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## Healthcare

# Guidance for Implementing GLNs and GTINs in Order-to-Cash Transactions

EDI Transactions 850, 855, 856, 810, and 820

Developed by the GS1 Healthcare US EDI Implementation Workgroup

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## About GS1 Healthcare US

GS1 Healthcare US® is an industry group that focuses on driving the adoption and implementation of GS1 Standards in the healthcare industry in the United States to improve patient safety and supply chain efficiency. GS1 Healthcare US brings together members from all segments of the healthcare industry to address the supply chain issues that most impact healthcare in the United States. Facilitated by GS1 US, GS1 Healthcare US is one of over 30 local GS1 Healthcare user groups around the world that supports the adoption and implementation of global standards developed by GS1.

## Log of Changes

| Release Number – Date          | Change                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>R1.0 – Feb 26, 2018</b>     | Release/publication                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>R1.1 – April 16, 2020</b>   | <ul style="list-style-type: none"> <li>Section 1: Updates throughout; Added <ul style="list-style-type: none"> <li>1.2 Scope</li> <li>1.3 References</li> </ul> </li> <li>Section 3: Updates throughout; Added <ul style="list-style-type: none"> <li>3.3 Product and Party/Location Identification</li> </ul> </li> <li>Section 4: Updates throughout; Added <ul style="list-style-type: none"> <li>4.4-1 Figure: Process Flow for Implementation Preparation</li> <li>4.1 Assess readiness to transact with GTIN and GLN</li> <li>Define implementation/migration strategy</li> </ul> </li> <li>Section 5: Updates throughout; Added <ul style="list-style-type: none"> <li>5.1 Product Hierarchies</li> </ul> </li> <li>Section 6: Updates throughout; Added <ul style="list-style-type: none"> <li>6.1.2 GTIN</li> <li>6.6-1 Table: Use with EDI 850 Purchase Order</li> <li>6.6-2 Table: Use with EDI 855 Purchase Order Acknowledgement</li> <li>6.6-3 Table: Use with EDI 856 Advance Ship Notice/Manifest</li> <li>6.6-4 Table: Use with EDI 810 Invoice</li> <li>6.6 820 Payment Order/Remittance Advice</li> <li>6.6-5 Table: Use with EDI 820 Payment Order/Remittance Advice</li> <li>6.6-7 Figure: Example of Transaction Lines Using GLN</li> </ul> </li> <li>Section 7: Updates throughout; Added</li> </ul> |
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## 1 Introduction

When identification standards are not widely used across an industry, trading partners often use non-standard and proprietary identifiers. This practice can result in multiple identifiers for the same product (e.g., buyer's part number; supplier's catalog number; vendor's item number; etc.) or party/location (e.g., DUNS Number; Drug Enforcement Administration (DEA) number; buyer account number; etc.). Although this was the historical approach in U.S. healthcare, regulatory and industry efforts leveraging GS1 Standards provide the opportunity for U.S. healthcare organizations to streamline and standardize product identification with the GS1 Global Trade Item Number® (GTIN®) and party/location identification with the GS1 Global Location Number (GLN).

GTIN and GLN provide a single, globally-unique, standards-based identifier that all trading partners can use to identify a product or party/location in all supply chain transactions and communications. Trading partners use these standards-based identifiers instead of proprietary identifiers to help improve efficiency and drive process improvement efforts. One of those efforts is the use of GTIN and GLN in electronic data interchange (EDI). Using GTINs and GLNs in EDI business messaging instead of proprietary identifiers can help improve transaction accuracy and efficiency, and more fully support traceability from the manufacturer to the patient / end user.

EDI transaction standards support numerous types of identifiers for products and parties/locations, including both GS1 identifiers (i.e., GTIN; GLN) and Non-GS1 identifiers (e.g., Buyer Item Number; Vendor Catalog Number; DUNS; etc.). However, the use of multiple and/or non-standard identifiers can undermine the accuracy of business transactions and the effectiveness of supply chain management efforts. Using GS1 standards-based identifiers (i.e., GTIN and GLN) in their EDI transactions instead of proprietary identifiers streamlines and aligns product and party/location identification, helping to reduce complexity and improve accuracy.

Therefore, the GS1 Healthcare US® EDI Implementation Workgroup ("the Workgroup") developed this document to support the implementation of GTIN and GLN in EDI business messages in U.S. healthcare supply chains. To that end, this document provides guidance for implementing GTIN and GLN in EDI Order-to-Cash transactions in U.S. healthcare.



**Important:** As with all GS1 Standards and solutions, this guidance is voluntary, not mandatory. It should be noted that use of the words "must" and "require" throughout this document relate exclusively to technical recommendations for the proper application of the standards to support the integrity of your implementation.

### 1.1 Document Purpose

The purpose of this document is to provide guidance for implementing GTIN and GLN in EDI Order-to-Cash transactions from Purchase Order to Payment (with particular emphasis on EDI X12 transactions).

### 1.2 Scope

This document provides guidance for the following Order-to-Cash transactions:

- 850 Purchase Order
- 855 Purchase Order Acknowledgement
- 856 Ship Notice/Manifest (Advanced Ship Notice)
- 810 Invoice
- 820 Payment Order/Remittance Advice

For more information, user is encouraged to reference EDI X12 Guidelines, provided by your trading partners

### 1.3 References

- [\*Business Process Guide for Electronic Data Interchange - Version 7030\*](#)
- [\*GS1 General Specifications\*](#)

## 2 RACI Chart

Implementing GTIN and GLN in Order-to-Cash transactions is a collaborative process where each trading partner has a role to play. The table below presents a summary of key efforts, including which entity is **responsible, accountable, consulted, and/or informed (RACI)**.

- R = Responsible**
  - Those who do work to achieve the task
  - There can be multiple Responsible resources
- A = Accountable**
  - Resource ultimately accountable for completion of the task and/or approval of the work product
  - There must be exactly one “A” specified for each task within each action step
- C = Consulted**
  - Those whose opinions are sought
  - Two-way communication
- I = Informed**
  - Those that are kept up-to-date on progress
  - One-way communication

**Table 2-1** RACI Chart for Implementing GLNs and GTINs in Order-to-Cash Transactions

| Action step                                                       | Key Best Practice Recommendation(s)                                                                                                                                                                                                                                    | Buyer | Sellers | Solution Provider | GPO |
|-------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|---------|-------------------|-----|
| Agree on flow of transactions                                     | <ul style="list-style-type: none"> <li>Process flow agreed upon by the parties based on the transactions and segment qualifiers they agree to execute. (<i>Agreeing on what the standards should be based on the transactions your system can support.</i>)</li> </ul> | R,I   | R,I     | C                 | I   |
| Align hierarchies for products and accounts                       | Align product hierarchy from all available unit of sale to applicable systems (e.g., EMR, MMIS, WHS, etc.)                                                                                                                                                             | I     | R,A     | C                 | I   |
|                                                                   | Align customer/vendor/account hierarchy from billing, inventory and delivery locations (e.g. EMR, MMIS, etc.)                                                                                                                                                          | R,A   | R       | C                 | I,C |
| Cross-reference other product and location identifiers to be used | Define quality data management processes for transformation of proprietary numbers                                                                                                                                                                                     | R,A   | R       | C                 | I   |
|                                                                   | Develop change management processes (e.g., data stewardship; communications; etc.)                                                                                                                                                                                     | R     | R,A     | R                 | R   |
| Assess readiness to transact                                      | Validate system and trading partners capabilities, including data communications                                                                                                                                                                                       | R,A   | R       | R                 | R   |
|                                                                   | Define business transactions                                                                                                                                                                                                                                           | R,A   | R       | R                 | R   |
| Prepare to use GLN and GTIN in EDI transactions                   | Identify targeted trading partners                                                                                                                                                                                                                                     | R     | R,A     | C,I               | I   |
|                                                                   | Review current capabilities of maps and/or solution providers used by all parties                                                                                                                                                                                      | R,A   | R       | C                 | I   |
|                                                                   | Gap analysis based on findings                                                                                                                                                                                                                                         | R     | R,A     | C                 | I   |
|                                                                   | Update maps, interfaces, test, and go-live                                                                                                                                                                                                                             | R,A   | R,C     | C,I               | I   |
| Source item data                                                  | Identify the data pool or the ability to pull the data                                                                                                                                                                                                                 | R,A   | R       | C                 | I   |
|                                                                   | Determine the data pool used to register product with GDSN                                                                                                                                                                                                             | R,A   | R       | C                 | I   |
| Prepare for implementation                                        | Defined internal resources and establish program team                                                                                                                                                                                                                  | R     | R,A     | I                 | I   |
|                                                                   | Identify GAPS in the internal system                                                                                                                                                                                                                                   | R     | R,A     |                   |     |
|                                                                   | Establish technology baseline                                                                                                                                                                                                                                          | R     | R,A     | R                 | I   |
|                                                                   | Understand current map capabilities (ASC-X12 EDI Guideline & Version)                                                                                                                                                                                                  | R     | R,A     | R,C               | N/A |

### 3 Order-to-Cash Transactions in U.S. Healthcare

Using GTINs and GLNs in EDI business messaging instead of proprietary identifiers can help improve transaction accuracy and efficiency, and more fully support traceability from the manufacturer to the patient / end user. This chapter describes key aspects of Order-to-Cash transactions in U.S. healthcare.

#### 3.1 Transaction Descriptions

**Table 3-1** Order-to-Cash Transactions

| Transaction                                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 850 Purchase Order                              | Used by the buyer to advise the seller or broker of a request for the delivery of product. Also used by the broker to communicate the buyer's request for product to the seller. Used to express purchase order information for receiving locations, and may also be used to express distribution requirements for receiving location(s), such as in cross-dock and/or drop-ship environments. A PO may be an original order, or it may be a confirmation of an order already communicated to the seller or broker by other means. |
| 855 Purchase Order Acknowledgement              | Used by the seller or broker to confirm buyer purchase orders or to notify the buyer of corrections and/or seller-initiated changes to a previously transmitted purchase order. It contains all information normally associated with a purchase order (e.g., receiving location, shipping date, and the products and quantities to be shipped). In addition, the seller or broker may furnish optional information such as product pricing, allowances and charges, and payment terms.                                             |
| 856 Ship Notice/Manifest (Advanced Ship Notice) | Used by either the seller or public warehouse to advise the buyer of shipment information. In addition, it may also be used by a seller to notify a public warehouse when a shipment of product is made from the seller's plant or producing location or from another public warehouse. Exchange of information is accomplished using a flexible data structure to report information.                                                                                                                                             |
| 810 Invoice                                     | Used by the supplier to bill the buyer for products and services provided. It allows a buyer to record payment-request information and automatically update applicable systems. The data contained in the business message provides automated cross-referencing of purchase order and receiving data.                                                                                                                                                                                                                              |
| 820 Payment Order/Remittance Advice             | Used to communicate remittance information and/or to initiate a payment. It is used by the buyer (payer) to notify the seller (payee) of payment of an invoice or invoices. In addition, it can be used by the seller to notify the buyer of payment of an invoice for coupons redeemed, product reclamation, or a credit due the buyer or payment for promotion performance.                                                                                                                                                      |

#### 3.2 Transaction Process Flow

The diagram shown below illustrates a general process flow for EDI Order-to-Cash transactions, starting with Purchase Order and ending with Remittance Advice. However, individual companies and trading partners select the transactions and process flow which best suits their needs.



**Figure 3-1** General Order-to-Cash Transaction Process Flow



### 3.3 Product and Party / Location Identification

EDI transaction standards support numerous types of identifiers for products and parties/locations, including both GS1 identifiers and Non-GS1 identifiers. The following tables list product identifiers and party/location identifiers that are commonly used in U.S. healthcare EDI transactions today.

**Table 3-2** Product identifiers commonly used in U.S. healthcare EDI transactions

| Commonly Used Product Identifiers    | Associated EDI Qualifier |
|--------------------------------------|--------------------------|
| Buyer's Part Number                  | BP                       |
| Buyer's Catalog Number               | CB                       |
| Buyer's Item Number                  | IN                       |
| Lot Number                           | LT                       |
| Manufacturer's Part Number           | MG                       |
| National Drug Code in 5-4-1 Format   | N3                       |
| National Drug Code in 5-4-2 Format   | N4                       |
| National Drug Code (NDC)             | ND                       |
| Purchaser's Item Code                | PI                       |
| U.P.C./EAN Case Code (2-5-5)         | UA                       |
| U.P.C. Consumer Package Code (1-5-5) | UI                       |
| GTIN-14                              | UK                       |
| U.P.C. Case Code Number (1-1-5-5)    | UN                       |
| GTIN-12                              | UP                       |
| Vendor's (Seller's) Catalog Number   | VC                       |
| Vendor's (Seller's) Item Number      | VN                       |

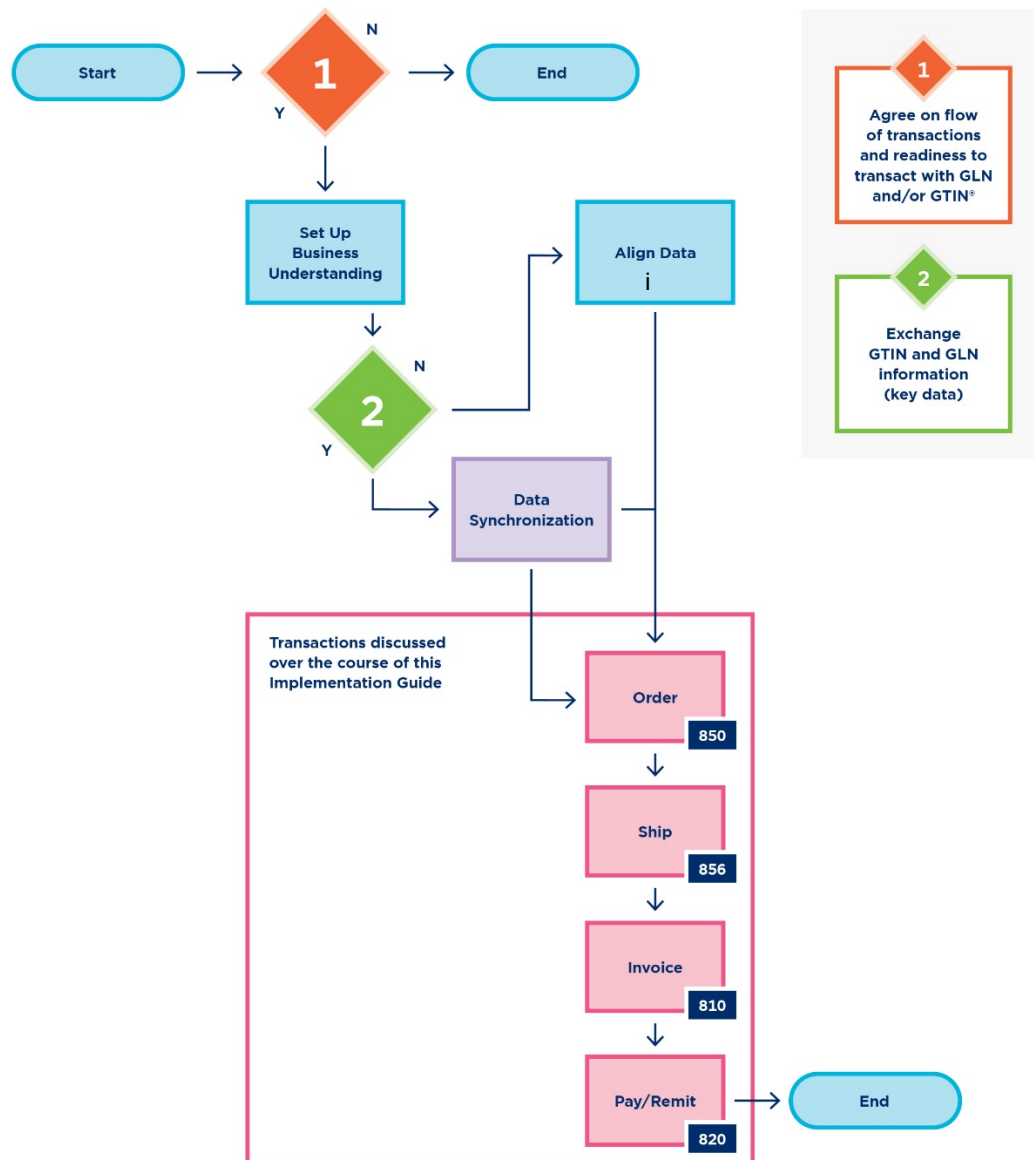
**Table 3-3** Party/location identifiers commonly used in U.S. healthcare EDI transactions

| Commonly Used Party/Location Identifiers     | Associated EDI Qualifier |
|----------------------------------------------|--------------------------|
| DUNS Number (Dun & Bradstreet)               | 1                        |
| DUNS+4 (DUNS Number with 4 Character Suffix) | 9                        |
| Drug Enforcement Administration (DEA)        | 11                       |
| Health Industry Number (HIN)                 | 21                       |
| Assigned by Seller or Seller's Agent         | 91                       |
| Assigned by Buyer or Buyer's Agent           | 92                       |
| Global Location Number (GLN)                 | UL                       |

## 4 Prepare for Implementation

Prior to implementation, it is essential to assess the effort needed to implement GTINs and GLNs in current systems and transactions. Key aspects of this effort include assessing internal systems, engaging with trading partners about readiness, and determining the transactions in which GTINs and GLNs are to be used. In addition, trading partners preparing to exchange EDI transactions which include GLN and GTIN may need to undertake other efforts like the exchange of GTIN and GLN data to lay the foundation for using GTIN and GLN in EDI transactions.

**Figure 4-1** Process Flow for Implementation Preparation



## 4.1 Assess readiness to transact with GTIN and GLN

The first step in preparing for implementation of GTIN and GLN in EDI transactions is to assess both your own readiness and your trading partners' readiness in terms of current state of GTIN and GLN implementation (i.e., have suppliers assigned GTINs to their products; have trading partners assigned GLNs to their parties and locations; etc.), as well as system capabilities.

- Understand and agree-to ASC X12 EDI standard, guidelines and versions to be implemented
- Identify gaps in your internal system to establish technology baseline.
- Review current capabilities and/or solution providers used by all parties.
- Communicate with trading partners to obtain information about their current GTIN and GLN implementation state, and readiness to transact with GTIN and GLN.
- If both buyer and seller have assigned a GLN to a location (e.g., a 3<sup>rd</sup> party warehouse) that has not yet implemented GLNs itself, determine which GLN will be used in transactions.
- Determine if the buyer segregates POs by GLN (either deliver-to or ship-to). See the Ship to-Mark section 8.2 for additional delivery process information.

## 4.2 Agree on flow of transactions

- Define business transactions in which to use GTIN and/or GLN.
- Define a process flow agreed upon by the parties based on the transactions and segment qualifiers the parties agree to execute.
- Trading partners preparing to exchange EDI transactions inclusive of GLN and GTIN should be prepared to engage EDI transactions which may be outside of their initial scope to accommodate their trading partners.

## 4.3 Define implementation / migration strategy

EDI transaction standards support numerous types of identifiers for products and parties/locations, including both GS1 identifiers and Non-GS1 identifiers. Because GTIN and GLN are global identification standards that can be used by all trading partners, implementing GTIN and GLN in EDI transactions instead of proprietary identifiers provides the opportunity to simplify product and party/location identification. Nonetheless, trading partners need to define their own implementation strategy for using GTIN and GLN in transactions.

There are two basic strategies for companies implementing the standards:

1. Replace Non-GS1 identifiers with GLN and GTIN
2. Use GLN and GTIN alongside Non-GS1 identifiers

Replacing Non-GS1 identifiers with GTINs and GLNs will require a more coordinated effort between trading partners in order to assure alignment and accuracy. Often, replacement reveals identifiers within both parties' enterprise systems which may not have been previously exchanged. Even if the goal is replacement, accommodations should be made within the internal systems to support several identifiers (GS1 and Non-GS1) in order to support a smooth changeover. The fact that GTINs and GLNs can be implemented in transactions alongside Non-GS1 identifiers supports such a transition or migration to a single identifier.

## 4.4 Source GTIN and GLN data

Trading partners preparing to exchange EDI transactions which include GTIN and GLN will need to undertake efforts to exchange GTIN and GLN data to lay the foundation for using GTIN and GLN in EDI transactions.

### Product Data

- Determine the appropriate level for the exchange of GTIN information relative to the business process being undertaken during the transformation process.
- Determine the source data pool in the GS1 Global Data Synchronization Network™ (GDSN®).
- Engage a GDSN-certified data pool or work internally on the ability to pull the data.

### Party / Location Data

- Agree on the scope of the GLN data to be exchanged.
- Establish the appropriate mechanism for the exchange of this information (e.g., EDI or GS1 US Data Hub | Location).
- If the exchange will be done via EDI, all trading partners will need to understand the exact segments and format of the information.
- If the exchange will be done via GS1 US Data Hub | Location, determine if the GLNs and associated data have been validated within Data Hub | Location.
- Compare newly exchanged data to the previous method of data exchange to validate that all partners are receiving accurate data.
- The attributes of the party/location associated with a GLN should ideally be established as part of master data management using the GLN as the key to the information.

## 5 Transition Product & Account Hierarchies

### 5.1 Product hierarchies

GTINs are globally unique identifiers for “trade items” (i.e., any item that may be priced, ordered, or invoiced at any point in any supply chain). When goods are traded between trading partners, various packaging levels can be involved depending on the type of product and the extent of exchange. Some products may have only one packaging level (e.g., implants). Other products may have several packaging levels. While many sectors typically have three packaging levels (i.e., each, case, and pallet), there are often a large number of packaging levels found in U.S. healthcare. For example:

- Primary packaging (e.g., blisters with tablets/syringes in sterile packaging)
- Secondary packaging (e.g., box of two blisters/with 10 packed syringes)
- Multipacks (e.g., 7 boxes)
- Case (e.g., 3 multipacks)
- Pallet (e.g., 24 cases)

A GTIN needs to be assigned to each packaging level at which a product is traded between sellers (e.g., manufacturers, distributors, and group purchasing organizations (GPOs)) and buyers (e.g., distributors, GPOs, and hospitals) within the context of traditional EDI transactions. The figure below illustrates how a unique GTIN is assigned to the bottle, homogeneous case (i.e., 6 bottles), and the pallet (i.e., 18 cases).

**Figure 5-1**



**Guidance for efficient process management:**

- All levels of the packaging hierarchy should be identified with a GTIN.
- For inventory management, it is essential that the different levels of the packaging hierarchy are known in the system so that conversion factors or minimum stock levels can be defined.
- It is critical to understand not only how the GTINs being exchanged relate to the items and hierarchies, but also the capabilities of trading partners to use GTIN for each applicable transaction type (e.g., purchase orders, invoicing, rebate/sales tracing, payment remittance, etc.)
- Align your product hierarchy from all available units of sale to applicable systems (e.g., EMR, MMIS, WHS, etc.).
- Identify the preferred/default Unit of Measure (UoM) for ordering and determine whether conversions from other UoMs will occur on the buyer's side before the PO quantity is calculated or on the seller's side once the order is received.
  - If on the seller's side, determine how the buyer may override default conversions if a non-default order UoM is truly required.
  - If UoM can be converted/overridden by the seller, the buyer should have mechanisms in place to adjust their receiving and invoicing to the converted UoM.
- Confirm within the trading partner relationship how GTINs relate to existing product numbers.
- Cross-reference other product identifiers used throughout the system.
- Determine if the cross-references have been validated against the GDSN or another mechanism such as EDI.

## 5.2 Account hierarchies (parties and locations)

GLNs are designed to support unique and unambiguous identification of parties/locations in business processes, which is essential for efficient communication between trading partners. The GLN can be used to identify a functional entity (like a hospital pharmacy or accounting department), a physical location (like a warehouse or hospital wing or even a nursing station), or a legal entity (like a health system corporation).

**Guidance for efficient process management:**

- Confirm the locations and roles that will use GLNs (e.g., Bill-to; Ship-to; etc.), and the relationship of those GLNs to existing account numbers.
  - If there are multiple locations to which a shipment will be sent (e.g., cross-docking), work with the seller to identify which GLN(s) will be sent as part of each transaction and in what order. Note that if GLNs are used in the 810 or 820 to specify location-specific payment terms, these locations must propagate from the buyer's MMIS to the AP systems.
  - Example 1: A seller can only accept a single GLN as part of their EDI transaction set. Should the GLN sent by the buyer be a Ship-to or Deliver-to? If the buyer has a dock facility, they may wish the GLN to be the Ship-to and the buyer can deliver internally based on other information. If the buyer wishes delivery directly to a suite, they may furnish the Deliver-to GLN.
  - Example 2: A buyer seeks delivery to a cross-dock location, from which the package will be sent to a loading dock at another facility and finally to a suite. There are potentially three GLNs that are part of the delivery transaction: two Ship-to's (cross-dock and clinic) and one Deliver-to (suite).
- It is critical to understand not only how the GLNs being exchanged relate to the organizations, but also the capabilities of trading partners to exchange a GLN for each applicable transaction type (e.g., purchase orders, invoicing, rebate/sales tracing, payment remittance, etc.).

- Align your customer/vendor account hierarchy from billing, inventory, and delivery locations (e.g., EMR, MMIS, WHS, etc.).
- Cross-reference other account/party/location identifiers used throughout the system.
- Determine if the cross-references have been validated against within GS1 US Data Hub | Location or another mechanism such as EDI.

## 6 Map Use of GTIN & GLN in Order-to-Cash Transactions

### 6.1 Mapping Overview

This section describes the high-level approach to mapping GTINs and GLNs in Order-to-Cash transactions to either replace or transition away from proprietary identifiers. The remainder of this chapter provides specific guidance for each transaction individually following this high level approach.

#### 6.1.1 GLN

The use of GLN in a transaction will occur in the **N1** loop. The **N1** loop is used to identify organizational entities associated with the transaction. The **N1** loop can be repeated to add more than one entity, and/or more than one identifier per entity. The **N1** loop is comprised of the following segments:

**Figure 6-1** Segments in the N1 Loop

| N1 Loop |                                                                                                                                                         |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| N1      | name segment                                                                                                                                            |
| N101    | entity identifier code to define role (e.g., BT = <i>Bill to</i> ; ST = <i>Ship to</i> ; BY = <i>Buying Party</i> ; etc.)                               |
| N102    | name of the party                                                                                                                                       |
| N103    | data qualifier specifying the type of identifier/number being used in <b>N104</b> (e.g., UL = GLN; 21 = DEA; 91 = Seller Assigned; 92 = Buyer Assigned) |
| N104    | identifier value                                                                                                                                        |

As shown, the **N103** field is a data qualifier that defines the type of identifier being used in the **N104** field. The data qualifier for GLN is “UL.”

**Figure 6-2** Example of EDI Mapping for Ship-to GLN

| N1 Loop = N1*ST*EYE INSTITUTE OF NW OHIO*UL*1100005210000 |                          |                           |
|-----------------------------------------------------------|--------------------------|---------------------------|
| N101                                                      | ST                       | (Ship-to)                 |
| N102                                                      | EYE INSTITUTE OF NW OHIO | (Name)                    |
| N103                                                      | UL                       | (Data qualifier for GLNs) |
| N104                                                      | 1100005210000            | (GLN)                     |

- **To replace Non-GS1 identifiers with GLN:** for each **N101** entity identifier code, populate **N103** with “UL” and **N104** with the GLN (replacing any other identifier that may have previously been used).
- **To implement GLN alongside Non-GS1 identifiers:** repeat the loop for each **N101** entity identifier code, this time populating **N103** with “UL” and **N104** with the GLN to add the GLN to any other identifiers that are used for that entity.

## 6.1.2 GTIN

The use of GTIN in a transaction will occur in segments where the *Product/Service ID Qualifier* (Code List 235) is used. For example, in 850 Purchase Order:

- In the **PO106** Code List 235 Product/Service ID Qualifier, where the **UK** qualifier = GTIN-14<sup>1</sup>
- In the **PO106** Code list 235 Product/Service ID Qualifier, where the **UP** qualifier = GTIN-12
- Use of the UK and UP qualifiers applies to all occurrences of data element 235 Product/Service ID Qualifier in the PO1 segment.

## 6.2 850 Purchase Order



**Note:** See [Appendix A](#) for example transactions for specific types of POs (e.g., direct ship; ship to mark; consignment; etc.)

### 6.2.1 Defined Areas of Impact

**Table 6-1** Use with EDI 850 Purchase Order

| GS1 Identifier | Qualifier, Segments and Elements                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| GTIN           | <ul style="list-style-type: none"> <li>■ In the <b>PO106</b> Code List 235 Product/Service ID Qualifier, where the <b>UK</b> qualifier = GTIN-14</li> <li>■ In the <b>PO106</b> Code List 235 Product/Service ID Qualifier, where the <b>UP</b> qualifier = GTIN-12</li> <li>■ Use of the UK and UP qualifiers applies to all occurrences of data element 235 Product/Service ID Qualifier in the PO1 segment.</li> </ul> |
| GLN            | <ul style="list-style-type: none"> <li>■ In the <b>N103</b> Code List 66 Identification Code Qualifier, where the <b>UL</b> qualifier = GLN</li> <li>■ In the <b>SDQ02</b> Code List 66 Identification Code Qualifier, where the <b>UL</b> qualifier = GLN</li> </ul>                                                                                                                                                     |

### 6.2.2 Example of Transaction Lines Using GLN and GTIN

**Figure 6-3**

|   |                                                    |
|---|----------------------------------------------------|
| 1 | ST*850*0000001~                                    |
| 2 | BEG*00*SA*PONumber**20210314~                      |
| 3 | N1*SE**92*SellingPartyIdentityNumber~              |
| 4 | N1*SE**UL*GlobalLocationNumber~                    |
| 5 | N1*BS*CompanyName*21*HealthIndustryNumber~         |
| 6 | N1*BS*CompanyName*UL*GlobalLocationNumber~         |
| 7 | PO1*1*43*EA*23.57**UK*GTIN-14*ND*NationalDrugCode~ |
| 8 | CCT*1~                                             |
| 9 | SE*9*0000001~                                      |



**Note:** The NDC qualifier data elements apply to pharmaceutical products. If your product does not have an assigned NDC by the U.S. FDA or, if you do not wish to transmit this information, these data elements can be ignored.

<sup>1</sup> The reference here is to a true GTIN-14 (i.e., GTIN assigned as 14-digits) and not a "GTIN-12 in 14-digit format" (i.e., GTIN assigned as 12 digits and padded with leading zeros to total 14-digits).



## 6.3 855 Purchase Order Acknowledgement

### 6.3.1 Defined Areas of Impact

**Table 6-2** Use with EDI 855 Purchase Order Acknowledgement

| GS1 Identifier | Qualifier, Segments and Elements                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| GTIN           | <ul style="list-style-type: none"> <li>In the <b>PO106</b> Code List 235 Product/Service ID Qualifier, where the <b>UK</b> qualifier = GTIN-14</li> <li>In the <b>PO106</b> Code List 235 Product/Service ID Qualifier, where the <b>UP</b> qualifier = GTIN-12</li> <li>Use of the UK and UP qualifiers applies to all occurrences of data element 235 Product/Service ID Qualifier in the PO1 segment.</li> </ul> |
| GLN            | <ul style="list-style-type: none"> <li>In the <b>N103</b> Code List 66 Identification Code Qualifier, where the <b>UL</b> qualifier = GLN</li> <li>In the <b>SDQ02</b> Code List 66 Identification Code Qualifier, where the <b>UL</b> qualifier = GLN</li> </ul>                                                                                                                                                   |

### 6.3.2 Example of Transaction Lines Using GLN and GTIN

**Figure 6-4**

|    |                                                   |
|----|---------------------------------------------------|
| 1  | ST*855*0000002~                                   |
| 2  | BAK*00*AT*PONumber**20210314~                     |
| 3  | N1*SE**92*SellingPartyIdentityNumber~             |
| 4  | N1*SE**UL*GlobalLocationNumber~                   |
| 5  | N1*BS*CompanyName*21*HealthIndustryNumber~        |
| 6  | N1*BS*CompanyName*UL*GlobalLocationNumber~        |
| 7  | PO1*1*43*EA*23.57*UK*GTIN-14*ND*NationalDrugCode~ |
| 8  | ACK*IA*43*EA~                                     |
| 9  | CCT*1~                                            |
| 10 | SE*9*0000002~                                     |



**Note:** The NDC qualifier data elements apply to pharmaceutical products. If your product does not have an assigned NDC by the U.S. FDA or, if you do not wish to transmit this information, these data elements can be ignored.

## 6.4 856 Advance Ship Notice / Manifest

### 6.4.1 Defined Areas of Impact

**Table 6-3** Use with EDI 856 Advance Ship Notice / Manifest

| GS1 Identifier | Qualifier, Segments and Elements                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| GTIN           | <ul style="list-style-type: none"> <li>In the <b>LIN02</b> Code List 235 Product/Service ID Qualifier, where the <b>UK</b> qualifier = GTIN-14</li> <li>In the <b>LIN02</b> Code List 235 Product/Service ID Qualifier, where the <b>UP</b> qualifier = GTIN-12</li> <li>Use of the UK and UP qualifiers applies to all occurrences of data element 235 Product/Service ID Qualifier in the LIN segment.</li> </ul> |
| GLN            | <ul style="list-style-type: none"> <li>In the <b>N103</b> Code List 66 Identification Code Qualifier, where the <b>UL</b> qualifier = GLN</li> </ul>                                                                                                                                                                                                                                                                |

### 6.4.2 Example of Transaction Lines Using GLN and GTIN

**Figure 6-5**

```

1 ST*856*00000003~
2 BSN*00*ShipmentID*20210314*1031*0004~
3 HL*1**S~
4 TD1*CTN*20****G*13.175*LB~
5 TD5*O*2*FDEG*M~
6 REF*BM*BOLNumber~
7 DTM*011*20210314~
8 DTM*017*20210316~
9 N1*ST*CompanyName*21*HealthIndustryNumber~
10 N1*ST**UL*GlobalLocationNumber~
11 N1*BY*CompanyName*21*HealthIndustryNumber~
12 N1*BY**UL*GlobalLocationNumber~
13 N1*SF*CompanyName*21*HealthIndustryNumber~
14 N1*SF**UL*GlobalLocationNumber~
15 N1*SE*CompanyName*21*HealthIndustryNumber~
16 N1*SE**UL*GlobalLocationNumber~
17 HL*2*1*O~
18 PRF*PONumber***20210314~
19 REF*IV*InvoiceNumber~
20 DTM*371*20210316~
21 HL*3*2*I~
22 LIN**ND*NationalDrugCode*LT*LotNumber*UK*GTIN-14~
23 CCT*1~
24 SE*24*00000003~

```



**Note:** The NDC qualifier data elements apply to pharmaceutical products. If your product does not have an assigned NDC by the U.S. FDA or, if you do not wish to transmit this information, these data elements can be ignored.

## 6.5 810 Invoice

### 6.5.1 Defined Areas of Impact

**Table 6-4** Use with EDI 810 Invoice

| GS1 Identifier | Qualifier, Segments and Elements                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| GTIN           | <ul style="list-style-type: none"> <li>In the <b>IT106</b> Code List 235 Product/Service ID Qualifier, where the <b>UK</b> qualifier = GTIN-14</li> <li>In the <b>IT106</b> Code List 235 Product/Service ID Qualifier, where the <b>UP</b> qualifier = GTIN-12</li> <li>Use of the UK and UP qualifiers applies to all occurrences of data element 235 Product/Service ID Qualifier in the IT1 segment.</li> </ul> |
| GLN            | <ul style="list-style-type: none"> <li>In the <b>N103</b> Code List 66 Identification Code Qualifier, where the <b>UL</b> qualifier = GLN</li> </ul>                                                                                                                                                                                                                                                                |

### 6.5.2 Example of Transaction Lines Using GLN and GTIN

**Figure 6-6**

|    |                                                       |
|----|-------------------------------------------------------|
| 1  | ST*810*0000004~                                       |
| 2  | BIG*00*SA*620734**20210314~                           |
| 3  | N1*RI*CompanyName*92*SellingPartyIdentityNumber~      |
| 4  | N1*RI*CompanyName*UL*GlobalLocationNumber~            |
| 5  | N1*ST*CompanyName*92*ShipToPartyIdentityNumber~       |
| 6  | N1*ST*CompanyName*UL*GlobalLocationNumber~            |
| 7  | N1*BT*CompanyName*92*BuyingPartyIdentityNumber~       |
| 8  | N1*BT*CompanyName*UL*GlobalLocationNumber~            |
| 9  | IT1*1*43*EA*2.00*LE***UK*GTIN-14*ND*NationalDrugCode~ |
| 10 | TDS*48~                                               |
| 11 | CCT*1~                                                |
| 12 | SE*9*0000004~                                         |



**Note:** The NDC qualifier data elements apply to pharmaceutical products. If your product does not have an assigned NDC by the U.S. FDA or, if you do not wish to transmit this information, these data elements can be ignored.

## 6.6 820 Payment Order / Remittance Advice



**Note:** GTIN is used as agreed-to by the trade parties in the 820 Payment Order/Remittance Advice transaction.

### 6.6.1 Defined Areas of Impact

**Table 6-5** Use with EDI 820 Payment Order/Remittance Advice

| GS1 Identifier | Qualifier, Segments and Elements                                                                                                                     |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| GTIN           | <ul style="list-style-type: none"> <li>Used as agreed-to by the trade parties in the 820 Payment Order/Remittance Advice transaction.</li> </ul>     |
| GLN            | <ul style="list-style-type: none"> <li>In the <b>N103</b> Code List 66 Identification Code Qualifier, where the <b>UL</b> qualifier = GLN</li> </ul> |

### 6.6.2 Example of Transaction Lines Using GLN

**Figure 6-7**

```

1 ST*820*0000005~
BPR*D*1234*C*ACH*CCD*01*OriginatingFinancialInstitution*DA*BankAccountNumber***
2 01*ReceivingFinancialInstitution*DAReceiversBankAccountNumber*20210314~
3 TRN*1*0000001~
4 DTM*097*20210314~
5 N1*PE*CompanyName*UL*GlobalLocationNumberPayee~
6 N1*PR*CompanyName*UL*GlobalLocationNumberPayer~
7 SE*7*0000005~

```



**Note:** The NDC qualifier data elements apply to pharmaceutical products. If your product does not have an assigned NDC by the U.S. FDA or, if you do not wish to transmit this information, these data elements can be ignored.

## 7 Additional Resources

Links to all of the resources listed below and more are available on the [GS1 US Resource Library](#):

### **Guidelines:**

- [\*Best Practice Guide – Building a Hierarchy\*](#)
- [\*GS1 EDI Healthcare Guidelines\*](#)
- [\*GS1 GLN in Healthcare Implementation Guide\*](#)
- [\*Collaborative Planning, Forecasting and Replenishment \(CPFR®\), An Overview\*](#)

### **GTIN:**

- [\*Healthcare GTIN Adoption & Usage Model\*](#)
- [\*Healthcare Supplier GTIN Tool Kit\*](#)
- [\*Healthcare Providers GTIN Tool Kit\*](#)
- [\*GS1 GTIN Allocation Rules for the Healthcare Sector\*](#)

### **GLN:**

- [\*Healthcare Provider GLN Tool Kit\*](#)
- [\*Healthcare Supplier GLN Tool Kit\*](#)
- [\*Healthcare GLN Reconciliation Guideline\*](#)
- [\*GLN Allocation Rules\*](#)

### **GS1 US University:**

- [\*Certificate and Workshop Education\*](#)
- [\*Educational Webinars\*](#)

## 8 APPENDIX A: PO Examples

### 8.1 Direct Ship Orders

A Purchase Order (850) may be an original, or it may be an update or confirmation of one already communicated to the seller or broker. It may also be used to express distribution requirements for receiving location(s), such as a Direct Ship Order. A Direct Ship Order PO is an example of a purchase order where orders which ship directly from the supplier or the product owner to the customer. Each Direct Ship purchase order contains, in addition to a purchase order number and date, a precise location which is prepared to receive the product or products.

A PO of this nature also specifies delivery window, pricing (cost), defines the products needed with their respective quantities and, as in the case for Direct Ship Order PO for specifies the location using the GLN using previously exchanged information which resides in the suppliers or the product owner's systems typically by way of GDSN or some other mechanism such as EDI.

**Figure 8-1 Direct Ship Purchase Order Sample**

|   |                                                    |
|---|----------------------------------------------------|
| 1 | ST*850*0000006~                                    |
| 2 | BEG*00*SA*PONumber**20201314~                      |
| 3 | N1*SE**92*SellingPartyIdentityNumber~              |
| 4 | N1*SE**UL*GlobalLocationNumber~                    |
| 5 | N1*BS*CompanyName*21*HealthIndustryNumber~         |
| 6 | N1*BS*CompanyName*UL*GlobalLocationNumber~         |
| 7 | PO1*1*43*EA*23.57**UK*GTIN-14*ND*NationalDrugCode~ |
| 8 | CCT*1~                                             |
| 9 | SE*9*0000006~                                      |



**Note:** The NDC qualifier data elements apply to pharmaceutical products. If your product does not have an assigned NDC by the U.S. FDA or, if you do not wish to transmit this information, these data elements can be ignored.

### 8.2 “Ship to Mark for” Orders

A ‘Ship to-Mark for’ PO is an example of cross-dock supply where for each purchase order, the buyer must supply, in addition to a purchase order number and date, which location is to receive the product or products. A PO of this nature also specifies the delivery window, pricing (cost), the products needed with their respective quantities, and the destination location using the GLN where the destination quantity is supplied in the SDQ segment (as in the case for ‘Ship to-Mark for’). The GLN references previously exchanged information which resides in the suppliers or the product owner's systems typically by way of GDSN or some other mechanism such as EDI.

**Figure 8-2 “Ship to Mark for” Purchase Order Sample**

|    |                                                    |
|----|----------------------------------------------------|
| 1  | ST*850*0000007~                                    |
| 2  | BEG*00*SA*PONumber**20210314~                      |
| 3  | N1*SE**92*SellingPartyIdentityNumber~              |
| 4  | N1*SE**UL*GlobalLocationNumber~                    |
| 5  | N1*BS*CompanyName*21*HealthIndustryNumber~         |
| 6  | N1*BS*CompanyName*UL*GlobalLocationNumber~         |
| 7  | PO1*1*43*EA*23.57**UK*GTIN-14*ND*NationalDrugCode~ |
| 8  | SDQ*EA*UL*GlobalLocationNumber1*15~                |
| 9  | SDQ*EA*UL*GlobalLocationNumber2*28~                |
| 10 | CCT*1~                                             |
| 11 | SE*11*0000007~                                     |



**Note:** The NDC qualifier data elements apply to pharmaceutical products. If your product does not have an assigned NDC by the U.S. FDA or, if you do not wish to transmit this information, these data elements can be ignored.

### 8.3 Consignment Orders

The Purchase Order (850) not only accommodates standalone, and blanket order business scenarios, the Purchase Order (850) also accommodates consignment order business scenarios. Consignment order business scenarios have a lot in common with stand-alone Purchase order in that the use or inclusion of GTIN and GLN can be accommodated exactly like the stand-alone Purchase order previously discussed in this section.

Consignment purchase orders are differentiated from Stand Alone purchase orders. Where the stand alone purchase order is identified in the **BEG02**, Code list 92, the Purchase Order Type Code, where the **SA qualifier = Stand-alone order**; Consignment purchase orders are likewise identified in the **BEG02**, Code list 92, the Purchase Order Type Code where the **CN qualifier = Consigned Order**.

What the **CN qualifier** tells the supplier about the order is the order may be direct billing. What's more the **CN qualifier** may tell the seller that the order may not be for direct shipment rather it's likely that the order is simply accounting for a change in stock room supply that may have been fulfilled in some other manner, one in which the trading partners on both sides of the transaction have predetermined to be the default fulfilment scenario. In an example where the consignment order is for goods which have already been consumed, the **CN qualifier** or **Consigned Order** can be billed, automatically, without further processing and without picking, packing or shipping as these processes have already been fulfilled.

### 8.4 Trunk Stock (Bill Only)

Scenarios such as 'Trunk Stock' may also fall into the category of consignment order business scenarios. 'Trunk Stock' may include and is not limited to specialized apparatus, implant material or equipment where the 'product' is transported to the customer by way of the salesperson, (i.e. trunk). The 'consignment' order in this scenario may be the means by which the recipient customer creates the PO to the vendor in order to generate an invoice and a subsequent payment, both highly automated processes reducing dependencies on people to perform everyday financial tasks.

### 8.5 Implant Orders (Bill Only)

Implant orders are similar to Trunk Stock scenarios and may also fall into the category of consignment order business scenarios. Implant orders may include implant material from dental implants to knee replacements to bolts and screws where the 'product' is transported to the customer by way of the salesperson, (i.e. 'Trunk Stock'). The 'consignment' order in this scenario may be the means by which the recipient customer creates the PO to the vendor in order to generate an invoice and a subsequent payment, both highly automated processes reducing dependencies on people to perform everyday financial tasks.



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