Improving Patient Safety and Supply Chain Efficiency with GS1 Standards in Healthcare
Together, we’re making it possible to follow drugs and medical devices from the manufacturer to the patient, improving efficiency, safety, and patient care.
Improving Patient Safety and Supply Chain Efficiency with GS1 Standards in Healthcare

Challenges Facing the Industry Today

Improving Quality and Performance
Change entire paragraph to: In today’s changing landscape, healthcare providers across the globe must transform their processes to provide value, quality and safe care. They need to work to eliminate waste and inefficiencies; achieve financial sustainability; and leverage information technologies to improve performance. Hospitals are using GS1 standards to ensure the reliability of data and optimise processes to reduce preventable errors, enhance Electronic Health Record management, support outcome-based medicine and comparative effectiveness, and provide transparency for better clinical and supply chain management.

Ensuring Regulatory Compliance
Product serialisation, compliance with the EU Falsified Medicines Directive, FDA and other international drug pedigree requirements such as the Therapeutic Goods Association (TGA) in Australia, and establishing anti-counterfeiting solutions are top of mind for the pharmaceutical industry. The proposed European and US FDA Unique Device Identification (UDI) regulation are at the forefront in the medical device arena as companies need to transform disparate medical identification methods into a standardised UDI system. In both cases, the industry is leveraging GS1 standards and the support of GS1 experts to prepare for these new requirements and ensure regulatory compliance.

“The Victorian Product Catalogue System (VPCS) is a critical key to ensuring data quality and integrity for health product and pricing information. Currently health services run their own catalogues for supply and pharmacy leading to duplication, inefficiencies and lost cost saving opportunities through lack of data visibility at a system-wide level.”
Megan Main, Chief Executive, Health Purchasing Victoria
Moving Forward Together with GS1 Healthcare US

Since 2008, GS1 Healthcare US members have been driving the adoption and implementation of GS1 Standards to improve patient safety and supply chain efficiency. GS1 Healthcare US brings together members from all segments of the industry to address the supply chain issues that most impact healthcare in the United States using GS1 Standards as the foundation for improved business and care delivery processes.

Key focus areas

- Location identification using GS1 Global Location Numbers (GLNs)
- Product identification using GS1 Global Trade Item Numbers (GTINs)
- Product data sharing with GS1 Global Data Synchronization Network™ (GDSN) and the National Product Catalogue (NPC).
- Unique device identification for medical devices
- Product serialisation, track and trace, and compliance with regulation (pharmaceutical and medical devices) using GS1 standards.

Key Benefits

- Improving patient safety
- Lowering costs through increased efficiency
- Reducing medication errors
- Enabling supply chain visibility
- Facilitating effective product recalls
- Tracking of pharmaceutical products/medical devices
- Reducing introduction of counterfeit products
- Enhancing inventory management
- Linking critical product data to the patient record
- Supporting regulatory compliance
- Optimising order, invoice, sales reporting, and chargeback/rebate processes

Patient Safety

Healthcare Supply Chain Efficiency

- Automatic Data Capture
  - Barcodes
  - DataMatrix
  - RFID
- E-Commerce EDI/XML Transactions
- Electronic Record Management
  - e-Records
  - e-Prescriptions
- Assets and Equipment Tracking
  - FDA Unique Device Identification (UDI)
  - Drug Supply Chain Security Act
- Traceability
  - e-Pedigree
  - Recalls

Standardised Location Identification (GLN)
Standardised Product Identification (GTIN)
Standardised Product Definition (GDSN)
Standardisation ➔ Interoperability
GS1 standards for identifying, capturing, and sharing information — about products, business locations, and more — make it possible for companies to speak the same language, connect with each other, and move their business forward.
IDENTIFY
GS1 IDENTIFICATION KEYS

GS1 standards begin with GS1 identification Keys used to uniquely distinguish all products (trade items), logistic units, locations, assets, and relationships across the supply chain from manufacturer to consumer.

These numbers provide the link between the item and the information pertaining to it.

GS1 STANDARDS IN HEALTHCARE

<table>
<thead>
<tr>
<th>COMPANY</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global GS1 Company Prefix</td>
<td>GLN Global Location Number</td>
</tr>
<tr>
<td>GLN Global Location Number</td>
<td>GLN Global Location Number</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>LOGISTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>GTIN Global Trade Item Number</td>
<td>SSCC Serial Shipping Container Code</td>
</tr>
<tr>
<td>EPC® Serialised Global Trade Item Number</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ASSETS</th>
<th>SERVICES</th>
</tr>
</thead>
<tbody>
<tr>
<td>GIAI Global Individual Asset Identifier</td>
<td>GSRN Global Service Relation Number</td>
</tr>
<tr>
<td>GRAI Global Returnable Asset Identifier</td>
<td>GDTI Global Document Type Identifier</td>
</tr>
</tbody>
</table>

TRANSPORT  PALLET  DISTRIBUTION CENTER  TRANSPORT  CASE  ITEM  HEALTHCARE PROVIDER  PATIENT
CAPTURE
GS1 DATA CARRIERS

GS1 System Data Carriers are designed to hold various data elements about products, services, assets, locations and more, in line with industry requirements.

The data encoded in the GS1 System Data Carriers provides unique identification as well as access to additional information, creating visibility throughout the supply chain.

ITEM
BARCODES
Carries a Global Trade Item Number (GTIN)

EAN/UPC*
GS1-128
GS1 DataMatrix
GS1 DataBar™

EPC-ENABLED RFID
Carries a Serialized GTIN (SGTIN)

UHF RFID
HF RFID

Radio Frequency Identification (RFID) tags are read quickly and easily without requiring a line of sight.

*For products that are also sold at retail.
CASE

ITF-14
Carries a GTIN

OR

GS1-128
Carries a GTIN with extended data or a Serial Shipping Container Code (SSCC)

AND

EPC-ENABLED RFID
Carries an SGTIN or an SCCC

PALLE

ITF-14
Carries a GTIN

OR

GS1-128
Carries a GTIN or an SCCC

AND

EPC-ENABLED RFID
Carries an SGTIN or an SCCC

Used to uniquely identify bulk units such as cartons, cases, or pallets and help manage fast and accurate tracking of inventory. This barcode only encodes a GTIN and is not intended to pass through retail point of sale.

This barcode enables the encoding of data in addition to a GTIN including Expiration Date, Batch/Lot and Serial Number, Weight, etc.
SHARE
GS1 INTERFACE STANDARDS FOR ELECTRONIC COMMERCE

MASTER DATA

GDSN
Global Data Synchronisation Network

The GDSN connects trading partners to the GS1 Global Registry via GS1-certified data pools, enabling the immediate electronic sharing of standardised, up-to-date, accurate product information.

GS1 AUSTRALIA GLN REGISTRY

The GLN Registry is the single source of truth for accurate and up-to-date location information for healthcare and healthcare-related facilities in Australia with corresponding GLNs.

TRANSACTIONAL DATA

EDI
Electronic Data Interchange

EDI enables the computer-to-computer exchange of business documents between companies using a standardised format.

PHYSICAL EVENT DATA

EPCIS
Electronic Product Code Information Services

EPCIS is the standard for sharing information about the movement and status of goods in the physical world.

WHAT GOES INTO IT

- GTINs
- Product Descriptions
- Product Classification
- GLN of Brand Owner

GLNs for:
- Ship-To/From
- Bill-To
- Deliver-To

EDI DOCUMENT TYPES

- GTIN
- GLN
- SSCC

WHO
- GLN

WHAT
- GTIN or SSCC

WHERE
- GLN

WHEN
- Date & Time Stamp

WHY
- Business Step & Product Disposition

INTEROPERABILITY

ITEM DATA
LOCATION DATA
PURCHASE ORDER
SHIPPING NOTICE
INVOICE
PRODUCT RECALL/ WITHDRAWAL
PEDIGREE
TRACK & TRACE
Across the supply chain, trading partners are connecting with each other and leveraging the power of information by using GS1 standards as the foundation of their business processes.
**GS1 Standards in Healthcare**

**IDENTIFY**
- GTINs are created for each product (Each level, Shelf-pack level, and Case level)
- Product master data is defined, created, and managed
- Company GLNs are assigned and managed
- Validated customer GLNs are collected and stored

**SHARE**
- Product data is shared through the GDSN
- Data is stored in Enterprise Resource Planning (ERP) system
- Entity/Location data is shared through the GLN Registry for Healthcare
- Electronic Business Document e.g. shipping notices, orders and invoices, containing GLNs, GTINs and SSCCs are exchanged
- GTINs are used for recall process at every level of packaging

**Manufacturer Headquarters**

**GLN** Global Location Number

**LOCATION IDENTIFICATION**

**MANUFACTURER HEADQUARTERS**

**ENTER YOUR PRODUCT DATA**

**BENEFITS**
- Improves order, inventory, and invoice accuracy
- Enables compliance with contractual requirements of customers
### Manufacturer Factory

**IDENTIFY**
- GTINs with extended data (e.g., lot number, expiration date, serial number) are printed on products (barcode and human readable) or tagged for each level, Shelf-pack level, and Case level
- Pallet make up is defined, created, and managed
- SSCCs are created for each pallet and printed on labels

**CAPTURE**
- GTINs are used to track products during manufacturing for internal processes
- GTINs and SSCCs are used to track contents of shipments

**SHARE**
- Manufacturing data (GTIN and extended data) is stored in ERP system
- Order and product information is shared with trading partners using ASNs

**BENEFITS**
- Provides the foundation for patient safety, product traceability, and recalls
- Facilitates accurate tracking of inventory
Manufacturer Distribution Centre

IDENTIFY
- Shipping unit content is barcoded and tracked with SSCC (pallet license plate)

CAPTURE
INBOUND
- GTINs/SSCCs and Advance Ship Notices (ASNs) are used for receipt verification

OUTBOUND
- GTINs are used to assure accuracy of picked products
- GTINs with extended data or SSCCs are used to track shipping unit

SHARE
- ASNs containing GTINs, SSCCs, and GLNs are sent to customers
- Inventory and delivery information is stored in ERP system
- GTINs are used for recall process at every level of packaging

BENEFITS
- Facilitates accurate tracking of sales
- Ensures delivery of the right products to the right locations
- Initiates pedigree
**Healthcare Distributor**

**IDENTIFY**
- Company GLNs are assigned and managed
- Validated customer GLNs are collected and stored

**OUTBOUND**
- Distributor’s SSCCs are created for each pallet shipped

**CAPTURE**

**INBOUND**
- GTINs/SSCCs and ASNs are used for receipt verification
- GTINs are used to put products into inventory

**OUTBOUND**
- Manufacturer assigned GTINs with extended data are used to rotate inventory for quality control processes
- GTINs are used to ensure accuracy of picked products
- SSCCs are used to track shipping unit

**SHARE**
- Entity/Location data is shared through the GLN Registry for Healthcare
- Product data is shared through the GDSN
- Electronic business documents e.g. shipping notices, orders and invoices, containing GLNs, GTINs and SSCCs are exchanged
- ASNs containing GTINs, SSCCs, and GLNs are sent to customers
- Inventory and delivery information is stored in ERP system
- GTINs and batch/lot numbers are used for recall processes

**BENEFITS**
- Ensures delivery of the right products to the right locations
- Improves throughput efficiencies
- Facilitates accurate tracking of sales
Hospital Receiving

IDENTIFY
- GLNs are assigned and managed centrally
- Validated supplier and internal hospital GLNs are collected and stored

CAPTURE
- GTINs/SSCCs are used at the point of receipt to validate delivery accuracy
- GTINs and internal hospital GLNs are used to put products into inventory

SHARE
- ASN is received from supplier
- Inventory and delivery information is stored in ERP system
- GTINs and batch/lot numbers are used for recall processes

BENEFITS
- Improves internal distribution processes
- Reduces accounting costs
- Maintains chain of custody through automated processes
- Provides accurate contract pricing and rebate processing
Hospital Store Room

CAPTURE

INBOUND
• GTINs are used at the point of receipt to validate delivery accuracy
• GTINs are used to put products into inventory

OUTBOUND
• Manufacturer assigned GTINs with extended data are used to rotate inventory, for quality control processes, and to help search for products in hospital’s ERP system
• GTINs are used to pick products for various departments throughout the hospital system

SHARE
• GDSN product data is used to populate the item master file
• GTINs are used to order and track medical devices for use in labs, pharmacies, storage locations, and in-patient care
• GTINs are used to drive inventory replenishment via EDI or paper transactions
• GTINs and batch/lot numbers are used for recall processes

BENEFITS
• Reduces unnecessary inventory levels
• Enhances equipment and instrument tracking
• Improves service levels/fill rates
Patient/operating room GLN is captured
• GTINs with extended data on product packaging are scanned at point of care capturing critical information to enable patient safety, clinical, financial, and supply chain processes
• Products (GTINs with extended data) used in the operating room during the procedure are documented on the patient’s chart

Using GTINs, GLNs and GSRNs data is shared across hospital information systems:
• Inventory Management and Replenishment
• Patient Charge Records
• Electronic Health Record
• Accounting
• GTIN data is tracked from the point of order to the patient
• Allows for final check of recalls, expiration, etc.

BENEFITS
• Improves management of the Electronic Health Record
• Increases accuracy of charge capturing
• Supports patient rights
GS1 Healthcare in Australia

The mission of GS1 Australia is to lead the Healthcare industry to the successful development and implementation of global standards, by bringing together experts in Healthcare to enhance patient safety and supply chain efficiencies.

Now is the time to get involved!

Enquire about the GS1 Australasia Healthcare Workgroups

Become part of one of our workgroups, made up of industry stakeholders working to develop a common approach to GS1 standards adoption through implementation guidelines, business cases, best practices, and education e.g. traceability and hospital implementations.

Get Involved with Industry Readiness Efforts

• Join the GS1 Healthcare User Group Community
• Participate in the National HSE Surgical Instrument Tray Identification
• Attend our serialisation workshops and breakfast briefings
• Complete a GS1 Standards implementation training course.

Start implementing

Visit GS1 Australia website for:

• Information about relevant GS1 standards
• Tools and Resources: User guides, case studies and reports
• Education: Training Courses and Workshops
• Associations, Solution providers and Members
• News and Industry Announcements
• Events and Seminars

www.gs1augs1au.org/healthcare

Contact Us

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About GS1 Australia

GS1 Australia is the leading provider of standards and solutions for over 20 industry sectors. We introduced barcoding to Australia in 1979 and today we enable more than 17,000 member companies, of all sizes, to become more efficient by implementing the GS1 system.

We bring businesses, associations and industries together. This blended community comes to GS1 Australia for advice, networking and solutions to their supply chain challenges. We partner with, and help showcase, members, solution providers and industry leaders to demonstrate and encourage supply chain best practice.

We offer a range of value adding services that support our members through their journey including consulting, solution selection and compliance.

GS1 Australia makes a real and tangible difference to businesses. We are integral to your supply chain success.