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Healthcare

Proof of Concept: Using GLNs to Reduce Rebate & Chargeback Claim Discrepancies

Prepared by the Price Accuracy Initiative Workgroup

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About HIDA

The Health Industry Distributors Association (HIDA) is the premier trade association representing medical products distributors. HIDA members offer logistics services that increase the efficiency of the nation's hospitals, nursing homes, physician practices, and other healthcare providers. Member companies range from independent businesses serving local communities, to international Fortune 500 companies.

Since 1902, HIDA has provided leadership in the healthcare distribution industry. HIDA also works closely with the manufacturers, GPOs and service providers through the HIDA Educational Foundation. This outreach serves to build strong manufacturer/distributor relationships as well as to communicate the value of distribution in the healthcare supply.

1 Executive Summary

Companies in the healthcare industry are heavily focused on improving the rebate and chargeback claims process. These efforts are aimed at reducing costs through process efficiency, increased pricing **accuracy and integrity for providers, and reducing the potentially millions of dollars of “at risk” disputed** rebate and chargeback claims.

The Health Industry Distributors Association (HIDA) teamed up with GS1 US® to form the joint HIDA/GS1 US Price Accuracy Initiative (PAI) to examine the GS1 Global Location Number (GLN) in the context of contract administration and pricing exceptions between distributors and manufacturers. One of the deliverables of the PAI workgroup was to conduct a Proof of Concept in which medical device manufacturers, healthcare distributors, and group purchasing organizations (GPOs) evaluated the use of GLNs in rebate and chargeback claim processes. Specifically, Proof of Concept participants would evaluate whether including GLNs in rebate and chargeback claim data could reduce pricing and chargeback discrepancies.

The Proof of Concept sought to examine this question in the context of claim discrepancies due to non-alignment of the customer, which is a core issue for the vast majority of discrepant claims. **Unfortunately, GLN implementation by provider organizations (the “customers” in rebate and chargeback claims)** has been slow. With millions of dollars at issue in discrepant rebate and chargeback claims, and the significant resources used to reconcile and resolve them, the critical question for the workgroup was whether GLNs *as currently implemented across industry* can help reduce discrepant rebate and chargeback claims today.

The answer was yes. Five healthcare industry stakeholders volunteered to participate in the Proof of Concept under the guidance of HIDA and GS1 US. The stakeholders included two (2) medical device manufacturers, two (2) medical/surgical distributors, and one (1) Group Purchasing Organization. During the Proof of Concept, inclusion of customer GLN eliminated 31% of the discrepancies right off the top. Beyond that, it facilitated reconciliation and resolution of another 35% of the discrepant claims. Combined, inclusion of customer GLN would have been able to reduce discrepancies in the test sample by 66%.

The Proof of Concept demonstrated that including customer GLNs in rebate and chargeback claims reduces the number of discrepancies caused by customer mis-match, and facilitates reconciliation and resolution of customer mis-match discrepancies. In addition, it produced a simple methodology that manufacturers and distributors can use with minimal effort to examine the same question in the context of their own rebate and chargeback processes.

2 Revision Summary

Date	Section	Pages	Revision
Release 1.0 - May 19 2017	All	All	Initial publication
Release 2.0 – June 30 2018	9.2	16	Supplemented with information about the hierarchy exercises presented in Appendix A
	A	19-26	New section presenting quick study and exercises examining the accuracy and completeness of GPO-Managed Hierarchies and Provider Self-Managed Hierarchies in GS1 US Data Hub® Location.

3 Background

Pricing discrepancies in the healthcare supply chain increase operating costs for all trading partners, and the industry-wide effort to identify and disseminate best practices in contract administration is an on-going process. As part of that effort, the Health Industry Distributors Association (HIDA)¹ launched a Contract Administration Workgroup to develop best practices for reducing pricing exceptions between distributors and manufacturers.

The efforts of the HIDA Contract Administration Workgroup produced a white paper entitled [*Improving Pricing Accuracy: Contract Communications Standards for the Healthcare Supply Chain*](#).² The white paper detailed best practices for automating contract management processes, including price authorization acknowledgements, chargeback reconciliations, and manufacturer price/sales catalogs. The recommendations proposed by the workgroup were based on three guiding principles: automation, standards, and timeliness. The white paper made the following observations and recommendations regarding standards:

- Non-standard processes and identifiers create confusion and add cost.
- For product and location identification, GS1 Standards are strongly encouraged (i.e., Global Trade Item Number® (GTIN®) for products and Global Location Number (GLN) for parties/locations).
- For transactions, electronic data interchange (EDI) standard formats are considered the gold standard for communicating information. An acceptable alternative is delimited text files matched to EDI formats.

As part of the recommendation to use standards, HIDA teamed up with GS1 US® to form the joint HIDA/GS1 US Price Accuracy Initiative (PAI) to examine GS1 GLNs in the context of contract administration and pricing exceptions between distributors and manufacturers.

4 HIDA/GS1 US Price Accuracy Initiative

The joint HIDA/GS1 US Price Accuracy Initiative (“the PAI Workgroup”) was formed in the fall of 2015 to examine two key questions:

- whether the GLN could meet party/location identification needs within contract administration processes, and
- whether using GLNs for customer identification in rebate and chargeback claims can reduce pricing and claim discrepancies caused by non-alignment of the customer.

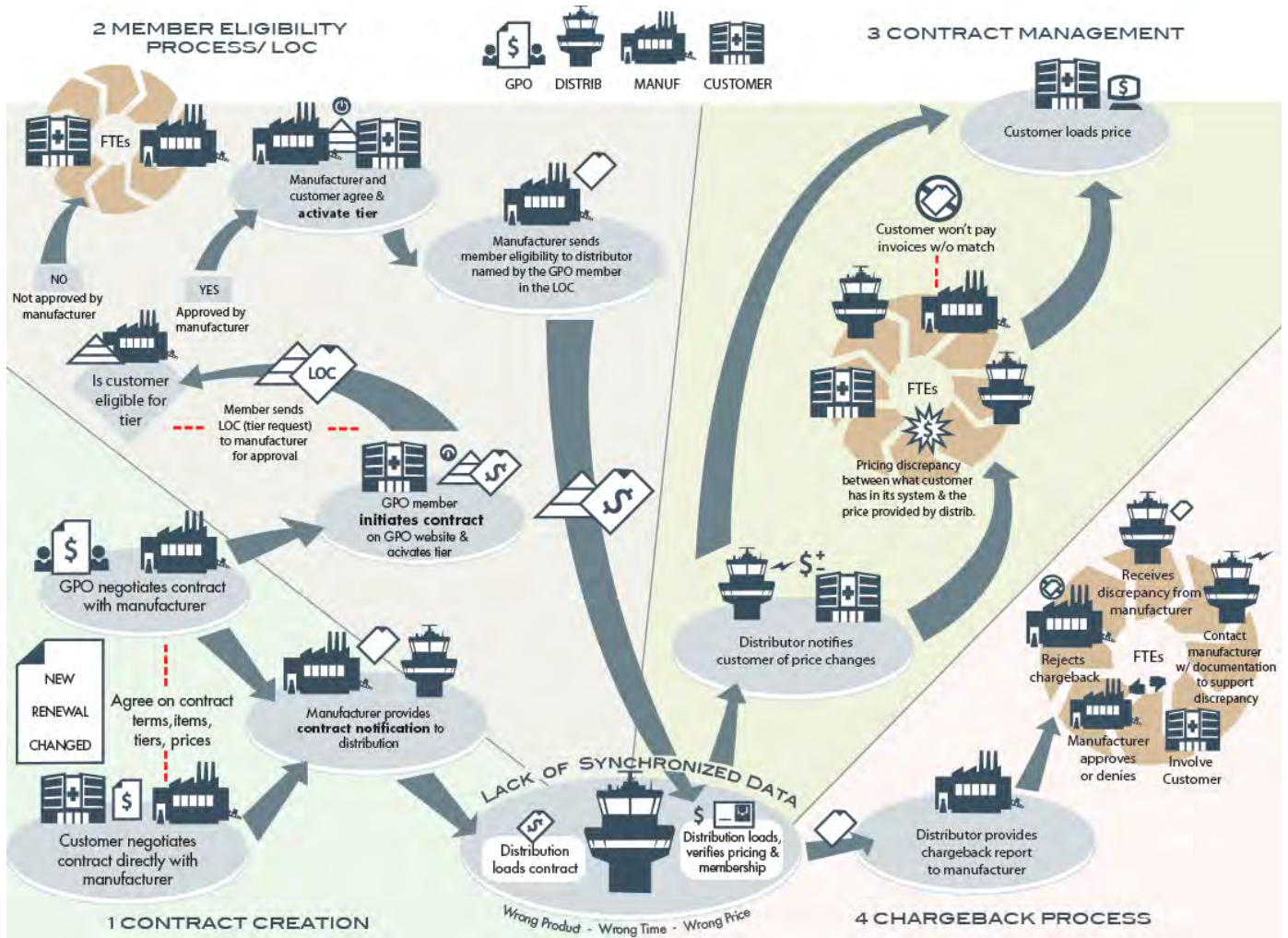
4.1 Examining the use of GLNs to support contract administration in general

The PAI workgroup began with the larger question of whether GLNs can support party/location identification needs within contract administration processes. This is the larger question because contract administration involves numerous business processes across numerous trading partners. Pricing discrepancies in the healthcare supply chain increase operating costs for all trading partners, including providers, group purchasing organizations (GPOs), manufacturers, and distributors. Nonetheless, solving contract pricing issues is extremely challenging, due in large part to the complexity of contract administration in healthcare. The figure below illustrates just how complex the process can be for a vast majority of the products and transactional lines sold through the healthcare supply chain. Thousands of distinct processes, non-standard facility definitions, and data formats exist. It often seems that every relationship in the supply chain spawns its own unique protocol.

¹ HIDA is the premier trade association representing medical products distributors. HIDA also works closely with manufacturers, GPOs, and service providers through the HIDA Educational Foundation.

² [*Improving Pricing Accuracy: Contract Communications Standards for the Healthcare Supply Chain*](#) is published by the Health Industry Distributors Association, Copyright 2017.

Figure 4-1 The Current Contract Administration Process³



To assess whether the GLN could meet party/location identification needs within contract administration processes, the workgroup evaluated existing GS1 US best practice documentation for GLN enumeration and hierarchy. The workgroup found that the best practices appeared to meet the needs for hierarchy structure in the context of contract administration processes. The cross-functional workgroup participants agreed that, based on their evaluation of GLN functionality and best practices for enumeration, implementation and use of GLN in contract administration workflows could bring about process efficiency and reduce the volume of disputed chargeback claims.

4.2 Assessing whether GLNs can help reduce rebate and chargeback discrepancies

Next, the PAI Workgroup turned to the narrower question about one of the business processes involved in contract administration: rebate and chargeback claims. One of the deliverables of the PAI Workgroup was to conduct a Proof of Concept in which medical device manufacturers, healthcare distributors, and GPOs evaluated the use of GLNs in rebate and chargeback claim processes. Specifically, the Workgroup

³ Republished with permission from the Health Industry Distributors Association. Originally published in [Improving Pricing Accuracy: Contract Communications Standards for the Healthcare Supply Chain](#), Health Industry Distributors Association (HIDA), Copyright 2017.

set out to examine whether including a customer GLN in rebate and chargeback claim data could reduce pricing and chargeback discrepancies caused by non-alignment of the customer.

5 The Central Question

Provider organizations can be quite complex, with various business/functional entities, names, facilities, locations, departments, etc. A pricing contract specifies who within a provider organization is entitled to receive the discounted pricing. Not all of the provider entities and locations may be included in the contract.

In administering pricing contracts, a distributor implements the manufacturer's pricing terms with the distributor's customers and then submits a claim to the manufacturer to reimburse the difference between the distributor's normal price and the discounted price charged to the customer per the contract. This reimbursement is referred to as a rebate or chargeback. In order for the claim to be paid, it is essential that the distributor correctly identify the customer so that the manufacturer can match the customer to one of its contracts. Unfortunately, this is not as simple as it sounds.

Without a standards-based approach to party and location information in healthcare, manufacturers and distributors have traditionally assigned their own proprietary identifiers to customers, and created cross-references and data maps to align customer identifiers with one another. When submitting rebate and chargeback claims, distributors would include their customer identifier, the manufacturer's customer identifier (based on the distributor's data map), as well as other data about the customer (e.g., name, address, etc.). Despite the effort, customer mis-match remains one of the most predominant causes of discrepant claims. The complexity of provider organizations combined with variations in how manufacturers and distributors assigned their customer identifiers (e.g., which level, which entity, which location, etc.) undermined the ability to accurately identify the correct customer.

Similar party/location alignment issues impact many business processes across healthcare, leading the industry to move toward implementation of GS1 GLNs. The GLN is the globally unique GS1 identification number for parties and locations. With GLNs, each party or location can have one, globally-unique identifier that all trading partners can use to identify that party/location in all supply chain transactions and communications. For example, if providers assign GLNs to their essential parties/locations, those GLNs could be used to identify provider customers in manufacturer contracts and in distributor rebate and chargeback claims to streamline contract administration processes.

Unfortunately, robust implementation of GLNs by provider organizations remains a challenge. GPOs kick-started the effort by assigning the provider GLNs needed to support the GPO roster and registering them in **GS1 US Data Hub | Location**. The intention was always that providers would take ownership of their GLN hierarchies in **GS1 US Data Hub | Location**, complete their enumeration, and manage their own GLN information. Although progress in this area has been slow, there are still many provider GLNs in existence today, including within manufacturer and distributor customer databases, thanks to the initial work done by the GPOs and some providers.

Therefore, the critical question for the workgroup was whether GLNs *as currently implemented across industry* can help reduce discrepant rebate and chargeback claims today. With the millions of dollars at issue in discrepant rebate and chargeback claims, and the significant resources used to reconcile and resolve them, the Proof of Concept sought to examine this question in the context of claim discrepancies due to non-alignment of the customer, which is a core issue for the vast majority of discrepant claims.

6 The Proof of Concept

6.1 Goals

- Examine whether including GLNs as an attribute in rebate and chargeback claims between manufacturers and distributors can reduce claim discrepancies.

- Define a Proof of Concept exercise that healthcare industry business partners can use independently to examine the potential impact of using GLNs in their own rebate and chargeback processes.

6.2 Objectives

- Focus on claim discrepancies caused by non-alignment of the customer.
- Compare the impact of including GLNs to identify customers in rebate and chargeback claims versus not including GLNs.
- Use GLNs as currently implemented across industry (i.e., do not assign any GLNs for the Proof of Concept -- use only what is currently available in GPO rosters, GS1 US Data Hub | Location, manufacturer systems, distributor systems; etc.).
- Define a process that is simple, repeatable and effective, and that minimizes the level of time, resources and effort required by each participant.

6.3 Participants

Five healthcare industry stakeholders volunteered to participate in the Proof of Concept under the guidance of HIDA and GS1 US. The stakeholders included two (2) medical device manufacturers, two (2) medical/surgical distributors, and one (1) Group Purchasing Organization. Each participating company had a Proof of Concept project team that included the following members:

- Proof of Concept sponsor
- Contracts and Chargebacks Process owner(s)
- Data Management/Data Support



Note: GS1 US, HIDA and the participating organizations have chosen to keep the actual names of the participating organizations confidential due to the sensitive nature of the data to be presented in the Proof of Concept results.

7 Parameters

7.1 Sample data set

In order to meet the goals and objectives of the Proof of Concept, it was determined that the sample data set to be used in the Proof of Concept should be comprised of actual discrepant claim lines **previously submitted by each distributor where "customer" was the reason for the mismatch.**

Specific Requirements for Sample Claim Lines:

- submitted by the participating distributors to the participating manufacturers prior to and independent of the Proof of Concept
- used proprietary customer identifiers (not GLNs) to identify the customer
- flagged by the manufacturers as discrepant prior to and independent of the Proof of Concept
- **"customer" was the reason for the mismatch**
- has not undergone any review or resolution effort by the manufacturer or the distributor

It was further decided that the Proof of Concept sample data set would include a minimum of 25 lines per distributor representing 25 different customers. (More lines could be considered as long as the level of effort or project duration was not grossly impacted.)

7.2 Key Data Elements (KDEs)

The data elements in the rebate and chargeback claims used for the Proof of Concept were essentially identical to the typical elements used in the rebate and chargeback claim process today:

- Distributor Name, City, State, and Zip
- "Sold To" Customer ID, Name, City, State, and Zip on distributor claim
- Manufacturer Customer ID, Name, City, State, and Zip for that account
- Distributor Invoice Number, Invoice Date, and Manufacturer Contract Number on distributor claim
- Manufacturer Part Number sold, Quantity sold
- Distributor price, Distributor-stated Customer Price

In fact, the spreadsheets developed to share data between the manufacturer and the distributor for the Proof of Concept were based on existing templates from the participating manufacturers, only adding columns for GLNs and comments/resolution to be used during the review and evaluation step.

7.3 Testing process/methodology

One of the goals of the Proof of Concept was to define a simple, repeatable process that healthcare industry manufacturers and distributors could use independently to evaluate the use of GLNs in their own rebate and chargeback communication processes. This would help stakeholders estimate the potential impact for their organizations in terms of efficiency and accuracy, and establish a clear ROI opportunity to promote organizational commitment to implement and use GLNs.

In pursuit of this goal, the workgroup defined and used the following testing methodology:

- The participating manufacturers searched their systems to locate actual discrepant claim lines **previously submitted by each distributor where "customer" was the reason for the mismatch**. This produced the Proof of Concept sample set in which 100% of the claims were discrepant based on customer.
- The manufacturers then identified the GLN they would use to identify the customer in each claim line. To identify the GLN for the customer, manufacturers first looked to their own customer database.
 - If the customer had a GLN associated with them, the manufacturers would check Data Hub | Location to verify the GLN and then would use that customer GLN for the Proof of Concept.
 - If the customer did not have a GLN associated with them in the **manufacturer's** customer database, the manufacturer would go to Data Hub | Location to obtain a GLN for the customer.
- Next, the manufacturers copied the mismatched claim data for each distributor into separate spreadsheets (using the data spreadsheet template prepared for the Proof of Concept), and then shared each spreadsheet with the respective distributor.
 - The manufacturers did not share the GLN they would have attributed to each claim line in the spreadsheet sent to the distributor so as not to influence the process. (This information would be shared later during review and reconciliation.)
- Next, the distributor identified the GLN that they would use to identify the customer in each claim line using the same process that the manufacturers used. Specifically, the distributors first looked to their own customer database to identify the GLN for the customer:
 - If the customer had a GLN associated with them, the distributor would check Data Hub | Location to verify the GLN and then would use that customer GLN for the Proof of Concept.
 - If the customer did not have a GLN associated with them in the distributor's customer database, the distributor would go to Data Hub | Location to obtain a GLN for the customer.

- The distributor and manufacturer then met to compare the GLNs they attributed to the customer in each claim line **to determine how inclusion of GLNs impacted the parties’ ability to match on** customer.
- The results, review and analysis were captured to assess the impact GLNs can have when included in rebate and chargeback claims transactions.

8 Results

8.1 Data matching levels

During the Proof of Concept, **it became apparent that there were varying degrees of “matching”** between the distributor and the manufacturer when interpreting data at the line level. Specifically, participants found that in addition to direct one-to-one matches, **there were also categories of “near matches”** where additional collaboration could resolve the mis-match. Participants found that such instances were valuable in addition to direct matches because they facilitated simplified and successful reconciliation and resolution, which could also reduce discrepant claims. Therefore, four matching categories were defined to support data collection about each of the matching levels:

- **Match: Manufacturer’s customer GLN matched distributor’s customer GLN.** Exact match found.
- **Close Match:** Slight variation prevented an exact match, but quick discussion and examination using **GS1 US Data Hub | Location** enabled manufacturer and distributor to resolve and reconcile for a match.
- **No Match, Opportunity:** An otherwise “Close Match” that participants were not able to resolve within the confines of the Proof of Concept, but that both parties agreed could be corrected to produce a match with very minimal effort in the regular business environment (**e.g., customer’s hierarchy was incomplete; distributor location for transfers was not enumerated; etc.**).
- **No Match:** No GLN match found and no way to reconcile.

During the Proof of Concept, participants recorded the results they had for each category in order to provide a fuller picture of how inclusion of GLNs could help reduce discrepant claims by reducing discrepancies and by facilitating reconciliation/resolution of a flagged discrepancy.

8.2 Raw test results

Two manufacturers and two distributors performed the Proof of Concept analysis on a total of 101 claim lines combined. The raw results are provided below.

Table 8-1 Raw Test Results

Degree of Matching	Description	Total # of Claim Lines
MATCH	Manufacturer’s customer GLN matched distributor’s customer GLN. Exact match found.	31
CLOSE MATCH	Slight variation prevented an exact match, but discussion and examination in GS1 US Data Hub Location enabled manufacturer and distributor to resolve and reconcile for a match.	14
NO MATCH, OPPORTUNITY	An otherwise “close match” where location information to resolve the mis-match was incomplete in some minor way that participants noted could be corrected to produce a match with very minimal effort (e.g., customer’s hierarchy was incomplete; distributor location for transfers was not enumerated; etc.).	21
NO MATCH	No GLN match found and no way to reconcile.	35
TOTAL		101

8.3 Analysis

Analysis of the Proof of Concept data provided encouraging results and a strong position statement for the advantages of including customer GLNs in rebate and chargeback claims to reduce discrepancies. The comparative results in the table below indicate the proportionate impact found for each level of matching tested.

Table 8-2 Comparative Results

Degree of Matching	Raw Data (total # of claim lines)	Proportionate Impact (percentage of total claim lines)
MATCH	31	31%
CLOSE MATCH	14	14%
NO MATCH, OPPORTUNITY	21	21%
NO MATCH	35	35%

As noted above, participants recorded the results they had for each category in order to provide a fuller picture of how inclusion of GLNs could help reduce discrepant claims by eliminating discrepancies and by facilitating reconciliation and resolution of a flagged discrepancy. Therefore, in order to properly consider the impact of including the customer GLN, the participants considered the results within the three impact categories defined below.

Table 8-3 Impact of Including Customer GLN

Impact of Using GLN	Description	Degrees of Matching	Results
Eliminated Discrepancy	instances where inclusion of the customer GLN produced a direct match that eliminated any discrepancy based on customer mis-match	MATCH	31%
Facilitated reconciliation & resolution of discrepancy	instances where inclusion of the customer GLN made reconciliation a customer mis-match discrepancy easy to resolve	CLOSE MATCH + NO MATCH, OPPORTUNITY	35%
No Impact	instances where inclusion of the customer GLN neither eliminated a discrepancy nor assisted in its reconciliation and resolution	NO MATCH	35%

Overall, inclusion of customer GLN eliminated 31% of the discrepancies right off the top. Beyond that, it facilitated reconciliation and resolution of another 35% of the discrepant claims (**i.e., "Close Match" discrepancies they were able to resolve, and "No Match, Opportunity" discrepancies they were not able to resolve within the confines of the Proof of Concept but that both parties agreed they would have been able to resolve easily in the regular business environment**). Combined, inclusion of customer GLN would have been able to reduce discrepancies by 66%.

Table 8-4 Benefits of Including Customer GLN

Impact Of Using GLN	Reduction of Discrepancies	Associated Degrees of Matching
Eliminated discrepancy	31%	MATCH
Facilitated reconciliation & resolution of discrepancy	35%	(CLOSE MATCH) + (NO MATCH, OPPORTUNITY)
Combined Total Benefits	66%	(MATCH) + (CLOSE MATCH) + (NO MATCH, OPPORTUNITY)

8.4 Findings

- Customers do not need to enumerate GLNs much beyond a Bill-to and Ship-to level for GLNs to be used successfully in rebate and chargeback processes.
- **Distributors need to enumerate themselves so that product “sold” between distribution locations and traced through EDI sales tracings can be easily “matched” during the chargeback reconciliation process and not flagged as discrepant.**
- **There are varying degrees of “matching” when interpreting data at the line level. The level of data matching can range from an exact match, to no match, to somewhere in between. These “in between” comparisons can often be easily resolved between trading partners.**
 - The messaging functionality in the Data Hub | Location tool, proved to be an effective feature for resolving these types of mismatched lines.
- Working together to identify and agree on GLNs for individual accounts and locations is a valuable exercise that enriches understanding about your supply chain and how your organization is viewed by its trading partners.
- The level of effort necessary for a manufacturer and distributor to identify, collaboratively review, and even resolve discrepant chargeback claim lines using GLNs is minimal, and has the potential to yield high returns.
 - The level of effort involved in completing an exercise like this Proof of Concept is minimal. Participants found that the Proof of Concept methodology was very straightforward, and minimized the level of time, resources and effort required by each participant.
 - Choosing your top five trading partners and performing this exercise would require low effort, but can yield a high return.
- Industry discussion is needed to determine or clarify standard naming conventions and rules (Saint/St./ST), and to develop guidance regarding the level of enumeration and hierarchy needed to support various business processes.
- GLN management and maintenance is a critical factor for optimal use of GLNs in contract and chargeback processes. Whether a hierarchy is being managed by a GPO or by the actual provider (or provider system), complete, timely and accurate updates to the GLN hierarchy are essential.
- Following the documented best practices around building a hierarchy and properly maintaining that hierarchy can **improve “out of the box” results of contract and chargeback discrepancies** significantly.
- Improving business processes requires involvement of multiple stakeholders from across an organization.
 - Business process personnel and supply chain personnel have very different perspectives about **information pertaining to “location.” Therefore, participation by both areas is essential** for understanding how an organization should be enumerated within the capabilities of the GLN hierarchy.
 - When an organization is making decisions on how best to enumerate GLNs, subject matter experts (SMEs) across different areas (including contracts, chargebacks, supply chain, procurement, accounts payables and IT) are essential to fully understand opportunities and potential issues.

8.5 Observations

- In addition to regular maintenance, regular hierarchy review and verification by hierarchy owners is important for instilling confidence in users of the data.

- Organizations should determine the level of hierarchy enumeration needed to accommodate business process needs for supply chain or product movement, as well as key business processes such as order-to-cash and contract/pricing/chargeback.
 - There is a clear opportunity to re-educate all healthcare stakeholders and raise awareness within the healthcare industry of GLN functionality, capabilities, costs, and the potential benefits of using GLNs.
 - Location duplications created when a provider is listed on more than one GPO roster or moves from one GPO to another need to be resolved by GPOs as expeditiously as possible.
 - Healthcare supply chain stakeholders have more confidence in the accuracy of GLNs from provider-managed (i.e., “self-managed”) GLN hierarchies.
 - Hierarchies that are provider self-managed should be indicated as such in Data Hub | Location using the “self-managed” flag. This is valuable to users of the data, and could lead to a renewed interest in GLN implementation and use.
 - When implementing GLN, healthcare industry stakeholders should apply a traditional implementation project plan that includes (but is not limited to) the following:
 - design a process and standard operating procedures based on GS1 US guidance and industry best practices to uniquely identify locations, and capture and store data
 - assign resources to support GLN implementation and continued management of location information
 - if outside of the GS1 US Data Hub | Location tool, share or make the location information readily available.
- ✓ Note: All of the findings and observations aligned with guidelines and best practices from many of the documents that GS1 US and GS1 offer with respect to GLNs including:
- [Best Practice Guide – Building a Hierarchy](#)
 - [Best Practice for Implementing GLN in Trace, Chargeback and Rebate Processes](#)
 - [Guideline for Reconciling Accounts for Use with GS1 GLNs](#)
 - [GLN in Healthcare Implementation Guide](#)

8.6 Conclusion

Goal #1: Examine whether including GLNs as an attribute in rebate and chargeback claims between manufacturers and distributors can reduce claim discrepancies.

- Conclusion: Yes. Inclusion of the customer GLN in rebate and chargeback claims can:
 - reduce the number of discrepancies caused by customer mis-match,
 - facilitate reconciliation and resolution of customer mis-match discrepancies, and
 - produce valuable process efficiencies in the effort it takes to reconcile customer mis-matches.

Goal #2: Define a Proof of Concept exercise that healthcare industry business partners can use independently to examine the potential impact of using GLNs in their own rebate and chargeback processes.

- Conclusion: The methodology used in this Proof of Concept was simple, straight-forward and effective. It offers a process that manufacturers and distributors can use with minimal effort to:
 - examine the potential impact of using GLNs in their own rebate and chargeback processes, and
 - resolve rebate and chargeback discrepancies caused by customer mis-match when GLNs are included in the claims transactions.

9 Additional Findings

9.1 Using **GS1 US Data Hub | Location** versus GPO rosters

Participants wanted to compare the use of **GS1 US Data Hub | Location** to look-up and identify customer GLNs versus the use of GPO rosters. During the main Proof of Concept testing, manufacturers used Data Hub | Location to look-up and identify customer GLNs. To gain insight about the use of GPO rosters for this purpose, one of the manufacturers re-ran the test with both distributors using the same methodology, but this time the manufacturer used the appropriate GPO roster to look up and identify the customer GLN instead of Data Hub | Location.

Table 9-1 Results using **GS1 US Data Hub | Location** versus using a GPO roster

Degree of Matching	Raw Data (total # of claim lines)		Proportionate Impact (% of total claim lines)	
	GS1 US Data Hub Location	GPO Roster	GS1 US Data Hub Location	GPO Roster
MATCH	16	7	31%	14%
CLOSE MATCH	5	1	10%	2%
NO MATCH, OPPORTUNITY	4	--	8%	--
NO MATCH	26	43	51%	84%

As the table shows, using the GPO roster produced much lower matching than using **GS1 US Data Hub | Location**, which was and is to be expected.

GPO rosters typically do not have the same level of granularity that **GS1 US Data Hub | Location** has. The GPOs kick-started the effort to implement GLNs across the provider community by assigning the provider GLNs needed to support the GPO roster and registering them in **GS1 US Data Hub | Location**. The GPOs sought to assign only the GLNs needed to support the GPO roster. They did not seek to assign GLNs needed to support other business processes – like rebates and chargebacks. The intention was always that providers would take ownership of their GLN hierarchies in **GS1 US Data Hub | Location**, complete their enumeration, and manage their own GLN information to support other applications. This explains why using the GPO roster produced much lower matching results than using **GS1 US Data Hub | Location**:

- **GPO rosters do not need and therefore do not contain “Deliver To” locations. However, “Deliver To” locations are important for many business processes, including rebates and chargebacks.**
- Timeliness can also be a factor. Updates in **GS1 US Data Hub | Location** are available as soon as they are approved. However, due to verification or additional requirements, there can be a delay in the availability of those same changes on the GPO roster.

The Proof of Concept showed that using the GPO roster was not as effective as using **GS1 US Data Hub | Location**, which can provide the additional granularity and timeliness of updates needed to support rebate and chargeback processes.

9.2 Provider GLN enumeration and hierarchy management

As described earlier, GPOs performed the initial GLN enumeration on behalf of their provider members. Their intention was for providers to take over responsibility for enumerating their other locations and managing their own hierarchies and location information. There are clear benefits when healthcare providers take ownership of their hierarchies, including timeliness of updates, hierarchies that more **closely align with an organization’s supply chain and process-based structure**, and data quality. Without that, participants in the Proof of Concept found that:

- Incomplete provider enumeration and hierarchy can inhibit the ability of other supply chain members to fully realize the process improvements from and the benefits of using GLNs.
- Supply chain stakeholder confidence in the accuracy of healthcare provider GLN information is impacted by whether providers are managing their hierarchies and GLN information for themselves.

Self-managed hierarchies and location information are a foundational best practice for GLNs. In addition, regular maintenance, hierarchy review, and verification by hierarchy owners are essential for maintaining data quality. Although healthcare provider progress in this area has been slow, this remains an important industry goal.

UPDATE: Quick Study Addendum

Following the initial POC effort, POC participants decided to compare a GPO Roster to two *Provider Self-Managed Hierarchies* in Data Hub | Location to gain insight about the accuracy and completeness of both data sources. In addition, POC participants decided to compare a small subset of *GPO-Managed Hierarchies* versus *Provider Self-Managed Hierarchies* for completeness and accuracy. (See the [appendix](#) of this document for detailed information about the quick study.)

This quick study revealed no significant difference between the GPO Roster and **GS1 US Data Hub | Location** in terms of accuracy and completeness. In addition, the quick study exercises found no significant difference between *Self-Managed Hierarchies* and *GPO-Managed Hierarchies*, signaling that the existing GPO enumeration is a valid and effective starting point. Coupled with industry best practice of collaboration with the provider, either type of hierarchy can help bring alignment to the standardized **identification of “customer” between trading partners**. Moreover, study participants were able to demonstrate additional improvement over *Self-Managed Hierarchies* and *GPO-Managed Hierarchies* with very little effort. While the exercises in this study found better alignment between the manufacturer/distributor matching to *Self-Managed GLN Hierarchy*, the exercises demonstrated value in using existing GLN enumeration **done by the GPO’s to identify the customer in manufacturer and distributor account masters**.

10 Next Steps

This Proof of Concept reinforced the essential role of standards for driving accuracy, increasing efficiency and reducing costs across multiple industry stakeholders. Organizations looking to develop a Return on Investment (ROI) statement for the implementation, management and use of GLNs can follow the simple, low-level-of-effort methodology created in this Proof of Concept. This methodology can help stakeholders to evaluate the use of GLNs within this one process area of their organization, and to identify potential benefits that may yield a high return. Once GLNs are being assigned and managed, it becomes easier to identify opportunities to apply them to other functional areas in the organization.

Building on the knowledge and insight gleaned from the Proof of Concept, participants have identified the following three focus areas as important next steps.

10.1 Drive implementation and use of GLN within rebate and chargeback processes

The Proof of Concept demonstrated that including existing customer GLNs in rebate and chargeback claims can reduce the number of discrepancies caused by customer mis-match, and facilitate reconciliation and resolution of customer mis-match discrepancies today. It is important to raise awareness of these important findings, and emphasize that the benefits are cumulative as customer GLNs are matched, updated in manufacturer and distributor systems, and then used in claim transactions going forward. Likewise, it is important to raise awareness of the simple methodology that manufacturers and distributors can use with minimal effort to examine the potential impact of using GLNs in their own rebate and chargeback processes.

In addition, there is a need to work with industry stakeholders to pilot this concept with key business partners, and to develop case studies about using GLNs in rebate and chargeback claims as well as other contract administration processes. There is also a need to engage with GS1 US Data Hub | Location to enhance the tool based on the insights gained from the Proof of Concept.

10.2 Support development of provider use cases and value propositions

Moving the healthcare industry to provider self-managed GLN hierarchies remains a goal of the GPOs and other industry stakeholders. Therefore, there is a need to support providers in developing use cases and demonstrating value propositions for implementing GLNs in their own business processes to help drive GLN implementation across the provider community.

The HIDA best practices white paper found that non-standard processes and identifiers create confusion and add cost. Provider organizations may need additional support in order to understand the connection between process inefficiency and cost. Clarity on this connection *can* help providers identify use cases and demonstrate value propositions for implementing GLNs to improve their own business processes and help drive unnecessary costs out of the healthcare supply chain.

While this Proof of Concept was designed to show the potential improvement to manufacturer and distributor processes, providers also benefit from using GLNs in rebate and chargeback claim processes because **it helps to assure they are billed the “right price” for the products they purchase. Based on the results of a survey recently conducted by HIDA, getting billed the “right price” continues to be one of the top three problems cited by healthcare providers.** Using GLNs in contract and chargeback processes can be an important tool for addressing that problem and helping providers to start making the connection between inefficiency and cost.

10.3 Renew focus on education and awareness

Based on the knowledge and experience gained from participating in the Proof of Concept, the workgroup realized that misunderstandings around the basics of GLN access, assignment and benefits are prevalent across the industry. To support and promote GLN implementation, there is a need for renewed emphasis on and education about GLN capabilities and the functionality of the GS1 US Data Hub | Location tool to dispel these misunderstandings.

11 Conclusion

This Proof of Concept reinforced the essential role of standards for driving accuracy, increasing efficiency, and reducing costs across multiple industry stakeholders. Implementation and use of GLNs **to standardize “customer” identification in** rebate and chargeback claims can help reduce the number of discrepancies between healthcare manufacturers and distributors, reduce the volume of disputed chargeback claims, and bring about valuable process efficiencies. Organizations looking to develop a Return on Investment (ROI) statement for the implementation, management and use of GLNs can follow the simple, low-level-of-effort methodology created in this Proof of Concept. This methodology can help stakeholders to evaluate the use of GLNs within this one process area of their organization, and to identify potential benefits that may yield a high return.

12 Additional Resources

User Guides:

- [Guideline for Reconciling Accounts for Use with GS1 GLNs](#)
- [Best Practice for Implementing GLN in Trace, Chargeback and Rebate Processes](#)
- [Best Practice Guide – Building a Hierarchy](#)
- [GLN in Healthcare Implementation Guide](#)
- [GLN Allocation Rules](#)

GLN Toolkits

- [Healthcare Provider](#)
- [Healthcare Supplier](#)

A Exercise to Examine GPO versus Self-Managed Hierarchies

A.1 Approaches to GLN Hierarchy Management for Healthcare Providers

Implementation of GLNs across provider organizations was kick-started by GPOs who performed the initial GLN enumeration on behalf of their provider members (i.e., GPOs assigned providers the GLNs needed to support the GPO roster and registered them in GS1 US **Data Hub | Location**). Their intention was for providers to take over responsibility for enumerating their other locations and managing their own hierarchies and location information. Progress in this area has been slow, and has resulted in three approaches to managing healthcare provider GLN hierarchies in GS1 US **Data Hub | Location** (as shown in the table below).

Table A-1 Approaches to GLN Hierarchy Management

Approach	Description	GS1 US Data Hub Location Flag
Approach 1: "GPO-Managed"	GPO assigns GLNs and maintains provider hierarchy.	{BLANK}
Approach 2: "Co-Managed"	Provider has editor and approver rights, but can request GPO assistance if needed (i.e., provider self-managed with GPO assistance).	<i>Provider Managed</i>
Approach 3: "Provider Self-Managed"	Provider has full rights and completely self-manages their hierarchy. (GPO has no access rights to add, edit, update or delete.)	<i>Self-Supported Hierarchy</i>



Note: Participants decided to keep the exercise focused on the two "pure" management styles: *Approach 1: GPO Managed* and *Approach 3: Provider Self-Managed*. *Approach 2 – Co-Managed Hierarchies* was not examined in this exercise.

A.2 Central Questions

Some manufacturers and distributors rely on the GPO Roster even if the provider customer has taken over and is fully self-managing their hierarchy in GS1 US Data Hub | Location. POC participants decided to compare a GPO Roster to two *Provider Self-Managed Hierarchies* in Data Hub | Location to gain insight about the accuracy and completeness of both data sources. In addition, participants in the Proof of Concept found that supply chain stakeholder confidence in the accuracy of healthcare provider GLN information is impacted by whether providers are managing their hierarchies and GLN information for themselves in GS1 US Data Hub | Location. Therefore, POC participants decided to examine and compare a small subset of *GPO-Managed Hierarchies* versus *Provider Self-Managed Hierarchies* in order to test this impression and gain insight to support stakeholder confidence. This study was launched to examine these issues:

Question 1 - GPO Roster versus GS1 US Data Hub | Location: Is there a significant difference in the accuracy and completeness of a GPO Roster versus *Provider Self-Managed Hierarchies* in Data Hub | Location?

Question 2 - Impact of Hierarchy Management Approach: Is there a significant difference in the accuracy and completeness of *Provider Self-Managed Hierarchies* versus *GPO-Managed Hierarchies* sufficient to support the industry impression that *GPO-Managed Hierarchies* are not effective for use by manufacturers in business transactions with distributors or providers?

A.3 Conclusion Statement to Industry

This quick study found no significant difference between *Self-Managed Hierarchies* and *GPO-Managed Hierarchies*, signaling that the existing GPO enumeration is a valid and effective starting point. Coupled with industry best practice of collaboration with the provider, either type of hierarchy can help bring

alignment to the standardized identification of “customer” between trading partners. Moreover, study participants were able to demonstrate additional improvement over *Self-Managed Hierarchies* and *GPO-Managed Hierarchies* with very little effort. While the exercises in this study found better alignment between the manufacturer/distributor matching to *Self-Managed GLN Hierarchy*, the exercises demonstrated value in using existing GLN enumeration done by the GPO’s to identify the customer in manufacturer and distributor account masters.

In reviewing the original 100 lines used in the 2016 Proof of Concept exercise, the workgroup found a majority of the data lines were from accounts with *GPO-Managed Hierarchies*. This quick study found no significant difference between *Self-Managed Hierarchies* and *GPO-Managed Hierarchies*. Therefore, the initial Proof of Concept combined with this small study seems to suggest that the use of GLN from either *GPO-Managed Hierarchies* or *Provider Self-Managed Hierarchies* can help reduce the number of discrepancies between healthcare manufacturers and distributors, and the volume of disputed chargeback claims.

A.4 Study Description

This study was intended to provide a quick test of the questions, and was conducted using a very small data set. There were seven participants in this study, including one Manufacturer, one Distributor, and one Group Purchasing Organization (GPO). Four healthcare providers also participated:

- Two (2) with *Provider Self-Managed Hierarchies* (Provider #1 and Provider #2)
- Two (2) with *GPO-Managed Hierarchies* (Provider #3 and Provider #4)

The study encompassed the following steps:

1. GPO and providers gathered account and hierarchy details from their respective authoritative data sources.
 - GPO – extracted member account information on the participating providers from the GPO Roster (e.g., geographics; GPO relationship; Bill to/Ship to; identified GLNs; etc.)
 - Providers – extracted specified information about their organization from their systems (e.g., geographics; GPO relationship; Bill to/Ship to; GLNs; etc.)
2. The Manufacturer and Distributor extracted available account information on the participating providers from their respective Customer Account Master (e.g., geographics; GPO relationship; Bill to/Ship to; GLNs; etc.). Then, the Manufacturer and Distributor worked to identify the GLN they would use to identify the customer in transactions:
 - If the customer had a GLN associated with them in the customer database, the Manufacturer/Distributor would use that customer GLN for the test.
 - If the customer did not have a GLN associated with them in the database, the Manufacturer/Distributor would consult either the GPO Roster, GS1 US Data Hub | Location, or the provider customer directly to obtain a GLN for the customer (noting which source was used).
3. Compare the GPO Roster to the two *Provider Self-Managed Hierarchies* in **GS1 US Data Hub | Location** for accuracy or completeness. Document gaps and the effort to synchronize. Share the synched hierarchy with all participants.
4. Compare Manufacturer and Distributor Account Masters to the two *GPO-Managed Hierarchies* for accuracy or completeness. Document gaps and the effort to synchronize.
5. Compare Manufacturer and Distributor Account Masters to the two *Provider Self-Managed Hierarchies* for accuracy or completeness. Document gaps and the effort to synchronize.

A.5 QUESTION 1 - GPO Roster versus Data Hub | Location

A.5.1 Central Question

Is there a significant difference in the accuracy and completeness of a GPO Roster versus *Provider Self-Managed Hierarchies* in GS1 US Data Hub | Location?

A.5.2 Description of Exercise

- Participants: GPO and the two Providers with *Self-Managed Hierarchies* in GS1 US Data Hub | Location
- The GPO worked with the two Self-Managed Providers to compare the GPO Roster to GS1 US Data Hub | Location in a two-way matching exercise:
 - Assess Member Records in the GPO Roster against GS1 US Data Hub | Location, and
 - Assess GLN Records in **GS1 US Data Hub | Location** against the GPO Roster.
- Participants documented all gaps and shared the synched hierarchies with all participants.

A.5.3 GPO Roster Assessment

Table A-2 Results about the Accuracy of the GPO Roster

GPO Roster	% that fully aligned with GS1 US Data Hub Location ⁴	% that needed to be adjusted to align with GS1 US Data Hub Location ⁵
Provider #1 Member Records in GPO Roster	91.95%	8.05%
Provider #2 Member Records in GPO Roster	99.2%	0.8%

A.5.3.1 Explanation of Issues Found in the GPO Roster Associated with Provider #1 GLNs

- Prior to the study, there had been a merger/acquisition that resulted in a number of duplicate records for Provider #1 in the GPO Roster.
 - Identified duplicate rostered locations (duplicates had new names and/or addresses, and provider member needed to identify the duplicates).
 - For conflicting GLNs between GPO-assigned GLN and member-created GLN, study adopted member-created GLN.
 - This clean-up effort between the GPO and Provider #1 resulted in 24.5% updated GLNs in the GPO Roster.
- Address discrepancies between GLN in GS1 US Data Hub | Location and GPO Roster membership records due to missing suite numbers.
- Updating membership with member-created GLN where a GLN was not recorded in the GPO Roster member record.

⁴ The number of GPO member records that aligned with GS1 US Data Hub | Location (without adjustment), divided by the total number of active member records in GPO Roster

⁵ The number of GPO member records GPO had to adjust to align with GS1 US Data Hub | Location, divided by the total number of active member records in GPO Roster

A.5.3.2 Explanation of Issues Found in the GPO Roster Associated with Provider #2 GLNs

- Address discrepancy between **GS1 US Data Hub | Location** and GPO Roster membership record due to missing suite numbers.
- Self-Managed Provider #2 has an established process where they communicate updates, additions and changes to membership in addition to changes they make in the **GS1 US Data Hub | Location**. As a result, very minimal changes were needed.

A.5.4 **GS1 US Data Hub | Location** Assessment

Table A-3 Results about the Accuracy of **GS1 US Data Hub | Location**

GS1 US Data Hub Location	% fully aligned with the GPO Roster ⁶	% that needed to be adjusted to align the GPO Roster ⁷
Provider #1 GLN Records in GS1 US Data Hub Location	99.2%	0.8%
Provider #2 GLN Records in GS1 US Data Hub Location	98.9%	1.1%

A.5.5 Conclusion and Summary of Results

As shown in the table below, these study exercises revealed no significant variation between the GPO Roster and **GS1 US Data Hub | Location** in terms of accuracy and completeness.

Table A-4 Summary of Results

	GPO Roster		GS1 US Data Hub Location	
	Match %	Adjustment Needed	Match %	Adjustment Needed
Provider #1	91.95%	8.05%	99.2%	0.8%
Provider #2	99.2%	0.8%	98.9%	1.1%
Average	95.58%	4.4%	99.1%	.95%

A.6 QUESTION 2: Provider Self-Managed Hierarchies vs. GPO-Managed Hierarchies

A.6.1 Introduction

When it comes to comparing *Provider Self-Managed Hierarchies* to *GPO-Managed Hierarchies*, it is important to note that even the best *Self-Managed Hierarchies* do not often afford a 100% match. Nonetheless, there are certain known challenges to *GPO-Managed Hierarchies* including:

- Levels of hierarchy maintenance activity by GPOs varies.
- GPOs enumerate only to that level at which sales could be reported, so the hierarchy may not include all needed levels.
- Lack of or untimely hierarchy updates from provider member.
- GPO may have enumerated many locations for its roster that are not needed by the manufacturer.
- Duplicates.
- GPOs do not actively manage all locations in **GS1 US Data Hub | Location**, so information may become "stale."

⁶ The number of GLN records in **GS1 US Data Hub | Location** that aligned with GPO Roster (without adjustment), divided by the total number of GLNs in the provider's hierarchy in **GS1 US Data Hub | Location**

⁷ The number of GLN records in **GS1 US Data Hub | Location** that provider had to touch to align with GPO Roster, divided by the total number of GLNs in the provider's hierarchy in **GS1 US Data Hub | Location**

Therefore, the exercises for Question 2 sought to assess any discernable impact of these challenges on accuracy and completeness.

A.6.2 Central Question

Is there a significant difference in the accuracy and completeness of *Provider Self-Managed Hierarchies* versus *GPO-Managed Hierarchies* sufficient to support the industry impression that *GPO-Managed Hierarchies* are not effective for use by manufacturers in business transactions with distributors or providers?

A.6.3 Description of Exercise

- Participants: the Manufacturer, Distributor, and all four providers.
 - Two of the providers had *Self-Managed Hierarchies* in GS1 US Data Hub | Location, and two had *GPO-Managed Hierarchies*.
- The Manufacturer and Distributor extracted available account information on the participating providers from their respective Customer Account Master (e.g., geographics; GPO relationship; Bill to/Ship to; GLNs; etc.).
- The Manufacturer compared the GLNs they had identified for each provider account to the provider GLNs in **GS1 US Data Hub | Location** (two providers had *Self-Managed Hierarchies*, and two had *GPO-Managed Hierarchies*).
- The Distributor compared the GLNs they had identified for each provider account to the provider GLNs in the GPO Roster and GS1 US Data Hub | **Location**. (Again -- two of the GS1 US Data Hub | Location hierarchies were *Self-Managed Hierarchies*, and two were *GPO-Managed Hierarchies*.)
 - Distributors have traditionally used the GPO Roster for provider information because they have been less familiar with **GS1 US Data Hub | Location**, and because as a distributor, it is critical that they match to the roster for contract/chargeback purposes. Therefore, the Distributor in this exercise decided to test both to learn about the benefits of using GS1 US Data Hub | Location as a GLN source.

A.6.4 Manufacturer Exercise

Table A-5 Manufacturer Exercise Results

Manufacturer Results	Provider Self-Managed Hierarchies (GLN Source: GS1 US Data Hub Location)		GPO-Managed Hierarchies (GLN Source: Roster + GS1 US Data Hub Location)	
	Provider #1	Provider #2	Provider #3	Provider #4
Total Available Provider GLNs	131	269	695	7
Total Manufacturer Accounts for Provider	49	254	731	7
Manufacturer Accounts matched/mapped to a GLN ⁸	60%	67%	31%	71%
Additional GLNs that could have been matched/mapped with minimal additional effort ⁹	20%	7%	XX *	XX *
Total Match/Map Rate ¹⁰	80%	74%	31%	71%

⁸ The number of Manufacturer/Distributor Accounts matched/mapped to a GLN, divided by total number of Manufacturer/Distributor Accounts for Provider.

⁹ The number of additional Manufacturer/Distributor Accounts that could have been matched/mapped to a GLN with minimal additional effort, divided by total number of Manufacturer/Distributor Accounts for Provider.

¹⁰ The number of Manufacturer/Distributor Accounts matched/mapped to a GLN plus the number of additional Manufacturer/Distributor Accounts that could have been matched/mapped to a GLN with minimal additional effort, divided by total number of Manufacturer/Distributor Accounts for Provider.

Notes:

- Some “unmatched/unmapped” Manufacturer Accounts were not matched/mapped by Manufacturer because they are distributed locations, not direct sales.
 - * The Manufacturer chose not to go through the effort to identify “additional GLNs that could have been matched/mapped with minimal effort” (especially for the large account) because many of the “unmatched/unmapped” accounts were for “distributed locations.”
- To support completeness, the Manufacturer used 2-way matching for GPO-managed hierarchies: (1) take GLNs available in Data Hub | Location and match them to their accounts, and (2) take their accounts and match them to GLNs available in GS1 US Data Hub | Location. According to the Manufacturer, this enabled them to make sure there were no gaps in either data set that could get missed as a possible match.
- Provider 3:
 - First pass at GLN mapping (no pre-work with Customer)
 - Manufacturer Accounts matched/mapped to a GLN
 - 24% Manufacturer Accounts matched to GLNs available in GS1 US Data Hub | Location
 - 31% GLNs available in GS1 US Data Hub | Location matched to Manufacturer Accounts
- Provider #4:
 - Some pre-work with Customer
 - Manufacturer had 12 accounts for Provider #4. However, only 7 were required for transactions. Therefore, mapping all 12 was not necessary for this exercise. Instead, the focus was on mapping the 7 required.

A.6.5 Distributor Exercise

Table A-6 Distributor Exercise Results

Distributor Results	Provider Self-Managed Hierarchies (GLN Source: Roster + Data Hub Location)		GPO-Managed Hierarchies (GLN Source: Roster + GS1 US GS1 US Data Hub Location)	
	Provider #1	Provider #2	Provider #3	Provider #4
Total Available Provider GLNs	131	269	695	7
Total Distributor Accounts for Provider	36	74	277	10
Distributor Accounts matched/mapped to a GLN ⁸	72%	47%	100%	100%
Additional GLNs that could have been matched/mapped with minimal additional effort ⁹	19%	51%	NA	NA
Total Match/Map Rate ¹⁰	91%	98%	100%	100%

Notes:

- Some “unmatched/unmapped” Distributor Accounts were not matched/mapped by Distributor because they were not EDI accounts.

A.6.6 Conclusion and Summary of Results

These exercises found no significant difference between *Self-Managed Hierarchies* and *GPO-Managed Hierarchies*, signaling that the existing GPO enumeration is a valid and effective starting point. Moreover, study participants were able to demonstrate additional improvement over *Self-Managed Hierarchies* and *GPO-Managed Hierarchies* with very little effort.

Table A-7 Summary of Results

Provider Self-Managed Hierarchies	Initial Match % ¹¹	Final Match % ¹²	GPO-Managed Hierarchies	Initial Match % ¹¹	Final Match % ¹²
Manufacturer & Provider #1	60%	80%	Manufacturer & Provider #3	31%	31%
Distributor & Provider #1	72%	91%	Distributor & Provider #3	100%	100%
Manufacturer & Provider #2	67%	74%	Manufacturer & Provider #4	71%	71%
Distributor & Provider #2	47%	98%	Distributor & Provider #4	100%	100%
AVERAGE	62%	85.75%	AVERAGE	75.5%	75.5%

A.7 Key Observations

- During the review of one of the larger Providers, it was observed that multiple GLN levels (e.g., Ship-to and Deliver-to) were situated on the same hierarchy level (e.g., Level 4) in GS1 US Data Hub | Location.
- There were varying degrees of initial effort required for initiation of GLN sharing and use. The effort was dependent of various factors:
 - Manufacturer and Distributor stated that the initial effort to scrub and synchronize with a provider depended on size and complexity of the provider health system.
 - Provider stated that the initial effort to scrub and synchronize with Manufacturers/Distributors **was highly dependent on existing EDI maturity and accuracy, and the “cleanliness” of account set-up on the Manufacturer/Distributor side.**
 - Man-hour estimates for an initial effort ranged from 80-200 hours for a moderately complex health system.
 - Cross-functional resources are often needed, including: Master Data Analyst/Manager, EDI Representative (internal and external), IT representative, etc.
 - On-going efforts around GLN maintenance involve validation activity by the hierarchy owner. Estimates for this type of activity ranged from 3 hours/month (Manufacturer) to 80 hours/year (Provider) to 40 hours/100 locations (GPO).
- **There are several “triggers” that let business partners know there is a problem with a GLN; most notably, EDI transaction rejects and Solution Provider error messages/error logs.**
- GS1 US Data Hub | Location is not required for trading partners to transact using GLNs. So long as trading partners are sharing and synchronizing GLNs, they can successfully use those GLNs transactionally.

¹¹ Manufacturer Accounts matched/mapped to a GLN

¹² Initial Match plus additional GLNs that could have been matched/mapped with minimal additional effort

A.8 Additional Findings

- Recommended primary point-of-reference/source for GLNs:
 - *GPO-Managed Hierarchies* = a combination of GPO Roster and/or GS1 US Data Hub | Location
 - *Co-managed Hierarchies* = GS1 US Data Hub | Location
 - *Provider Self-Managed Hierarchies* = GS1 US Data Hub | Location
- Providers really want 100% of their transactions to be correct.
- Initiation of GLN sharing and use usually involves a cross functional team.
 - Potential cross-functional resources included: Master Data Analyst/Manager, EDI Representative (internal and external), and IT representative.
- Initiation of a GLN-based relationship between trading partners is typically driven by (1) a request from the provider to their manufacturer/distributor, and (2) an established EDI relationship between trading partners.
- **Most manufacturers/distributors use additional “attributes” about an account** to make further differentiation for internal uses (e.g., Class of Trade, Direct or Distributed channel, EDI/Non-EDI, etc.). These additional differentiators often drive whether or not a manufacturer/distributor would move toward GLN as an identifier for certain accounts.
- Numerous entities need to be notified when changes occur to the GLN, the hierarchy, or hierarchy ownership/contacts (e.g., Internal Provider teams, EDI VAN, Upstream/Down Stream trading partners, GPO, **GS1 US Data Hub | Location**, etc.).

A.9 Opportunities

- Further enumeration best practices or standard processes, especially with regard to a consistent hierarchy level enumeration process, would lead to further clarification of GLN data and a higher matching rate for GLN mapping efforts.
- Exercise participants agreed that the stated best practice of not loading any GLNs into their item masters without a dialogue with the account owner first should be strictly followed. In addition, only validated hierarchies should be loaded and the validations should have been done within the past year.
- Providers, manufacturers, and distributors **expect there to be only one “heavy lift” in the initial adoption/use of GLNs. Industry stakeholders need to commit to some “pre-work” of their own account master data to support a good, clean starting point.**
- The [results](#) comparing the Manufacturer Account master to available GLNs with no collaboration between the provider and the manufacturer still yielded GLN exact match results of between 24% and 30%. The Manufacturer believed that a quick match rate of at least double this figure could be achieved with low effort if the recommended best practice of collaborating with the provider on the mapping of GLNs to a manufacturer/distributor account master was used.

A.10 Recommended Next Steps

- Providers: Take ownership of your GLN hierarchy GS1 US Data Hub | Location, either directly or collaboratively with your GPO. Keep it simple: validate your existing GPO-assigned hierarchy and begin to transact with GLNs in basic transactions.
- Manufacturers/Distributors: Initiate collaborative mapping of GLNs to your existing account master for key accounts. Begin to transact with GLNs in basic business transactions.
- GPOs: Continue to maintain and validate existing hierarchies. Encourage providers to co/self-manage.



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GS1 US Corporate Headquarters

Princeton Pike Corporate Center, 1009 Lenox Drive, Suite 202
Lawrenceville, NJ 08648 USA
T +1 937.435.3870 | **E** info@gs1us.org
www.gs1us.org

Connect With Us

