GS1 Standards Webinar

GS1 Standards 101

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October 31, 2019
Agenda

1. GS1 – Who We Are
2. Introduction to Standardized Identification
   a) Product Identification
   b) Location Identification
   c) Service Relationship Identification
3. Getting Started
4. Questions
GS1 – Who We Are
GS1 – Who We Are

1.5 million companies around the world use GS1 standards

Over 100 million products carry GS1 barcodes around the world

More than 6 billion GS1 barcodes are scanned around the world every day

114 Member Organizations Globally

We believe in the power of standards to transform the way we live and work
GS1 Canada – Who We Are

• **Neutral, not-for-profit association with +20,000 Subscribers** that develops and maintains global standards for efficient business communication

• **Community Management:** Collaborate with business leaders, sector boards, advisory councils and industry work groups

• **Education:** Partnering with industry, we provide education and implementation support

• **Solutions Development:** Directed by industry, we develop Industry Managed Solutions to address specific sector-wide, non-competitive business process issues, built on cost-recovery basis and focused on data integrity
GS1 Canada: Lead by Industry

Sector Board Member Organizations

- Grocery Sector Board
- Foodservice Sector Board
- General Merchandise Sector Board
- Healthcare Sector Board
- Pharmacy Sector Board

As of September 2019
A Global System of Standards

**IDENTIFY**
- GS1 IDENTIFICATION NUMBERS
  - Locations
  - Products
  - Assets
  - Patients
  - Documents

**CAPTURE**
- AUTOMATIC DATA CAPTURE
  - Barcodes
  - RFID tags
  - QR codes

**SHARE**
- EXCHANGE BUSINESS CRITICAL INFORMATION
  - Electronic data exchange
  - Data synchronization
  - Item master file integrity

**USE**
- STREAMLINE BUSINESS PROCESSES
  - Bedside scanning to EMR
  - Product recalls
  - Medication dispensing
  - Order & contract management
  - Global product identification
  - Nutritional data & menu planning
  - Consignment inventory
  - Mobile/Virtual Health
# Applicable Standards in Healthcare

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<td>Global Trade Item Number</td>
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<td>Global Location Number</td>
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**Deployed with other Standards**
- Health Industry Barcode (HIBCC)
- International Council for Comm onality in Blood Banking Autom ation, Inc. (ICCBBA)
- Vendor Product Identification
- Drug Identification Number (DIN)
- United Nations Standard Products and Services Code (UNSPSC)
- Global Medical Device Nomenclature (GMDN)
About SCAN Health

In 2017, the Government of Canada, Networks of Centres of Excellence of Canada (NCE) provided $1.6 million over four years (2017-2021) to create SCAN Health. SCAN Health is an International Knowledge Translation Platform (NCE-IKTP) funded to accelerate knowledge translation and address key problems, challenges and opportunities of high strategic importance for health systems in Canada and around the globe. Led by world-renowned researcher, Dr. Anne Snowdon (left) as Scientific Director and CEO of SCAN Health.

NCE-IKTP Program: Supports international collaborations between networks, centres, consortia and their partners, with the goal of accelerating the achievements of researchers and the implementation of their work.

Knowledge Mobilization: Specific activities and tools designed to put available, evidence-based knowledge into active service by creating impacts that benefit society.

SCAN Health Mission: To develop an International Knowledge Translation Platform to mobilize expert knowledge and research evidence to inform and support health systems to accelerate, scale and measure health system supply chain transformation.

SCAN Health Vision: To advance global capacity to adopt and scale best practices in healthcare supply chain to offer traceability of products and care processes from bench to bedside to patient outcomes.
Our Strategic Initiatives

1. **Global Networking Event**: Our annual networking event brokers relationships and fosters collaboration on supply chain initiatives and projects, creating dialogue focused on key challenges and priorities for health systems.

2. **Knowledge Mobilization Platform**: Online learning platform enables partners to come together on key priorities and learning opportunities to profile “best practice” achievements in supply chain transformation in health systems.

3. **Business Case Competition**: Provides students with the opportunity to build leadership capacity and develop solutions to a real-world health system challenge using supply chain strategy and logistics processes.

4. **Clinically Integrated Supply Outcomes Model (CISOM)**: Partnered with HIMSS Analytics, CISOM will guide and measure health system’s progress towards transforming their supply chains. Clinically integrated supply chains enable transparency of real-world data and evidence of value and performance.

5. **Design Competition**: Creates a forum for industry to engage with health systems to design the solutions needed to advance supply chain transformation to support traceability of products linked to patient outcomes.
<table>
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<tr>
<th>Stage</th>
<th>Clinically Integrated Supply Outcomes Model (CISOM)</th>
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| 7     | Clinically integrated supply chain achieved, enabling:  
       | • Precision and personalized healthcare service delivery  
       | • Real world evidence of patient outcomes from traceability of care processes and products |
| 6     | • Transparency across the patient journey of care  
       | • Automated traceability of patient care processes and products  
       | • Provider team care delivery linked to individual patient outcomes |
| 5     | • Supply chain processes are automated and integrated at the point of care  
       | • Complete traceability of products and care processes  
       | • Automated tracking of adverse events and product recalls |
| 4     | • Integration of supply chain processes into clinical programs  
       | • Optimization of inventory management linked to patient care needs |
| 3     | • Supply chain strategy creates visibility of inventory across the organization  
       | • Automation of financial processes linked to product procurement  
       | • Evidence Informed product standardization |
| 2     | • Inventory tracking and automation  
       | • Optimization of supply costs and inventory management |
| 1     | • Basic supply chain processes are established as a business function of the organization |
| 0     | • Inventory and supply processes are manual  
       | • There is no supply chain strategy identified for the organization |

The **HIMSS Analytics’ CISOM** is an eight stage (0-7) model that provides a strategic pathway to track processes and products used in care, by mobilizing data to create real world evidence of impact and outcomes for patient populations.
Impact of Supply Chain Transformation in Global Health Systems

**Alberta Health Services (AHS), Canada**
- Integration of supply chain processes into clinical programs across the entire province
- Integration into patient information system at point of care planned 2019
- Online Adverse event reporting system and performance dashboard

7:1 ROI to date | $301,438,786 in savings over 7 years in inventory only

**National Health Services, England (NHS), United Kingdom**
- Implemented supply chain infrastructure in six NHS trusts’ specialty programs, traceability of patients, providers, locations, products and outcomes
- By 2021, implementation planned for all 148 trusts is expected to generate £1 billion in savings (£30 million/month)

4:1 expected by year 3 from inventory savings | £1,034,000,000 savings projected by year 7 (£30M/mon. all Trusts) | Equivalent of 16 FTE’s in labor savings/Trust

**Mercy Health, United States**
- Integration of supply chain best practices into Perioperative program in 3 of 45 hospitals
- Automated perioperative environments with point of care scanning – integrated supply chain team and clinician teams

$1 billion in savings as a direct outcome of optimizing and transforming supply chain processes, most savings due to inventory management | 29.5% decline in labor costs and 33% decline in supply costs
The Supply Chain Pathway to Personalized, Precision Health Care Delivery

- **Product Traceability and Recall** is fully automated, which offers accurate case costing at the individual patient level.
- **Global Standards Adoption** enables global traceability of products used in care processes.
- **Inventory Optimization** reduces waste, generates 7:1 ROI and cost savings offer potential for self-funding.
- **Transparency of Patient Care Outcomes Across the Journey of Care** tracks outcomes for patient populations and conditions under which best outcomes are achieved.
- **Predictive AI Tools** identify patients at risk, cue clinicians to proactively intervene to reduce risk, and support health outcomes at the individual patient level and population segments.
- **Personalized Health System** Proactive care delivery informed by real-world evidence of outcomes.
- **Improved Quality and Safety Outcomes**, reduced medical error – Clinically integrated supply chain tools are used by program teams to measure quality and safety outcomes in real time at the individual patient level to reduce medical error.

Supply Chain Infrastructure as a Strategic Asset for Health Systems

Clinically Integrated Supply Outcomes Model (CISOM)
Introduction to Standardized Identification

a) Product Identification
b) Location Identification
c) Service Relationship Identification
The Challenge: Non-Standardized Product Identification

Each partner assigns its own proprietary number:
- Eliminating Traceability
- Making Recalls Impossible
- Adding Risk and Cost to the system
The Solution: Global Trade Item Number (GTIN)

Using Global Trade Item Number (GTIN) across all stakeholders results in:

- Eliminating Re-labelling
- Eliminating Proprietary Numbers
- Enabling Traceability

1 single product identifier: Global Trade Item Number (GTIN)
What is a Global Trade Item Number?

A Global Trade Item Number (GTIN) is a numerical identification code used to identify a product as it moves through the global supply chain to the hospital or ultimate end user.

- An item with a GTIN can be sold globally.
- The GS1 standard GTIN is allocated by the Company Prefix Owner.
- GTINs are unique by packaging levels.
- In North America this is commonly known as a EAN, UPC or barcode.

**Identify**

**Company**
- Global GS1 Company Prefix
- Global Location Number (GLN)

**Product**
- **Global Trade Item Number (GTIN)**
  - Serialized Global Trade Item Number (EPC*/SGTIN)

**Location**
- Global Location Number (GLN)

**Logistics**
- Serial Shipping Container Code (SSCC)
- Global Shipment Identification Number (GSIN)

**Assets**
- Global Individual Asset Identifier (GIAI)
- Global Returnable Asset Identifier (GRAI)

**Services & Other**
- Global Service Relation Number (GSRN)
- Global Document Type Identifier

**Images**
- GS1-128 (14-digit GTIN)
- GS1 DataMatrix (14-digit GTIN)
- GS1 DataBar™ (14-digit GTIN)
- RFID tag
What is a GTIN?

• A Global Trade Item Number is an identification code that is used to identify product as it moves through the global supply chain to patient care / EMR.
• Used to identify products and packaging configurations
• Unique global company prefix – licensed managed by GS1 (allows for unique identification – the building of global standards such as a barcode)

Global Trade Item Number

0 1 0 6 1 4 1 4 1 0 0 0 1 2*

* Check Digit Calculator at mygs1ca.org under Tools
GTIN at Each Packing Level

- GTIN is unique to each packaging level.
- The GTIN at the Level Below Each (GTIN A) may be assigned but not necessarily marked on a barcode.
- UPC is a legacy term initiated by the Grocery sector and is the barcode symbol that carries the GTIN for Grocery.

The Global Language of Business
Global Trade Item Number (GTIN)

In addition to the primary information (the GTIN), secondary information can also be represented in the GS1 System of standards.

Secondary information can include:

- Lot Number (10)
- Expiration Date (17)
- Production Date (11)
- Serial Number (21)

This information is referred to as **Application Identifiers (AIs)** in the GS1 System.
GTIN and Application Identifiers Enable Unique Device Identification (UDI)

Examples Enlarged For Display Purposes
Recommended Barcode in Healthcare and Pharmacy

• The GS1 DataMatrix barcode has been recommended globally for implementation for all regulated healthcare product (e.g.: pharmaceuticals and medical devices).

• Institute for Safe Medication Practices Canada (ISMP) and Canadian Patient Safety Institute (CPSI) recommend GS1 standards for automated identification (e.g. barcoding) of pharmaceutical products in Canada.

• Barcodes should include GTIN, lot, and expiry date.
Recommended Barcode in Healthcare and Pharmacy

- Recommendations acknowledge, although a single bar code containing all data elements is recommended, retail pharmacy operations may require a formal transitional period during which both a Linear (UPC) barcode (required for point-of-sale purposes) and DataMatrix appear on the product label. Barcodes should include GTIN, lot, and expiry date.

- Canada is in the transition mode. As healthcare providers upgrade their systems and scanners to enable DataMatrix scanning, manufacturers are recommended to utilize both Linear and DataMatrix for an interim period.
Who Assigns the GTIN?

The Brand Owner Assigns the GTIN.

Manufacturers
[Med Device, Pharmacy, Food Service, ...]

Distributors

Healthcare Providers

Shared Service Organizations

Group Purchasing Organizations

Pharmacy
GTINs Automate Supply Chain and Patient Care Workflow

Foodservice
- Scanned at Point of Sale
- eCommerce
- Warehouse Management
- Product Traceability

Pharmacy
- Procurement & Supply Chain
- Barcoding for Medication Administration
- Product Recall Processes
- e-Health Records Integration
- Product Traceability

Medical Device
- Procurement & Supply Chain
- eCommerce
- Bedside Scanning and Clinical Work Flow
- e-Health Records Integration
- Product Traceability
Healthcare Providers

Healthcare Providers, Shared Service Organizations, Group Purchase Organizations at Various Stages of Integrating GTINs

Adoption of GTIN Enabling:

• Standardized product identification in hospital item master file supporting business processes (e.g. contracting, procurement, analytics)

• Support standardized product identification in Electronic Data Interchange (EDI)
Adoption of GTIN Enabling:
• Inventory management and distribution in warehouse
• Identification of products for use in the operating room
• Unique Device Identification (UDI) used in Electronic Medical Records (EMR)
Barcoding Products with a GTIN Enabling:

- Compliance with regulatory requirements (e.g. UDI)
- Compliance with hospital terms and conditions (e.g. new contract)
- Standardized product identification to manage product warehousing and distribution to customers
- Traceability of products (e.g. Recalls)
Benefits of Using GTINs

- Eliminates manual processes associated with ordering and managing product.
- No product or packaging size will be confused with another.
- Providers will not need to re-label product as it arrives at their facility.
- Access to clean, standardized product information prevents errors and administrative waste.
- Enable bedside scanning and digital healthcare.
- Standards combined with automation will enable research and cost, quality, outcome analytics.
- Automate rapid and efficient product recalls.
Introduction to Standardized Identification

a) Product Identification

b) Location Identification

c) Service Relationship Identification
The Challenge: Non-Standardized Location Identification

Many different names, different location identifiers for 1 hospital
The Solution: Global Location Number (GLN)

Manufacturers / Distributors / GPOs

- ST. JOHN’S HOSPITAL
  GLN # 6344800648123

Globally Standardized Location Identifier assigned to Legal Entity, Bill To, and Ship To locations.
What is a Global Location Number?

The **Global Location Number (GLN)** is a globally unique 13-digit identification code assigned using a GS1 prefix to identify:

- **Legal entities**: Whole companies, subsidiaries or divisions, such as manufacturers, hospitals, Shared Services Organizations.
- **Functions within legal entities**: Specific departments within a legal entity, such as, hospital pharmacy, hospital wards, accounting department, emergency department, purchasing departments, etc.
- **Physical locations**: Single points of access with a physical address, such as, hospital wing, nursing station, manufacturer's warehouse, hospital unit, clinic, retail store, warehouse, manufacturing plant, loading dock, vending machine, cabinet, etc.
Who Assigns the GLN?

The Legal Entity / Location Owner Assigns the GLN.

- Manufacturers
  [Med Device, Pharmacy, Food Service, …]
- Distributors
- Healthcare Providers
- Shared Service Organizations
- Group Purchasing Organizations
- Pharmacy
Healthcare Providers and Shared Service Organizations at Various Stages of Integrating GLNs

Adoption of GLN Enabling:

- Standard Bill To and Ship To identifiers supporting Procure-to-Pay process (e.g. Electronic Data Interchange)
Manufacturers of healthcare medical devices **publish GTIN and related product attribute information** to healthcare providers in the Global Data Synchronization Network (GDSN).
GLNs Encoded in a Barcode

GLN Barcodes
GS1 Canada’s ECCnet Registry Assigns /Manages GLNs In Canada

**Manufacturer Information:**
- Global Location Number
- Site name
- Street address
- City
- Postal Code

**Provider Information:**
- Global Location Number
- Site name
- Street address
- City
- Postal Code

**Diagram:**
- MANUFACTURER
- HEALTHCARE PROVIDER
- GLN
- GLN
Benefits of Using GLNs

- Uniquely identify legal entities and locations from manufacturing to point of care.
- Reduce volume of location information to be maintained by all parties.
- Increase efficiencies associated with ordering, managing, and recalling product.
- Enable traceability for bedside scanning and digital healthcare.
- Standardized identification for locating medical devices in a hospital.
Introduction to Standardized Identification

a) Product Identification
b) Location Identification
c) Service Relationship Identification
The Challenge: Non-Standardized Patient / Clinician / Service Relationship Identification
The Solution: Global Service Relationship Number (GSRN)
What is a Global Service Relationship Number?

The Global Service Relationship Number (GSRN) is a globally unique 18-digit identification code assigned using a GS1 prefix.

- Identifies a business or individual in the context of the service relation, and in this way limits privacy concerns.
- The GSRN can be encoded in a barcode or EPC/RFID tag; for example, in a badge or wristband or on a metering point.
- The GSRN can be electronically used as a “key” in service registers, dossiers, medical files, invoices, and others.
GSRN Examples in Healthcare

Patient Wristband Encoded with a GSRN in a GS1 DataMatrix.

Staff Identification Badge Encoded with a GSRN in a GS1 DataMatrix.
Benefits of Using GSRN

• Automates Positive Patient Identification
  – medication administration at point of care
  – identification of care provider (hospital staff)
  – Increase accuracy of collection, tracking and reporting of pathology samples

• Combined with Service Relation Instance Number (SRIN) enables traceability of services across points of care.
Getting Started
Getting Started

1. **Standards Support** - GS1 Canada – [www.gs1ca.org](http://www.gs1ca.org), T: 416.510.8039 or 1.800.567.7084

2. **Needs Assessment** - Identify current and future state needs.

3. **People, Process, and Technology** - Implement capabilities supported by GS1 standards that enable future state.

4. **Communicate** - Use GS1 standards with your vendors / customers / stakeholders.

5. **Expand** – Extend your use of GS1 standards across other supply chain and clinical workflow processes.
Contact Information

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E info@gs1ca.org

www.gs1ca.org
Join us for our Upcoming Webinars

Thursday November 21st, 2:00 PM EST – Free Member Webinar
Hello From the Other Side: Engaging Clinical Stakeholders in the Procurement Process
**Instructors:** Kyle Shafer, Ray Meyer and Kim Kraeft

Thursday November 28th, 2:00 PM EST – Free Member Webinar
GS1 Classification and Nomenclature
**Instructor:** Rob Bell
[https://hscn.org/event/gs1-webinar-nov-28/](https://hscn.org/event/gs1-webinar-nov-28/)

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