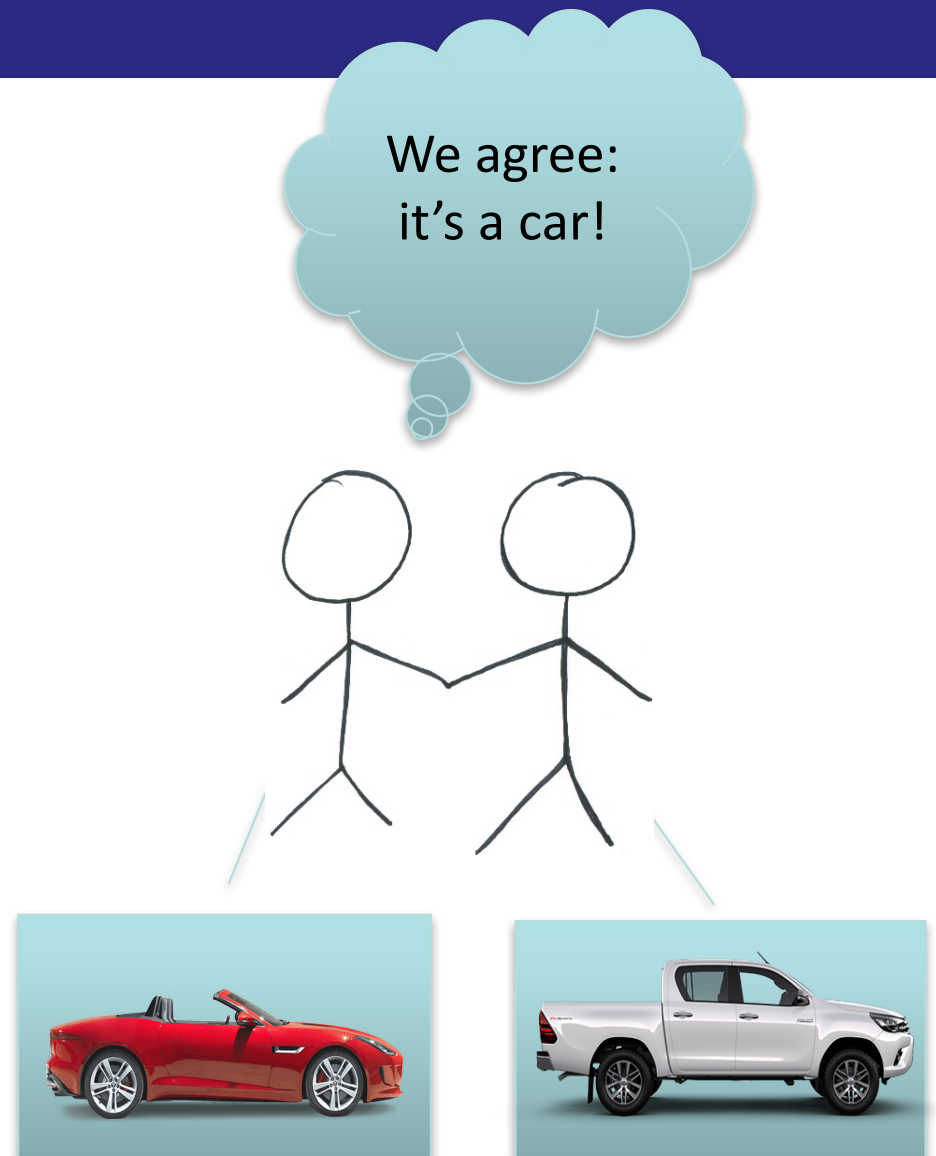
How does the product classification hierarchy look?

Level 1 = Drugs and Pharmaceutical Products

Level 2 = Amebicides and trichomonacides and antiprotozoals

Level 3 = Antiprotozoals

Level 4 = Artemether

Level 5 = Artemether 20 mg/mL Ampoule

Trade Item = Aremether 20mg/mL Ampoule, 30 Ampoules

- What is the the amount spent on vehicles in the past year in Program X versus Program Y?

Information Provider(Group)	USAID Product Classification Level 2	PO Line Item Value
Program X	Motor vehicles	$1,209,085.00
Program Y	Motor vehicles	$642.00

- How many different formulations of Abacavir/Lamivudine are we procuring?

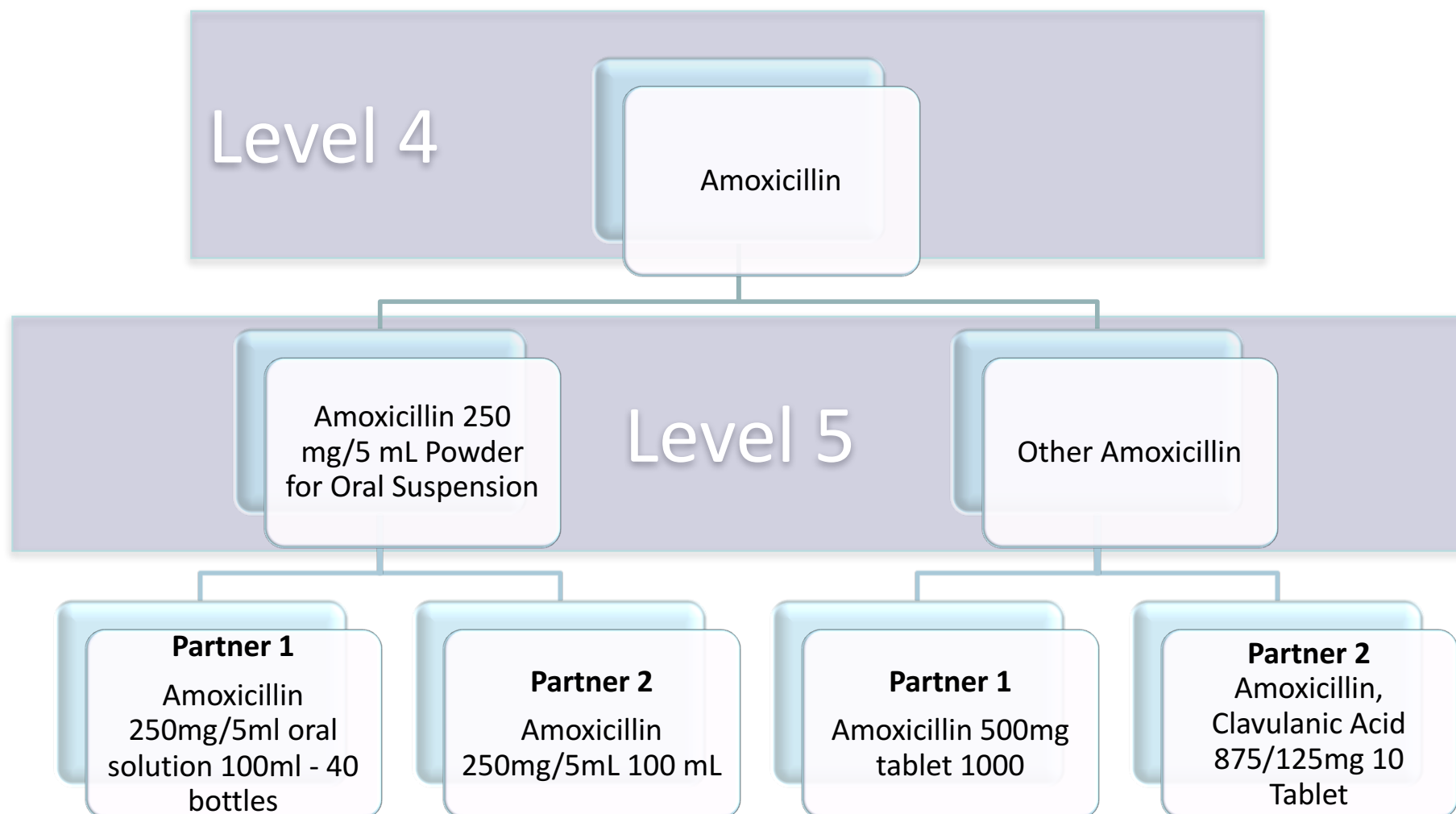| USAID Product Classification Level 4	USAID Product Classification Level 5
Abacavir/lamivudine	Abacavir/Lamivudine 120/60 mg Tablet
	Abacavir/Lamivudine 60/30 mg Dispersible Tablet
	Abacavir/Lamivudine 60/30 mg Tablet
	Abacavir/Lamivudine 600/300 mg Scored Tablet
	Abacavir/Lamivudine 600/300 mg Tablet

- What did we buy last year from Manufacturers A, B, and C?

Manufacturer(Group)	PO Created Year	2016
	USAID Product Classification Level 5	PO Line Item Qty
Manufacturer A	Bupivacaine 0.5% (20 mL) Vial	1,929
	Lidocaine 1% (20 mL) Vial	250
	Lidocaine 2% (20 mL) Vial	498
Manufacturer B	Lidocaine 2% (20 mL) Vial	498
Manufacturer C	Bupivacaine 0.5% (20 mL) Vial	1,929

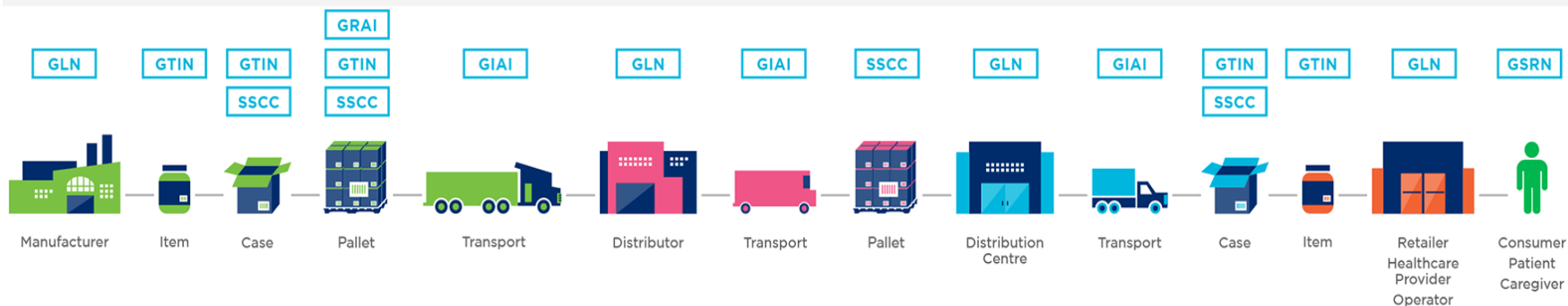# Mapping trade items from new partners

Level 4

Amoxicillin

Level 5

Amoxicillin 250 mg/5 mL Powder for Oral Suspension

Other Amoxicillin

Partner 1
Amoxicillin 250mg/5ml oral solution 100ml - 40 bottles

Partner 2
Amoxicillin 250mg/5mL 100 mL

Partner 1
Amoxicillin 500mg tablet 1000

Partner 2
Amoxicillin, Clavulanic Acid 875/125mg 10 Tablet

www.wordsift.org

GS1: a global system of standards

Identify: GS1 Standards for Identification

GLN Global Location Number   **GTIN** Global Trade Item Number   **SSCC** Serial Shipping Container Code   **GRAI** Global Returnable Asset Identifier   **GIAI** Global Individual Asset Identifier   **GSRN** Global Service Relation Number

GLN | GTIN | GTIN / SSCC | GRAI / GTIN / SSCC | GIAI | GLN | GIAI | SSCC | GLN | GIAI | GTIN / SSCC | GTIN | GLN | GSRN

Manufacturer — Item — Case — Pallet — Transport — Distributor — Transport — Pallet — Distribution Centre — Transport — Case — Item — Retailer Healthcare Provider Operator — Consumer Patient Caregiver

Capture: GS1 Standards for Barcodes & EPC/RFID

GS1 Barcodes   **GS1 EPC/RFID**

EAN/UPC | GS1-128 | ITF-14 | GS1 DataBar | GS1 DataMatrix | GS1 QR Code | GS1 Composite Barcode | EPC HF Gen 2 | EPC UHF Gen 2

9 501101 021037

(00) 3 9501100 000001001 9

09501101021037

(01) 0 9501101 02103 7

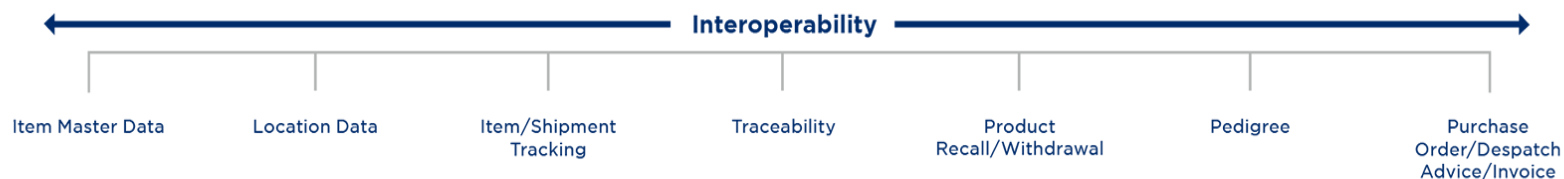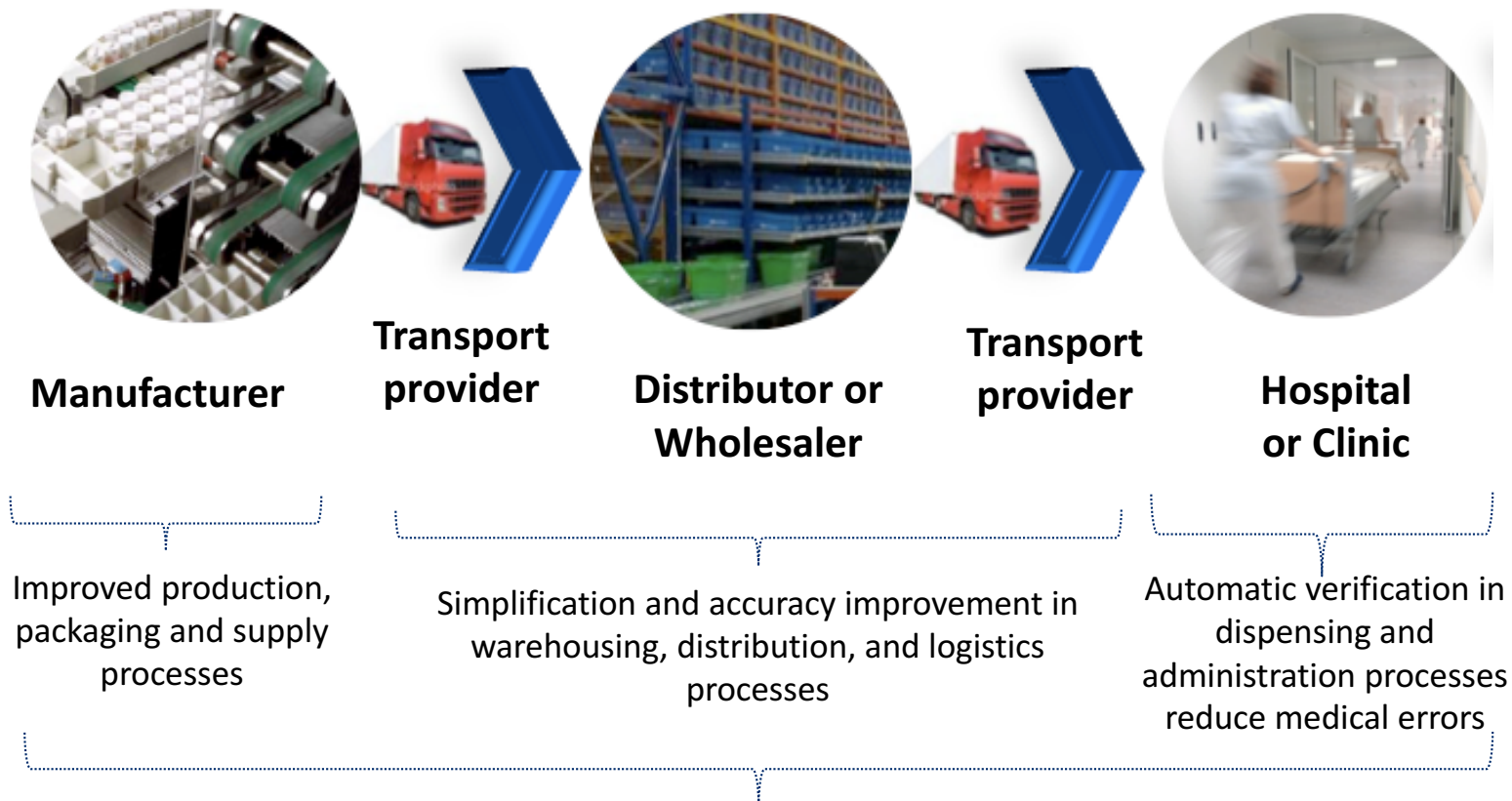9501 1028

Share: GS1 Standards for Data Exchange

Master Data Global Data Synchronisation Network (GDSN)   **Transactional Data** eCom (EDI)   **Event Data** EPC Information Services (EPCIS)

← Interoperability →

Item Master Data | Location Data | Item/Shipment Tracking | Traceability | Product Recall/Withdrawal | Pedigree | Purchase Order/Despatch Advice/Invoice

GS1 standards across the entire supply chain

Manufacturer

Transport provider

Distributor or Wholesaler

Transport provider

Hospital or Clinic

Improved production, packaging and supply processes

Simplification and accuracy improvement in warehousing, distribution, and logistics processes

Automatic verification in dispensing and administration processes reduce medical errors

- More accurate and efficient supply chain management
- Enabling traceability and authentication (counterfeiting, product recalls, etc.)
- Enabling regulatory compliance
- **Improving patient safety and supply chain efficiency**!

Reproductive Health Global Traceability Advisory Group (RH GTAG)

IDENTIFICATION RECOMMENDATIONS FOR REPRODUCTIVE HEALTH PHARMACEUTICAL PRODUCTS

REPRODUCTIVE HEALTH GLOBAL TRACEABILITY ADVISORY GROUP

Version 1.1, April 2017

A forum for subject matter experts from industry and the public sector to discuss and provide recommendations for the adoption and implementation of global standards for RH product identification, data capture, and data exchange in the supply chain.

Industry Advisors

Pfizer · Bayer · MERCK · indus · PREGNA INTERNATIONAL LTD. · Ansell · THE FEMALE HEALTH COMPANY · Mylan

Facilitators

UNFPA · USAID · GS1 · Reproductive Health SUPPLIES COALITION

Identification Recommendations for Reproductive Health Pharmaceutical Products

GHSC-PSM Announcement of Contract Requirements

GHSC-PSM developed a two year work plan and strategic vision (FY17 – FY18) to drive implementation across the organization.

In May 2017, GHSC-PSM issued an announcement of our requirement to suppliers stating the new requirement and implementation timeline.

USAID GLOBAL HEALTH SUPPLY CHAIN PROGRAM
PROCUREMENT AND SUPPLY MANAGEMENT

Announcement of Intention to Implement Global Standards for Product Identification, Labeling, and Data Exchange

MAY 15, 2017

Announcement of Intention to Implement Global Standards for Product Identification, Labeling, and Data Exchange

General Principles

- Adopt global standards to promote efficiency, reliability, and effectiveness
- Clearly identify vision, goals, and objectives to motivate requirements
- Requirements should capture what is necessary to secure the supply chain
- Requirements should be phased in over time to allow for transition
- Leverage successful practices and systems from other markets
- Harmonize with other key stakeholders in the community to:
  - ✓ Minimize the risk and investment required by suppliers
  - ✓ Maximize benefits to country supply chains and patients
- Establish benchmark metrics and KPIs to ensure accountability and measure progress

There are four elements to our strategy

IDENTIFY

Assignment of numbers to items and locations

CAPTURE

Marking of application identifiers on packaging and labeling

SHARE

Exchange of master and transactional data

USE

Data management; streamline processes; track and trace

What does it apply to?

Tertiary package   Tertiary package   Secondary package   Primary package

Trade Items

Logistics Items

Image source: GS1 Global
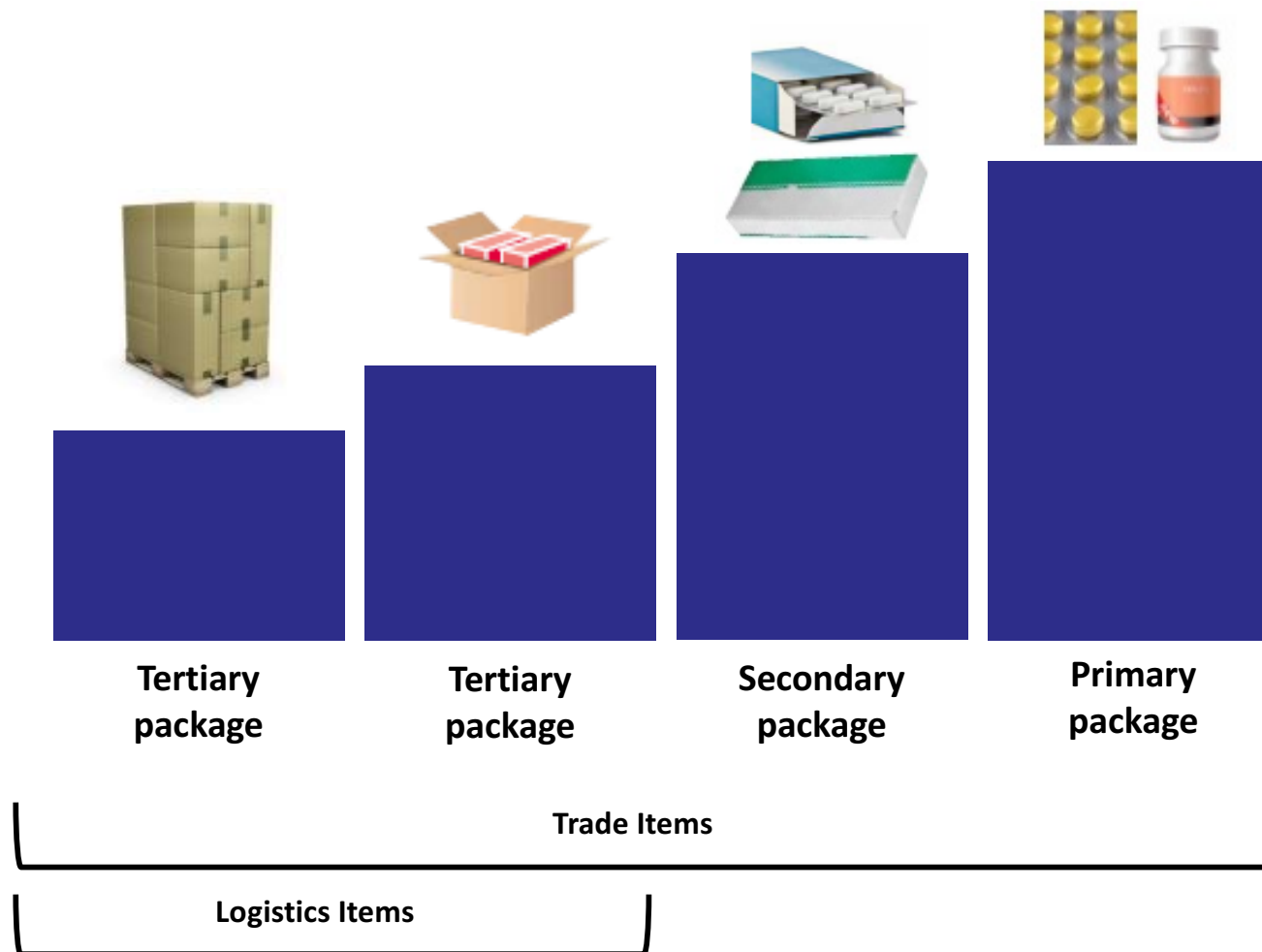
Implementation will roll out in four phases

	2017	2018	2019	2020	2021	2022
Within 6 months*						
Phase 1	0-18 months					
Phase 2	0-36 months					
Phase 3	0-60 months					

Scale-up

Requirement
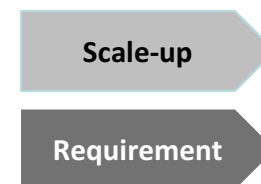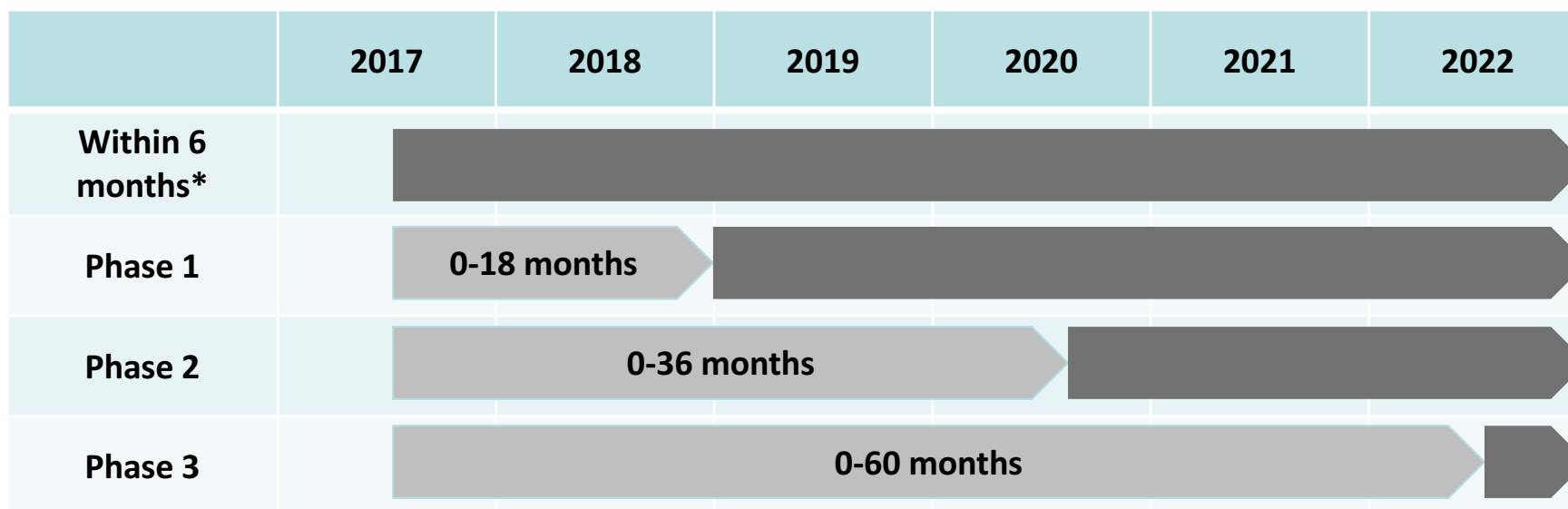
*Within 6 months of initial contract being signed

To identify, organizations need to register with GS1 to obtain a GS1 Company Prefix and assign numbers to items and locations.

	Within 6 months	Dec 2018
Secondary Packaging Multipack and/or Single Pack Carton (Trade Item)	✓ (01) Global Trade Item Number (GTIN) ✓ Other attributes as requested	
Tertiary Packaging Case/Carton (Trade Item)	✓ (01) GTIN ✓ Other attributes as requested	
Tertiary Packaging Pallet (Trade Item)	✓ (01) GTIN ✓ Other attributes as requested	
Location		✓ Global Location Number (GLN) Sold-from ✓ GLN Ship-from

To capture, organizations need to apply relevant automatic identifier and data capture (AIDC) technology to packaging that includes required application identifiers and human readable interpretation (HRI)

|	AIDC	Dec 2018	Jun 2020	Jun 2022
Secondary Packaging Multipack/Single Pack Carton (Trade Item)			✓ (01) GTIN ✓ (10) Batch / Lot ✓ (17) Expiry	✓ +(21) Serial Number (pharma only)
Tertiary Packaging Case/Carton (Trade Item)		✓ (01) GTIN ✓ (10) Batch / Lot ✓ (17) Expiry		✓ +(21) Serial Number (pharma only)
Tertiary Packaging Pallet (Trade Item)		✓ (01) GTIN ✓ (10) Batch / Lot ✓ (17) Expiry		✓ +(21) Serial Number (pharma only)
Tertiary Packaging Case/Carton (Logistics Item)				✓ (00) Serial Shipping Container Code (SSCC)
Tertiary Packaging Pallet (Logistics Item)				✓ (00) SSCC

SHARE

To share, organizations need to register with GHSC-PSM's Supplier Portal for transactional data and the Global Data Synchronization Network (GSDN) for master data.

	Within 6 months	Dec 2018	Jun 2022
Master Data Products	✓ (01) GTIN ✓ Additional attributes		
Master Data Location		✓ GLN Sold-From ✓ GLN Ship-From	
Transactional Data Purchase Order (PO)	✓ (01) GTIN ✓ (37) Quantity	✓ +GLN Sold-from ✓ +GLN Ship-from ✓ +GLN Bill-to / Sold-to	✓ +GLN Ship-to
Transactional Data Advanced Shipping Notice (ASN)	✓ (01) GTIN ✓ (10) Batch / Lot ✓ (17) Expiry ✓ (37) Quantity	✓ +GLN Sold-from ✓ +GLN Ship-from ✓ +GLN Bill-to / Sold-to	✓ +SSCC ✓ +GLN Ship-to
Transactional Data Packing Slip	✓ (01) GTIN ✓ (37) Quantity	✓ +GLN Sold-from ✓ +GLN Ship-from ✓ +GLN Bill-to / Sold-to	✓ +GLN Ship-to
Transactional Data Invoice	✓ (01) GTIN ✓ (37) Quantity	✓ +GLN Sold-from ✓ +GLN Ship-from ✓ +GLN Bill-to / Sold-to	✓ +GLN Ship-to

EXAMPLE ONLY

GS1 Global Data Synchronisation Network™ (GDSN®)
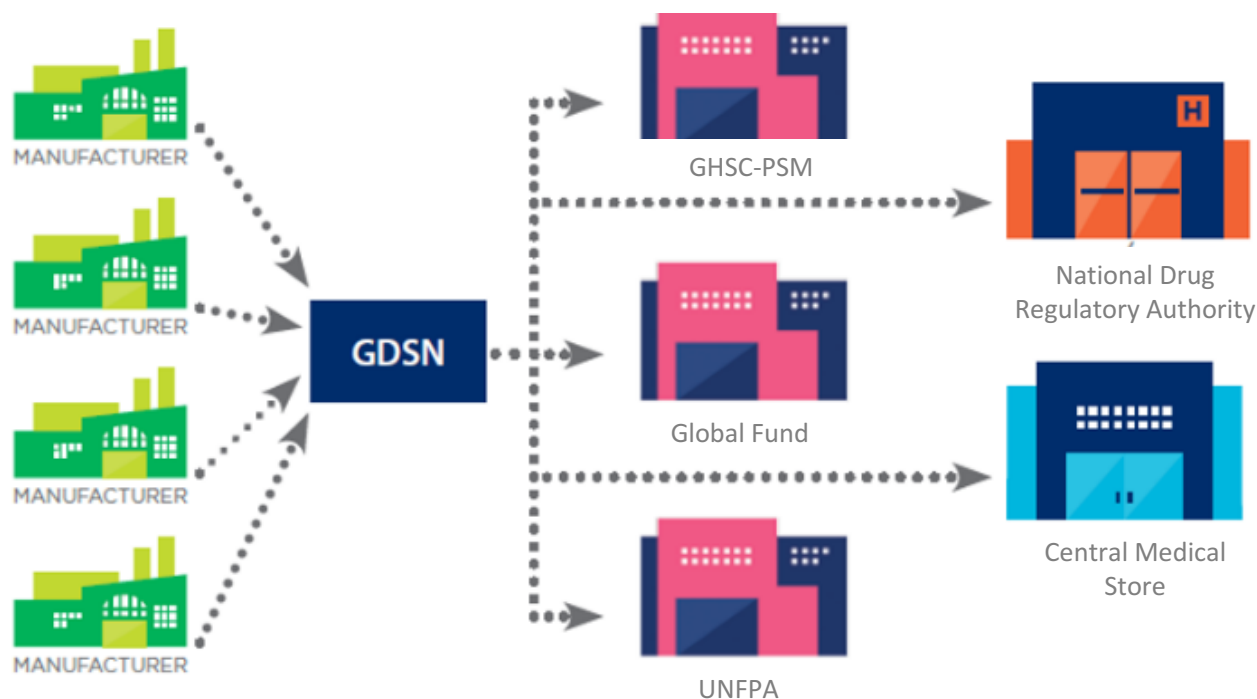
Manufacturers are able to provide data to all kind of databases and all kinds of customers (hospitals, distributors, wholesalers, GPOs) simultaneously, with a single connection.

What to take away from our presentation?

- Implementation of **GS1 Standards** is a long term goal (5 - 10 years)

- Harmonize and manage **Product Master**

- Global Donors are pushing to set the building blocks in place now

- We are all learning as we go and expect to share successes, failures and lessons learned along the way

- **Start the conversation** around GS1 Standards and Master Data alignment and governance **NOW**

- It's in our best interest to **help each other be successful!**

GS1 Member Organizations in sub-Saharan Africa

Country	Website
Cote d'Ivoire	www.gs1ci.org
Ghana	http://www.gs1gh.org/
Kenya	www.gs1kenya.org
Nigeria	www.gs1-nigeria.org
Senegal	www.gs1senegal.org
South Africa	www.gs1za.org
Tanzania	www.gs1tz.org/

For information about the 112 GS1 Member Organizations throughout the world, please visit https://www.gs1.org/contact/overview

Contact Information

Lindabeth Doby
USAID Office of HIV/AIDS
Senior Management Information Systems (MIS) Advisor
ldoby@usaid.gov

Trisha Long
GHSC-BI&A
Senior Business Intelligence Analyst
tlong@intellicog.com

Kaitlyn Roche
GHSC-PSM
Manager, Global Standards
kroche@ghsc-psm.org

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