



Improving Patient Safety and Supply  
Chain Efficiency with GS1 Standards in

# HEALTHCARE



THE GLOBAL LANGUAGE  
OF BUSINESS



## 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.

## GS1 STANDARDS IN HEALTHCARE

### Challenges Facing the Industry Today

#### IMPROVING QUALITY AND PERFORMANCE

In today's changing landscape, U.S. healthcare providers must transform their delivery systems to provide value, quality, and safe care; 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 optimize 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 margin management.

#### ENSURING REGULATORY COMPLIANCE

The Drug Supply Chain Security Act is top of mind for the pharmaceutical industry. The new FDA Unique Device Identification (UDI) regulation is at the forefront in the medical device arena as companies need to transform disparate medical identification methods into a standardized UDI system. GS1 is an FDA-Accredited Issuing Agency for UDI and GS1 Standards are authorized for use by manufacturers for UDI implementation. On both fronts, the industry is leveraging GS1 Standards and the support of GS1 Healthcare US<sup>®</sup> to prepare for these new requirements and assist with regulatory compliance.



***“Inefficiencies in the [healthcare] supply chain cost the industry billions of dollars each year and the adoption of [GS1] Standards will bring even more value to patients and hospitals.”***

Charles Platt, Director of Contracts & Purchasing  
Medical Center of Central Georgia

## GS1 STANDARDS IN HEALTHCARE

### 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.

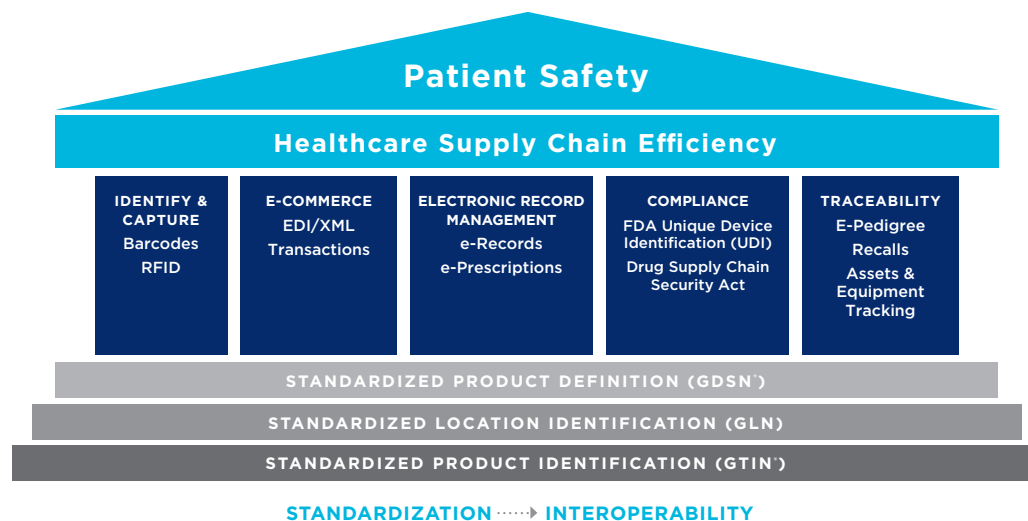
#### KEY FOCUS AREAS

- 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®)
- Unique device identification for medical devices
- Product serialization, track and trace, and drug pedigree processes using GS1 Visibility standards

Get involved! Go to [www.gs1us.org/healthcare](http://www.gs1us.org/healthcare)

#### 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
- Optimizing order, invoice, sales reporting, and chargeback/rebate processes





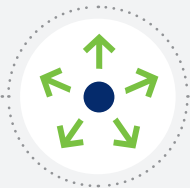
THE GLOBAL LANGUAGE  
OF BUSINESS



IDENTIFY



CAPTURE



SHARE

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 NUMBERS

GS1 Standards begin with GS1 Identification Numbers 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

### COMPANY

**Global GS1 Company Prefix**

**GLN**

Global Location Number

### LOCATION

**GLN**

Global Location Number

### PRODUCT

**GTIN®**

Global Trade Item Number®

**EPC®/SGTIN**

Serialized Global Trade Item Number

### LOGISTICS

**SSCC**

Serial Shipping Container Code

**GSIN**

Global Shipment Identification Number

### ASSETS

**GIAI**

Global Individual Asset Identifier

**GRAI**

Global Returnable Asset Identifier

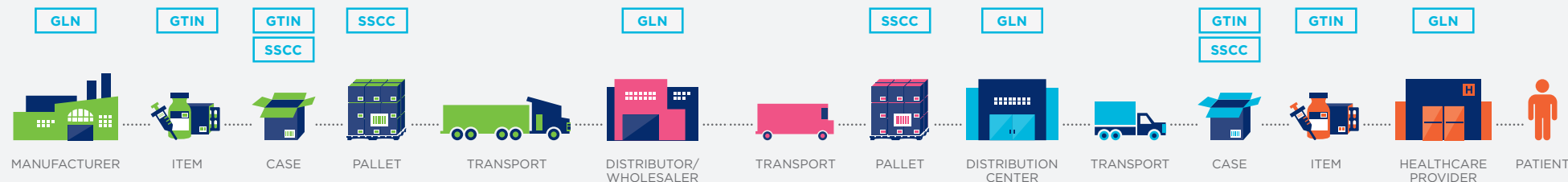
### SERVICES AND OTHER

**GSRN**

Global Service Relation Number

**GDTI**

Global Document Type Identifier





## CAPTURE GS1 DATA CARRIERS

GS1 Data Carriers are capable of holding varying amounts of data to accommodate different needs for different products.

The data encoded in GS1 Data Carriers not only uniquely identifies products at every level of packaging, it provides access to product information and visibility of product movement through the supply chain.



## GS1 STANDARDS IN HEALTHCARE

### ITEM

#### BARCODES

Carries a Global Trade Item Number (GTIN)

EAN/UPC\*



GS1-128



GS1 DataMatrix



GS1 DataBar™



\*For products that are also sold at retail.

### AND (optional)

#### 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 point of sight and carry data that can be added to or modified as the tagged item moves.*

*The EPC (Electronic Product Code) encodes GS1 Identification Numbers like GTINs, GLNs, and SSCCs and allows them to be carried on RFID tags.*

*The appearance of the EPCglobal® Seal is to inform that an EPC-Enabled RFID tag is present on or within the packaging of the product(s).*





## CASE

### ITF-14

Carries a GTIN



*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.*

OR

### GS1-128

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



*This barcode enables the encoding of data in addition to a GTIN including Expiration Date, Batch/Lot and Serial Number, Weight, etc.*

AND (optional)

### EPC-ENABLED RFID

Carries an SGTIN or an SSCC

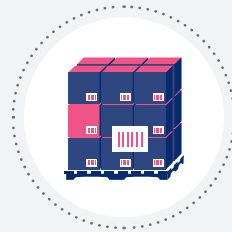
UHF RFID



HF RFID



*The appearance of the EPCglobal Seal is to inform that an EPC-Enabled RFID tag is present on or within the packaging of the product(s).*



## PALLET

### ITF-14

Carries a GTIN



OR

### GS1-128

Carries a GTIN or an SSCC



AND (optional)

### EPC-ENABLED RFID

Carries an SGTIN or an SSCC

UHF RFID



HF RFID



*The appearance of the EPCglobal Seal is to inform that an EPC-Enabled RFID tag is present on or within the packaging of the product(s).*





# SHARE

## GS1 DATA EXCHANGE

### MASTER DATA

#### GDSN

Global Data Synchronization Network

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

#### 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 the U.S. with corresponding GLNs.

### WHAT GOES INTO IT

#### GTINs

Product Descriptions  
Product Classification  
GLN of Brand Owner

#### GLNs for:

- Ship-To/From
- Bill-To
- Deliver-To

## GS1 STANDARDS IN HEALTHCARE

### TRANSACTIONAL DATA

#### EDI

Electronic Data Interchange

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

### WHAT GOES INTO IT

GTIN  
GLN  
SSCC

### EDI DOCUMENT TYPES

Purchase Order  
Advance Ship Notice  
Invoice  
Payment

### PHYSICAL EVENT DATA

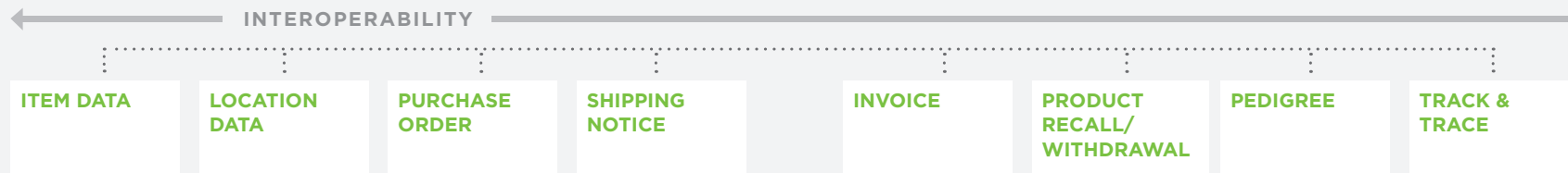
#### EPCIS

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

Who	GLN
What	GTIN or SSCC
Where	GLN
When	Date & Time Stamp
Why	Business Step & Product Disposition





## GS1 STANDARDS IN HEALTHCARE

**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.

#### LOCATION IDENTIFICATION

GLN Global Location Number  
061414100005

#### MANUFACTURER HEADQUARTERS



ENTER YOUR  
PRODUCT DATA

00614141987658

SEND

## Manufacturer Headquarters

### 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

- EDI processes are synchronized with GLN and GTIN
- Entity/Location data is shared through the GLN Registry
- Product data is shared through the GDSN
- Orders are managed
- Data is stored in Enterprise Resource Planning (ERP) system
- GTINs are used for recall process at every level of packaging

### BENEFITS

*Improves order,  
inventory, and  
invoice accuracy*

*Enables compliance  
with contractual  
requirements of  
customers*

#### LOCATION IDENTIFICATION

GLN Global Location Number  
0614141000029



## Manufacturer Factory

### IDENTIFY

- Pallet makeup is defined, created, and managed
- SSCCs are created for each pallet shipped

### CAPTURE

- 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
- SSCCs are printed on shipping labels
- GTINs are used to track products during manufacturing for internal processes
- GTINs and SSCCs are used to track contents of shipments

### SHARE

- Production order and GTINs are pulled from ERP system
- Manufacturing data (GTIN and extended data) is stored in ERP system

### BENEFITS

*Provides the foundation  
for patient safety, product  
traceability, and recalls*

*Facilitates accurate  
tracking of inventory*



## Manufacturer Distribution Center

### 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

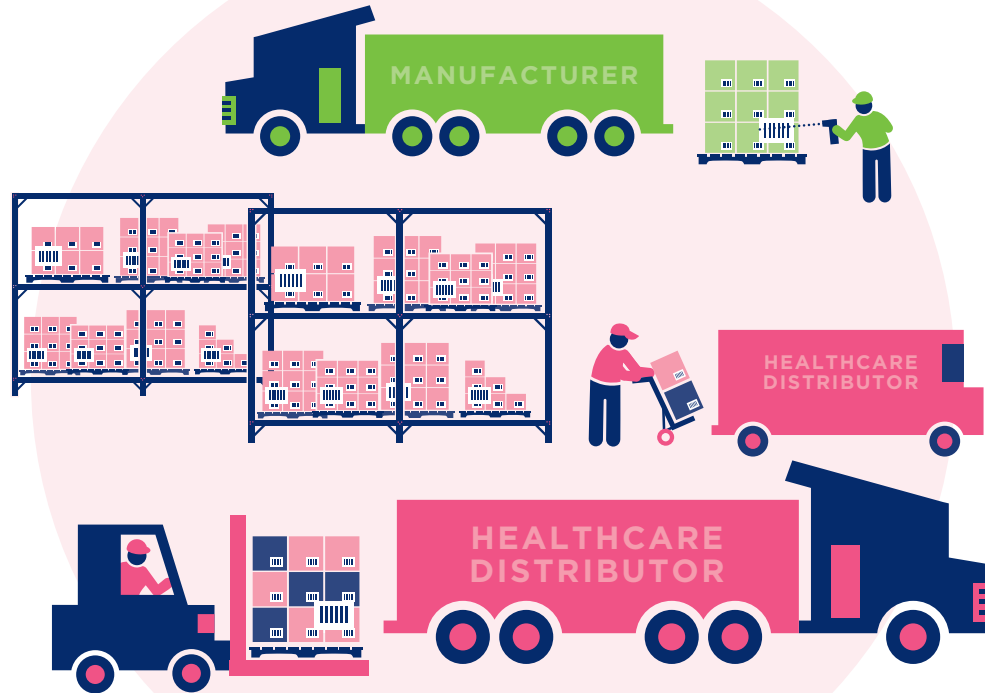
*Facilitates accurate tracking of sales*

*Ensures delivery of the right products to the right locations*

*Initiates pedigree*

#### LOCATION IDENTIFICATION

GLN Global Location Number  
1100003974533



## 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
- Product data is shared through the GDSN
- EDI processes are synchronized with GLN and GTIN
- 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

*Ensures delivery of  
the right products to  
the right locations*

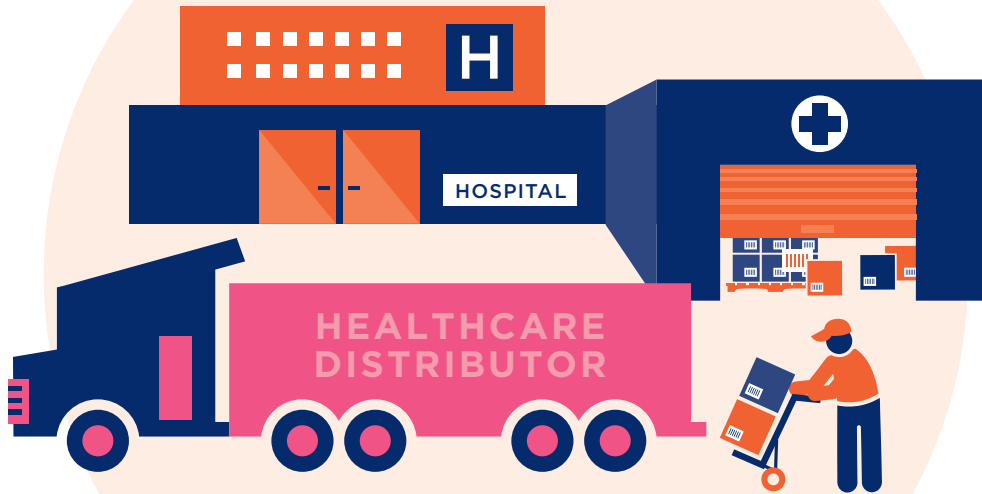
*Improves throughput  
efficiencies*

*Facilitates accurate  
tracking of sales*

#### LOCATION IDENTIFICATION

GLN Global Location Number

0123456000001



## Hospital Receiving

### IDENTIFY

- GLNs are assigned and managed at Corporate
- 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 are used for recall process at every level of packaging

### 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 MMIS system
- GTINs are used to pick products for various departments throughout the hospital system

### SHARE

- GTINs are used to order and track medical devices for use in labs, pharmacies, storage locations, and in-patient care
- GDSN product data is used to populate the item master file
- GTINs are used to drive inventory replenishment via EDI or paper transactions
- GTINs are used for recall process at every level of packaging

#### BENEFITS

*Reduces  
unnecessary  
inventory levels*

*Enhances  
equipment and  
instrument tracking*

*Improves service  
levels/fill rates*

**GLN** Global Location Number  
0345679000006



## CAPTURE

- 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

## SHARE

- 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 STANDARDS IN HEALTHCARE

### GS1 Healthcare US

## Now is the time to get involved!

### Become a Member of GS1 Healthcare US

As a member of GS1 Healthcare US, you will play an active role in driving adoption and use of GS1 Standards in the U.S. by working with other industry members through community groups, workgroups, and task groups to improve patient safety and supply chain efficiency.

### GS1 Healthcare US Community Groups

The GS1 Healthcare US Community Groups provide a member-only forum to facilitate standards-related discussions and address the impact of standards on specific communities, business practices, legislation or regulation, and opportunities for standards usage.

- **Healthcare Provider Community Group**
- **Medical Device Community Group**
- **Pharmaceutical Community Group**

### GS1 Healthcare US Workgroups And Task Forces

Members may also participate in our targeted workgroups and task forces to develop implementation guidelines, business cases, roadmaps, best practice guides, and education to enable industry-wide adoption.



### GET STARTED TODAY

Visit the GS1 US website for:

- Industry Sunrise Dates and Scorecards
- Information about GS1 Standards
- FDA UDI and Drug Supply Chain Security Act Support
- Tools and Resources: Tool Kits, Implementation Resources, and Case Studies
- Education: Webinars and Industry Calls
- Members, Advocates, and Partners
- Events: Workshops and Workgroup Forums

**[www.gs1us.org/healthcare](http://www.gs1us.org/healthcare)**

### CONTACT US

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**CONTACT US TO FIND OUT HOW GS1 US  
CAN HELP MOVE YOUR BUSINESS FORWARD.**



**THE GLOBAL LANGUAGE  
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