

# Mayo Clinic/Cardinal Health GLN Implementation

## WHITE PAPER

Version 1.1

Published: May 2009

Revised: February 2010

Authored by: Kenneth D. Pelletier

Business Coordinator - Data Integrity

Supply Chain Management, Mayo Clinic

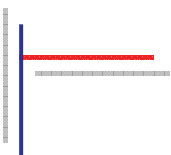
Improving Patient Safety and Supply Chain Efficiency with GS1 Standards

# TABLE OF CONTENTS

---

- EXECUTIVE SUMMARY .....3**
- INTRODUCTION .....4**
- THE CHALLENGE .....6**
- THE BUSINESS OPPORTUNITY .....6**
- INNOVATION IMPLEMENTATION .....6**
  - GS1 STANDARDS AND SOLUTIONS USED .....7
  - CREATING THE GLN HIERARCHY .....7
  - SUPPLY CHAIN PARTNERS SELECTED .....8
  - PLANNING INNOVATION, BUILDING CONSENSUS .....8
  - GLN PROJECT TEAM.....9
- PROJECT PLAN STEP-BY-STEP .....10**
  - PHASE 1: PRE-IMPLEMENTATION .....10
  - PHASES 2 THROUGH 5 .....11
  - ORGANIZATIONAL READINESS .....12
- PROJECT COSTS .....12**
- IMPLEMENTATION RESULTS.....13**
- IMPLEMENTATION BENEFITS .....13**
- LESSONS LEARNED .....13**
  - LOCATION RECONCILIATION.....13
  - EDI TRANSACTIONS.....14
  - CARDINAL HEALTH SYSTEM.....14
  - MAYO CLINIC DATABASE .....14
  - GHX SYSTEM.....14
- NEXT STEPS.....14**
- CONCLUSION.....15**
- ABOUT MAYO CLINIC.....16**
- ABOUT CARDINAL HEALTH.....16**
- ABOUT NOVATION.....16**
- ABOUT GHX.....17**
- ABOUT LAWSON.....17**
- ABOUT MEDITECH.....17**
- APPENDIX A: GLOSSARY OF TERMS .....18**
- APPENDIX B: MAYO CLINIC / CARDINAL HEALTH GLN LAWSON PROJECT PLAN .....20**
- APPENDIX C: MAYO CLINIC / CARDINAL HEALTH GLN MEDITECH PROJECT PLAN.....21**
- APPENDIX D: MEDITECH GLN PROJECT TEAM.....24**
- APPENDIX E: ORGANIZATIONAL TRAINING PRESENTATION .....25**

**APPENDIX F: MAYO CLINIC 850 PURCHASE ORDER MAP .....28**  
**APPENDIX G: MAYO CLINIC 850 EDI USING THE 'UL' IDENTIFIER .....29**  
**APPENDIX H: MAYO CLINIC CONFIGURATION OF MEDITECH FOR CARDINAL HEALTH.....30**  
**APPENDIX I: MAYO CLINIC ANNOUNCEMENT TO SUPPLIERS.....31**  
**APPENDIX J: RESOURCE LINKS .....32**



---

## EXECUTIVE SUMMARY

Utilizing the GS1 Global Location Number (GLN), Mayo Clinic and Cardinal Health have implemented standardized identifiers for accounts/locations as the essential first step in their effort to fully support the adoption of healthcare supply chain standards. During this collaborative project, both parties discovered that the GLN could be implemented swiftly and easily - requiring only weeks, as opposed to months or years. This white paper outlines the GLN implementation process used by Mayo Clinic and Cardinal Health, and identifies the lessons learned and the results achieved so that others may learn how to implement the GLN in their operations and realize similar success.

---

## INTRODUCTION

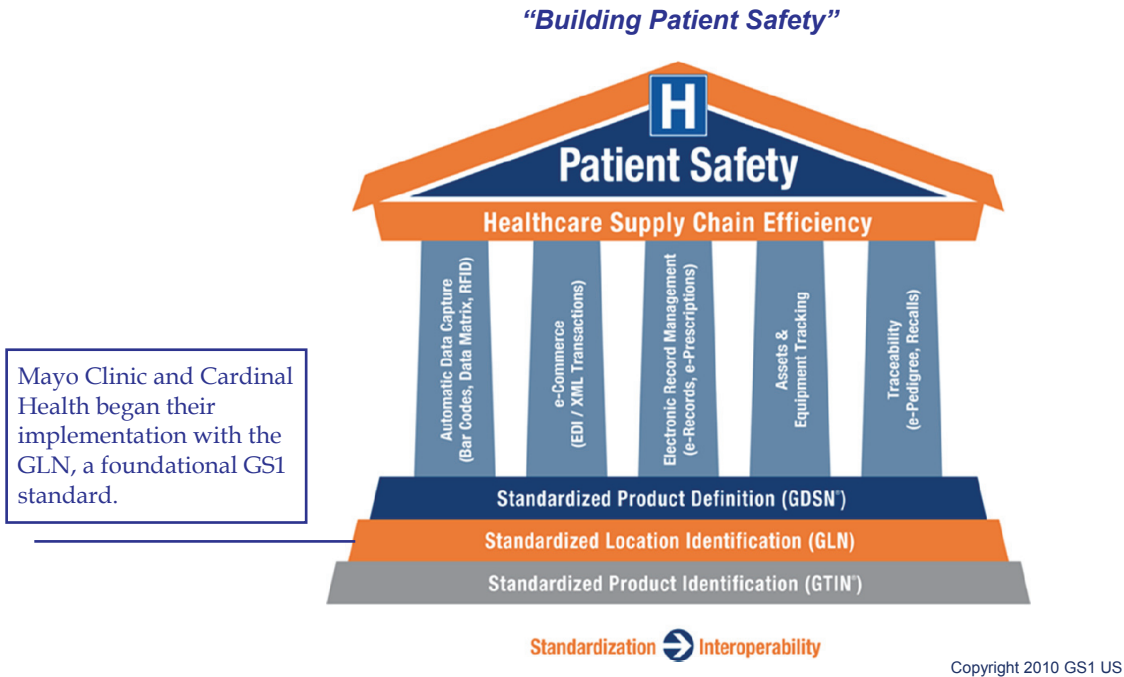
Poor data impacts many areas in the healthcare supply chain. Most importantly, poor data impacts patient safety when the supply chain fails to deliver the right medical product, to the right patient, at the right time. As a result, supply chain data standards are currently a major topic for the healthcare industry. In fact, standards adoption is now considered a requirement for effectively controlling both cost and quality in healthcare going forward.

In the past, there have been numerous discussions in healthcare with regard to the value of standards and which standards to use. Today, the discussion has shifted to how to implement standards, the first steps to take and timing. Industry groups like the Association for Healthcare Resource & Materials Management (AHRMM), Health Industry Group Purchasing Association (HIGPA), Healthcare Supply Chain Standards Coalition (HSCSC), and Strategic Marketplace Initiative (SMI), as well as various integrated delivery networks (IDNs), group purchasing organizations (GPOs), and suppliers, have all endorsed GS1 standards. In addition, many of the healthcare industry's supply chain partners, including Mayo Clinic, have voluntarily established the end of 2010 as the date by which they will adopt GS1 Global Location Numbers (GLNs) to replace custom account numbers in order to reduce costs and improve patient safety. This adoption target is known as the "2010 GLN Sunrise."

**[See Appendix J for a link to a detailed description of the 2010 GLN Sunrise.](#)**

Industry-wide implementation of data standards such as the GS1 System can improve supply chain data integrity. The GS1 System enables global and unique identification of products and locations, as well as the continuous, automatic update (i.e., synchronizing) of standardized product information across all supply chain partners. These standards provide the necessary foundation for achieving the best results when using complementary applications like automatic data capture, e-commerce, electronic record management, assets and equipment tracking, and traceability.

To illustrate this, Figure 1 below shows standardized product identifiers (GS1 Global Trade Item Numbers, or GTINs), standardized location identifiers (GLNs), and the Global Data Synchronization Network® (GDSN®) as the foundation of the “house” in building patient safety and an efficient supply chain. The pillars in the house represent the healthcare applications necessary to achieve patient safety and supply chain efficiency. The standards provide the interoperability required to support those applications and make all of it happen.



**Figure 1. Building Patient Safety with GS1 Standards**

Mayo Clinic firmly believes that supply chain data standards will greatly improve healthcare safety and efficiency, supporting their primary value that “the needs of patients come first.” In July 2008, Mayo Clinic and Cardinal Health collaborated to implement the GS1 GLN as their sole account/location identifier for Mayo Clinic Foundation’s Lawson MMIS system. In October 2009, both groups implemented a second instance using Meditech for the Mayo Clinic Health Systems. The smaller, autonomous Mayo Clinic Health Systems use Meditech, while the larger, non-autonomous Mayo Clinic Foundation uses Lawson. Mayo Clinic and Cardinal Health agreed that these GLN projects would be an innovative first step toward the 2010 GLN Sunrise.

This white paper was developed to document the process used by Mayo Clinic and Cardinal Health to implement GLNs in their organizations. It is intended to serve as a guide to help other providers and suppliers to rapidly implement and immediately realize the benefits that the GLN can bring to the healthcare industry. To that end, this paper explains the steps taken to implement this foundational GS1 standard, as well as the lessons learned and the results achieved at Mayo Clinic and Cardinal Health.

---

## THE CHALLENGE

Prior to this project, Mayo Clinic’s account and location numbers were not standardized across their supply chain partners. Instead, each Mayo Clinic location that was associated with a supplier had its own custom account number specific to that supplier. This required Mayo Clinic to manage the numerous individual account numbers assigned by their many vendors, which required significant resources and increased the likelihood for errors. As a result, this practice created an administrative burden and resulted in unnecessary expense.

Example of Account # Setup		
Vendor	Location	Account #
Vendor 1	Location 1	111111
Vendor 1	Location 2	111112
Vendor 1	Location 3	111113
Vendor 1	Location 4	111114
Vendor 2	Location 1	211111
Vendor 2	Location 2	211112
Vendor 2	Location 3	211113
Vendor 2	Location 4	211114

**Figure 2. Multiple account numbers for the same locations**

To illustrate this point, Figure 2 shows the Mayo Clinic account/location numbers used by various vendors. Mayo Clinic *Location 1*, for example, is identified as *Location# 111111* by *Vendor 1*, but as *Location# 211111* by *Vendor 2* - demonstrating how the same location can have numerous identification numbers. This approach fosters inaccuracy and inefficiency. Instead, each location should have one standard number (i.e., the GLN). Think of it as a mailing address: an identifier for a single location in the world that is globally unique to that location. No other organization, agency, or affiliate can use it to identify their locations, but all parties can and should use it to identify that location.

## THE BUSINESS OPPORTUNITY

Each GLN identifier is a unique, 13-digit number for a specific location. Implementing GLN enabled Mayo Clinic to replace the numerous custom account numbers for each location with one unique number (GLN) for each location. This simplified the exchange of supply chain information and provided Mayo Clinic with the opportunity to manage orders, vendor payments and rebates more effectively. Common location identifiers allow consistent data sharing with the GDSN, purchase orders, GPO rosters, and contracts.

## INNOVATION IMPLEMENTATION

While implementation is *not* a daunting task, it can seem like it at the start. Listed below are some of the resources available to help guide providers and suppliers through the process:

- (1) GS1 US Minnesota Pilot Project (2006-2007):** This pilot was conducted to develop GLN healthcare processes, setup and coordination. The final pilot report documents the findings, suggestions and lessons learned. The findings from the Minnesota Pilot helped guide Mayo Clinic and Cardinal Health’s GLN implementation. The final reports developed by the Minnesota pilot team should be reviewed prior to initiating a 2010 GLN Sunrise program.

---

(2) **GLN Healthcare Provider and Supplier Tool Kits:** How-to guides developed by the industry for implementing GLNs.

(3) **GS1 Healthcare US Website:** Provides tools and resources to guide an organization through GLN implementation. Contact information for GS1 US staff experts is also available.

(4) **Moving to Global Location Numbers (GLNs): Considerations for Healthcare Trading Partners:** A GHX educational paper discussing issues that healthcare supply chain partners need to consider as they transition from using multiple account numbers (for the same locations) to using GLNs.

(5) **Information documented within this white paper.**

**See Appendix J for links to these resources.**

## GS1 Standards and Solutions Used

- GS1 Global Location Number (GLN)
- GS1 US GLN Registry for Healthcare®

## Creating the GLN Hierarchy

Setting the scope of the effort required a focus on Mayo Clinic's internal processes. The hierarchy of an organization's locations can vary considerably, even with the same number of beds and the same mission in the same city. Business considerations of the parent organization and the business model [i.e., just-in-time (JIT) or central delivery] can affect the number of GLNs required for an individual organization. The GLN hierarchy that Mayo Clinic defined is shown below:

### Level 1 - Enterprise (corporate legal entity):

- Top Level of the Organization

### Level 2 - Entity:

- Logical Grouping of Locations for Contracting, Pricing and Spend Aggregation
- Usually Geographically Designated

### Level 3 - Location:

- Primarily the Receiving Location
- Mostly *Ship-to* Locations

### Level 4 - Location:

- Primarily Reserved for Future Coding of the *Deliver-to* Location
- Also Used for Special Handling (within a Receiving Location)

Mayo Clinic, like other providers, was initially assigned GLNs in the GLN Registry for Healthcare® by their GPO (in this case, Novation). Once registered, no other GS1-compliant organization will have the same GLNs. After the GLNs were assigned to Mayo Clinic, Mayo Clinic assumed ownership of their GLNs and hierarchy from their GPO in order to have hands-on management control of GLN alignment within their day-to-day operations and business strategy. A portion of the Mayo Clinic's hierarchy as listed in the GLN Registry is shown in Figure 3.

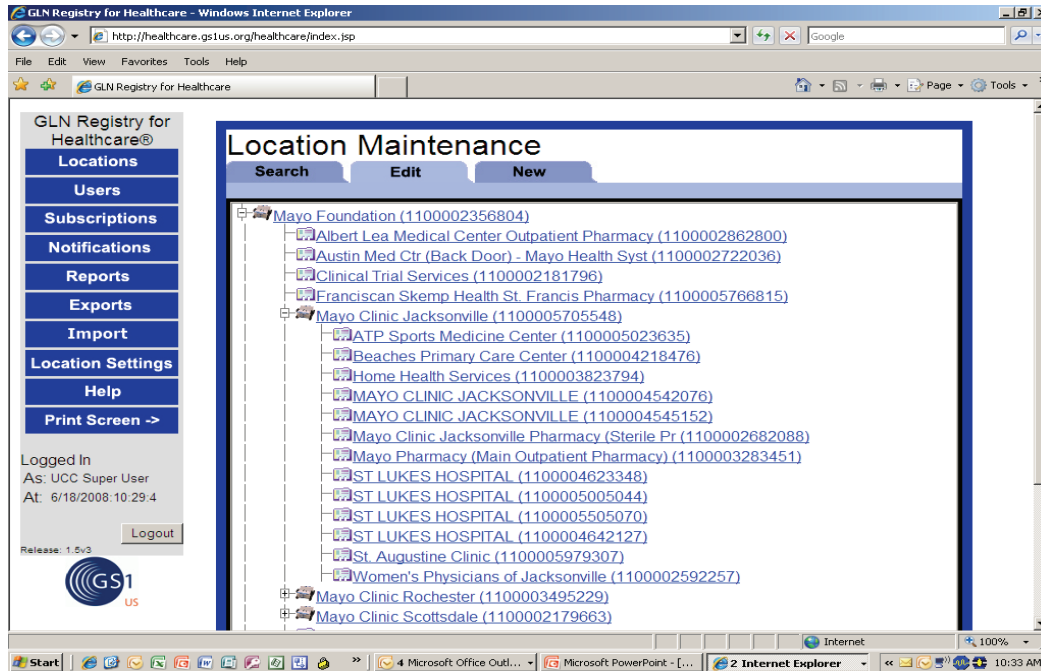


Figure 3. Mayo Clinic hierarchy as shown in the GLN Registry

## Supply Chain Partners Selected

To limit project scope, Mayo Clinic worked with a single distributor, Cardinal Health, and with their mutual electronic business-to-business exchange partner, Global Healthcare Exchange (GHX).

## Planning Innovation, Building Consensus

While use of GLNs in retail and the grocery industry is common, the use of GLNs in healthcare is just beginning. In initial meetings, Mayo Clinic and Cardinal Health learned that they had similar GLN adoption aspirations: they both wanted to be early adopters of standards. Mayo Clinic was the first hospital to approach Cardinal Health about transacting supply orders using GLNs.

Mayo Clinic and Cardinal Health held joint meetings to determine the scope of and the expectations for the project to transact with GLNs. After examination of their business processes, they both agreed that GLNs would work well. Once this step was completed, both parties made a commitment to move forward.

Mayo Clinic and Cardinal Health realized that using the GLN as a standard location identifier was something that would benefit each organization, as well as the healthcare industry. Each organization had the designated resources, capacity, and business logic to make the GLN work, and both recognized that in order for the project to succeed, they would need to work collaboratively. It was decided that each group would create their own internal project plans which would be combined later. At this point, it was time to identify team members and delegate responsibilities.

### GLN Project Team

The GLN team included members from both Mayo Clinic and Cardinal Health. The selected team members were accountable to the *Project Sponsors* from each respective partner. A *Project Lead* was required from each organization to manage the project plans and oversee the team activities. Similarly, each partner required *Implementation Analysts* to understand the requirements and to configure the systems and processes. A *Functional Lead* and an *eBusiness Lead* were required at Cardinal Health to ensure changes to systems and processes did not inhibit current operations. A Mayo Clinic *Technical Specialist* and Cardinal Health *EDI Mapping Specialist* were also required to implement changes to the EDI code. The makeup of the team for the Mayo Foundation / Cardinal Health implementation is shown below.

Team Member	Company	Role
Bill Zimmerman	Cardinal Health	Sponsor
Joe Dudas	Mayo Clinic	Sponsor
Tom Krueger	Cardinal Health	Project Lead
Rita Sinclair	Cardinal Health	eBusiness Lead
Jill Fliehman	Cardinal Health	Functional Lead
Debbie Petersen	Cardinal Health	Implementation Analyst
Bryan Allen	Cardinal Health	Implementation Analyst
Theresa Franckowiak	Cardinal Health	EDI Mapping
Ken Pelletier	Mayo Clinic	Project Lead
Russ Mullins	Mayo Clinic	Implementation Analyst
Ross Hamernik	Mayo Clinic	IT Technical Specialist

Figure 4. Mayo Clinic / Cardinal Health “Lawson Implementation” Team Members

See Appendix D for the Meditech GLN Implementation Team Members.

---

In addition to daily communication through email and phone conversations, the team met weekly to discuss issues, questions and items completed. It was essential that both partners maintained total transparency regarding the project status, timelines and capabilities.

## PROJECT PLAN STEP-BY-STEP

The project was broken up into several phases:

- Phase 1: Pre-Implementation (Planning and Mapping)
- Phase 2: Cardinal Health Base System (Standard Order Processing)
- Phase 3: Cardinal Health JIT System (Value Added Processing)
- Phase 4: New ERP Locations (*because Mayo Clinic had an Enterprise Resource Planning (ERP) implementation project running simultaneously*)
- Phase 5: Wrap-Up (Resolve Lower Priority Issues)

### Phase 1: Pre-Implementation

The Pre-Implementation Phase of the project was straightforward and sequential:

- (1) Mayo Clinic created a cross-reference worksheet to map the Cardinal Health account numbers to GLNs.
- (2) Cardinal Health reviewed the mapping for account accuracy.
- (3) GHX sent Mayo Clinic a list of the *Ship-to* locations for Mayo Clinic that were already in the GHX system, and Mayo Clinic returned a validated list of the specific *Ship-to* locations and their associated GLNs that needed to be added to the GHX system (known as a “boarding request”). \*
- (4) GHX sent the boarding request to Cardinal Health to update their system with the new GLN numbers as well.
- (5) Cardinal Health set up their system to transact with both the GLN and original account number, enabling each company to test GLNs while still transacting with current account numbers.

\* NOTE: GHX had to modify their system mapping to transact with GLNs. It is highly recommended to work with your company’s electronic business-to-business exchange partner from the beginning of a GLN conversion.

**See Appendices B and C for the project plans for the Lawson and Meditech Implementations.**

---

## Phases 2 through 5

During each subsequent phase of the project, Mayo Clinic first transacted in their test/development environment, and then repeated the test in their production environment. The steps performed in each of those environments are detailed below.

### Mayo Clinic Test Environment Steps:

- (1) Mayo Clinic's test system was used to create test EDI 850 Purchase Orders using the GLN *Ship-to* locations. Mayo Clinic processed these orders and passed the transactions to GHX.
- (2) GHX processed the 850 Purchase Order transactions and forwarded them to Cardinal Health.
- (3) Cardinal Health processed these orders and created the 855 Purchase Order Acknowledgment, 856 Advance Shipping Notice and 810 Invoice transactions - all of which were then passed to GHX.
- (4) GHX processed the 855, 856 and 810 transactions, and then passed them to Mayo Clinic.\*
- (5) Throughout the entire testing process, the joint GLN team monitored every step. Once each side was comfortable with the Mayo Clinic test results, the process moved to production.

\* NOTE: While Mayo Clinic did not use the GLN on any Mayo Clinic inbound transactions (i.e., 855 Purchase Order Acknowledgments, 810 EDI Invoices, and 856 Ship Notices), the team felt it important to test inbound transactions for future use.

### Production Environment Steps:

- (1) Initially, test 850 Purchase Orders were sent to Cardinal Health from Mayo Clinic.
- (2) For three days, each order was monitored for errors and corrections.
- (3) Once the GLN team was comfortable with the standards-based solution, all Mayo Clinic-to-Cardinal Health orders were transacted using only GLNs.

It is important to note that Cardinal Health Base and Cardinal Health JIT systems were done sequentially.

---

## Organizational Readiness

Internal training is necessary for buyers and customer support to have a successful implementation. It is necessary for end users to understand the changes so that they are able to transact via phone and fax if needed. Training was conducted with the Mayo Clinic procurement staff and a Cardinal Health sales representative.

**See Appendix E for a copy of this training presentation.**

## PROJECT COSTS

Resourcing was the only significant cost for the project. It was estimated that 2.5 Full Time Equivalents (FTEs) would be required over a period of six months. During execution of the project, actual FTEs needed were less than estimated. No incremental budget requests were made to staff the project or to make the minor system changes needed. Figure 5 shows the resource allocation breakdown for the six month period for the Mayo Clinic GLN implementation.

Company	Roles	FTE
<b>Cardinal Health</b>	Project Sponsor	0.1
	Project Lead	0.25
	Functional Lead	0.25
	Implementation Analyst(s)	0.5
	EDI Mapping	0.1
<i>Cardinal Health Total</i>		1.2
<b>Mayo Clinic</b>	Project Sponsor	0.1
	Project Lead	0.5
	Implementation Analyst	0.25
	Programmer	0.25
<i>Mayo Clinic Total</i>		1.1

**Figure 5. Resource allocation breakdown**

---

## IMPLEMENTATION RESULTS

- Mayo Clinic converted 58 custom account numbers to GLNs in the following Mayo Clinic Health System facilities:

Mayo Foundation	48 GLNs
Austin	1 GLN
Red Cedar	1 GLN
Albert Lea	1 GLN
Fairmont	1 GLN
ISJ	4 GLNs
Lake City	2 GLNs

- Mayo Clinic was able to convert approximately 50,000 order lines to the GLN in February 2009 as a result of the Lawson implementation.
- Mayo Clinic was able to convert approximately 60,000 order lines to the GLN in November 2009 – which accounted for 85.6% of total EDI orders for November 2009 as a result of the Lawson and Meditech implementations.
- In 2009, \$70M dollars of product was transacted between Mayo Clinic and Cardinal Health using the GLN.

## IMPLEMENTATION BENEFITS

Price accuracy improves with location identification accuracy. Location identification errors can cause loss of discount eligibility as well as tier qualification and rebate disputes.

- Mayo Clinic / Cardinal Health price accuracy is currently 99.5%. All other suppliers average 95% accuracy. Superior price accuracy is attributed to not only GLN, but also to the commitment that both organizations make to price integrity and associated improvement efforts.

## LESSONS LEARNED

During the project, the GLN team worked through several challenges:

### Location Reconciliation

Mayo Clinic had a warehouse with several receiving locations because certain inventory could not be mixed (e.g., flammables and non-flammables). Routing to distinct warehouse locations and use of distinct shipping labels were required. While originally there was only one GLN assigned to that warehouse, Mayo Clinic had to go back and create four new Level 4 GLNs for the four distinct locations within that warehouse.

NOTE: These are the only Level 4 locations currently configured for Mayo Clinic. In the future, Mayo Clinic may choose to standardize *Deliver-to* locations and utilize reserved Level 4 for this purpose.

---

## EDI Transactions

The EDI 850, 810, 855, and 856 transaction set needed to use a specific qualifier code for GLN in its mapping process. Specifically, the outbound mapping N1 segment (*Ship-to* information) needed to be changed from 91 to UL. (UL is the ANSI standard for a GLN when used as a *Ship-to*.) Otherwise, the updates needed were typical of EDI implementations.

**See Appendix F for Mayo Clinic's 850 Purchase Order Map and Appendix G for Mayo Clinic's 850 EDI using the "UL" identifier.**

The Meditech system was easily configured for Cardinal Health to accommodate the use of the GLN.

**See Appendix H for the Meditech configuration.**

## Cardinal Health System

The Cardinal Health Base system had the functionality for a generic location identifier. However, the JIT system had to be modified to accept a 13-digit GLN.

## Mayo Clinic Database

Mayo Clinic's custom account database could only hold 12 characters. The global standard for GLN is 13 digits. Mayo Clinic had to change this field length to accommodate 13 digits.

## GHX System

GHX found for their subscribers that the most effective way to reconcile a provider's EDI *Ship-to* locations was to send the provider an export of what GHX had on file for that provider and to have the provider validate the locations and notify GHX of any changes. This was determined to be preferable to the original approach whereby the provider would send GHX *Ship-to* location information via a SuperSAW document, which did not ensure reconciliation.

## NEXT STEPS

Mayo Clinic has stated that the GLN will be required by all suppliers by the end of 2010. Mayo Clinic's sourcing plan includes transacting with its healthcare suppliers using GLN location identifiers exclusively.

**See Appendix I for Mayo Clinic's Announcement to Suppliers.**

---

## CONCLUSION

Mayo Clinic and Cardinal Health are among the first organizations in healthcare to implement GLNs in supply chain transactions. They successfully implemented GLNs in a large location using Lawson and in autonomous locations using Meditech. The use of GLNs improves supply chain management performance, and GLNs used in conjunction with other GS1 standards promise even greater performance. Similarly, the more supply chain partners that adopt GS1 standards, the greater the benefits for the entire industry.

A strong project plan with a dedicated team made this implementation successful. It is necessary to educate the team, and get their feedback and agreement for the tasks that need to get done. It is also necessary to conduct joint team meetings where all team members attend and communicate with everyone within the project. And finally, everything should be tested.

With the 2010 GLN Sunrise date quickly approaching, it is highly recommended that healthcare supply chain partners use the resources within this white paper and those available from GS1 Healthcare US to begin implementing GLNs. It is the opinion of the author that the GLN was easy to implement and that there is an abundance of willing partners. In conclusion, the GLN implementation was straightforward, technologically feasible, and seamless for operations to implement.

---

## ABOUT MAYO CLINIC

“Mayo Clinic is a not-for-profit medical practice dedicated to the diagnosis and treatment of virtually every type of complex illness. The needs of the patient come first. [A patient] will see as many doctors, specialists and other health care professionals as needed to provide comprehensive diagnosis, understandable answers and effective treatment.”

## ABOUT CARDINAL HEALTH

“Headquartered in Dublin, Ohio, Cardinal Health, Inc. (NYSE: CAH) is a *Fortune* 18 health care services company that improves the cost-effectiveness of health care. As the business behind health care, Cardinal Health helps pharmacies, hospitals and ambulatory care sites focus on patient care while reducing costs, improving efficiency and quality, and increasing profitability. As one of the largest health care companies in the world, Cardinal Health is an essential link in the health care supply chain, providing pharmaceuticals and medical products to more than 40,000 locations each day. The company is also a leading manufacturer of medical and surgical products, including gloves, surgical apparel and fluid management products. In addition, the company supports the growing diagnostic industry by supplying medical products to clinical laboratories and operating the nation’s largest network of radiopharmacies that dispense products to aid in the early diagnosis and treatment of disease. Cardinal Health employs more than 30,000 people worldwide. More information about the company may be found at [www.cardinalhealth.com](http://www.cardinalhealth.com).”

## ABOUT NOVATION

"Novation was established Jan. 1, 1998, when VHA Inc. and University HealthSystem Consortium (UHC), two national health care alliances, consolidated their supply-contracting functions. Based in Irving, Texas, Novation acts as the supply contracting company for nearly 25,000 VHA and UHC member organizations to help them manage and reduce supply costs. The health care markets served by Novation include acute hospitals and systems, academic medical centers, ambulatory care and physician clinics, home health and long-term care facilities.

Novation also provides supply contracting services to thousands of health care, education, municipalities and corporate members of Provista, a supply chain improvement company jointly owned by VHA and UHC, to serve health care organizations that are not members of either alliance, as well as non-health care markets. More information about the company may be found at [www.novationco.com](http://www.novationco.com)."

---

## ABOUT GHX

“A pioneer in the early business-to-business exchange market, GHX’s original focus was building an electronic trading exchange where suppliers and providers could use a single connection to do business with multiple trading partners. It has survived and thrived by staying true to its core focus: making healthcare more efficient.

GHX has become a collaborative community connected through a robust, reliable and scalable infrastructure where providers and suppliers can conduct business with one another electronically. Today, GHX delivers customers a wide range of offerings that drive better efficiency, reduce costs and improve operational performance through:

- supply chain, accounts payable and sales force automation
- content, contract and inventory management
- business intelligence

More information about the company may be found at [www.ghx.com](http://www.ghx.com).”

## ABOUT LAWSON

"Lawson provides business application software and services that help healthcare organizations save time and reduce costs by managing three key operational resources: people, supplies and financial assets. Lawson solutions provide a solid operational foundation, so providers can focus on their mission – providing quality patient care. For more information, visit [www.lawson.com/healthcare](http://www.lawson.com/healthcare)."

## ABOUT MEDITECH

“A leading software vendor in the health care informatics industry for 40 years, MEDITECH provides integrated software solutions that meet the information needs of health care organizations worldwide. The organizations we serve include hospitals, ambulatory care centers, physicians' offices, long term care and behavioral health facilities, and home health organizations.”

---

## APPENDIX A: GLOSSARY OF TERMS

**Boarding Request:** The process of adding locations with GHX.

**Electronic Data Interchange (EDI):** The computer-to-computer exchange of structured information, by agreed message standards, from one computer application to another by electronic means and with a minimum of human intervention. This includes business transactions, such as orders, confirmations and invoices, between organizations.

**Global Data Synchronization Network® (GDSN®):** The GS1 Global Registry and a network of interoperable, certified Data Pools that enable data synchronization per GS1 System standards.

**Global Location Number (GLN):** The globally unique GS1 identification number for legal entities, functional entities and physical locations. The Global Location Number is 13 digits, comprised of a GS1 Company Prefix, a Location Reference and a Check Digit. The associated name, address, and class of trade are “tied” to each unique number, and each GLN is specific to only one exact and very precise location within the world.

**GLN Healthcare Provider & Supplier Tool Kits:** The Global Location Number (GLN) Healthcare Provider and Supplier Tool Kits are how-to guides for implementing GLNs for standardized party and location identification. These guides are available free online from GS1 Healthcare US. (See *Appendix J* for a link to each tool kit.)

**GLN Registry for Healthcare®:** A comprehensive and accurate registry of healthcare facilities and suppliers in the United States, with corresponding GLNs. The Registry keeps track of organizational hierarchy information such as name, address, and class of trade.

**GS1®:** GS1 is a leading global organization dedicated to the design and implementation of standards and solutions to improve the efficiency and visibility of supply and demand chains, both globally and across sectors. GS1 is a fully integrated global organization, with 108 Member Organizations (like GS1 US™) serving over a million companies doing business across 150 countries. Together, GS1 and its subsidiaries and partnerships connect companies with standards-based solutions that are open, consensus-based and universally endorsed.

**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 more than a dozen local GS1 Healthcare user groups around the world that supports the adoption and implementation of global standards developed by GS1.

**GS1 System:** The specifications, standards, and guidelines administered by GS1. Through the Global Standards Management Process (GSMP), GS1 manages the GS1 System to maintain the most implemented standards in the world.

---

**GS1 US™:** GS1 US is the Member Organization of GS1 that serves companies in the United States. As such, it is the national implementation organization of the GS1 System dedicated to the adoption and implementation of standards-based, global supply chain solutions in the United States. GS1 US currently serves over 200,000 U.S. member companies -- 16,000 of which are in healthcare.

**Global Trade Item Number® (GTIN®):** Globally unique GS1 identification number used to identify trade items, which includes both products and services that are sold, delivered, and invoiced at any point in the supply chain.

**Just-In-Time (JIT):** Stock-control system in which goods are produced and delivered as they are required. It is designed to eliminate waste and avoid the need for large inventories.

**SuperSAW:** SuperSAW is a GHX registration worksheet that helps ensure provider boardings and implementations are accurate. The customer will use the SuperSAW to detail where they currently get shipments, account numbers for those locations, and how those shipments are to be billed. The SuperSAW enables the user to select vendors and transaction sets they would like to use with each vendor.

## APPENDIX B: MAYO CLINIC / CARDINAL HEALTH GLN LAWSON PROJECT PLAN

**NOTE:** Lawson Version 9.0.0.7.199 used for this implementation.

STEP	Process
	<b>Pre Implementation 850/855/810</b>
1	Mayo Clinic identifies the applicable GLN values and passes crosswalk table to vendor cross referencing GLN to 'ship to' account.
2	<b>Vendor</b> reviews data and ask questions.
3	Request is sent to GHX for the account addition to be boarded on their servers via SuperSAW document.
4	GHX loads value on their servers and verifies with vendors.
5	<b>Vendor</b> reviews data and ask questions.
6	<b>Vendor</b> modifies ANSI Code to accept ANSI standard associated with GLN values.
7	SCI E-Commerce Support communicates GLN add to vendor EDI contact. Vendor EDI contact is responsible for verification that new value is loaded in their system(s).
8	Once GLN add is verified by GHX and affected vendor, value is added to the YM05 in SYSINT2 for testing purposes.
9	Mayo Clinic creates test orders in Lawson and transmits them via EDI through GHX.
10	<b>Vendor</b> processes test orders and the 855 is passed back to GHX.
11	855 loaded in GHX.
12	855 is passed to Mayo Clinic into SYSINT2.
13	PO122 is generated from the 855 to verify order processed correctly.
14	Mayo Clinic communicates the testing and the plan to move forward.
	<b>MCR/LA/MCF/MCA/EU Go Live Production</b>
15	Mayo Clinic updates YM05 with GLN values in production.
16	Mayo Clinic verifies that vendor location is setup for EDI issue method in production in the PO10.2.
17	Mayo Clinic notifies buyers, GHX, and EDI coordinators about that we are going live.
18	Mayo Clinic creates orders in Lawson and transmits them via EDI through GHX.
19	<b>Vendor</b> processes orders and the 855 is passed back to GHX.
20	855 loaded in GHX.
21	855 is passed to Mayo Clinic into production via the EDI Inbound process.
22	PO122 is generated from the 855 to verify order processed correctly.
23	Mayo Clinic monitors orders for 3 business days via Lawson, GHX, and vendor website if available and communicates to Mayo and
24	Mayo Clinic 810 are passed by <b>vendor</b> and are monitored in GHX MyExchange web portal and Lawson.
25	Mayo Clinic communicates with buyers and vendors that implementation has been completed.

\***NOTE:** MCR stands for Mayo Clinic Rochester. LA stands for La Crosse. MCF stands for Mayo Clinic Florida. MCA stands for Mayo Clinic Arizona. EU stands for Eau Claire. YM05 is the transaction mechanism to launch EDI orders. SYSINT2 is Mayo Clinic's Test System.

## APPENDIX C: MAYO CLINIC / CARDINAL HEALTH GLN MEDITECH PROJECT PLAN

**NOTE:** Meditech Version 5.63 used for this implementation.

<b>Scope</b>
Enable the Meditech MMIS System to be able to generate an EDI 850 with the appropriate GLN within the transaction.
Starting with Cardinal Health and with potential for other distributors.
<b>Executive Champions</b>
<b>Roles</b>
Project Manager will provide project management with assistance from IT.
Project Manager responsibility is to keep the implementation on-track.
IT role will be to assist Project Manager with the MHS stakeholders' information and communication needs.
Project Sponsor has identified the rest of the stakeholders involved in this project and secured the technical and operational resources needed.

Steps	Tasks	Responsible	Estimated	Actual
1	Identify Participants			
2	Executive champion			
3	Announcement to Mayo staff			
4	Kick off meeting with Project Sponsor	Project Sponsor		
5	Validate and Reconcile Locations			
6	Secure resources			
	Meditech Instances and Resources			
	Project Manager to send emails	Project Manager		
	Confirm resources & get commitment	Provider staff		
	Operational Resources	Provider staff		
	GHX Resource			
	Additional logins as needed			
7	Regular team meeting call			
<b>Process: DESIGN</b>				
Steps	Tasks	Responsible	Estimated	Actual
8	Team kick off - account/GLN Reconciliation			
9	Mayo Health Systems identifies applicable GLN values and provides crosswalk to Cardinal Health cross referencing GLN to ship to accounts	Provider staff		
10	Cardinal Health reviews data and asks questions	Cardinal Health		
11	Finish GLN Enumeration at Mayo Health System facilities	Master Data Management		
12	Reconcile GLN Registry with Cardinal Health - all sites	Provider, Cardinal Health, Transaction Mechanism (GHX)		
13	Finish Roster by defining <i>Ship-to</i> addresses with VHA	Master Data Management/ GPO		
14	VHA and Mayo Pre transaction assessment	Master Data Management/ GPO		

Steps	Tasks	Responsible	Estimated	Actual
15	Small mapping change - 2 char field indicating that is a GLN			
	Have we identified the IT resource			
16	Does that facility use an 810, 856			
17	Cardinal Health Value Link or Cardinal Health Account #			
18	Different GLN if value link vs. account #			
19	Add manual processes - call in - customer service			
20	Training for users - (could be same person)			
<b>Process: TESTING</b>				
21	Request is sent to GHX for the account addition to be added to the SuperSAW Document			
22	GHX to craft a no charge Scope of Work outlining the services to be delivered to accommodate the Meditech facilities. Draft to follow by end of week	Transaction Mechanism (GHX)		
23	Mayo team to provide contact person and information so that GHX can gain clarity around Meditech's ability to hold and communicate GLN information in the same manner that Lawson does. GHX will also investigate readiness of the Connect plus servers to accommodate the service at these sites.	Transaction Mechanism (GHX)		
24	GHX and Mayo team to change the GHX electronic ID (i.e., the GHX account number) hierarchy to match the GLN Registry so that set ups for supplier 2-n become less work for all involved.	Transaction Mechanism (GHX)		
25	GHX loads values on servers and verifies with Cardinal Health	Transaction Mechanism (GHX)		
26	Cardinal Health reviews data and asks questions	Transaction Mechanism (GHX)		
27	Cardinal Health verifies ANSI code to accept ANSI standard associates with GLN values	Transaction Mechanism (GHX)		
28	Mayo Health System E-commerce Support communicates GLN add to Cardinal Health EDI contact. Cardinal Health EDI contact is responsible for verification that new value is loaded into their systems	Transaction Mechanism (GHX)		
29	Once the GLN is verified by GHX and Cardinal Health, value is added to the testing system	IT/ Transaction Mechanism (GHX)		
30	Mayo Health Systems creates test orders in Meditech and transmits them through GHX (test 850)	Mayo IT		
31	Cardinal Health processes orders and passes back the test 855 to GHX	Mayo IT		
32	Test 855 is loaded in GHX	Transaction Mechanism (GHX)		
33	Test 855 is passed back to Mayo Health Systems	Transaction Mechanism (GHX)		
34	Acknowledgement report is generated from the test 855 to verify that order is processed correctly	Mayo IT		
35	Mayo Health System communicates the testing and the plan to move forward	Mayo		
36	Development of Supplier Communications			

Process: LIVE				
Steps	Tasks	Responsible	Estimated	Actual
37	Mayo Health System updates GLN values in production			
38	Mayo Health System verifies that Cardinal Health is setup for EDI issue method in production	Mayo IT		
39	Mayo Health System notifies buyers, GHX and EDI coordinators that we are going live	Mayo IT		
40	Mayo Health System creates order in Meditech and transmits through GHX via EDI (Production 850)	Mayo IT		
41	Cardinal Health processes orders and passes back the Production 855 to GHX	Cardinal Health		
42	Production 855 is loaded in GHX	Cardinal Health		
43	Production 855 is passed to Mayo Health Systems via EDI inbound process	GHX		
44	Acknowledgement report is generated from the production 855 to verify PO accuracy	GHX		
45	Mayo Health System monitors for 3 business days via Meditech, GHX and Cardinal Health website if available and communicates issues to Mayo Health System	Mayo		
46	Mayo Health Systems 810 are passed by Cardinal Health and are monitored by GHX MyExchange web portal and Meditech	Mayo		
47	Mayo Health System communicates with buyer's and Cardinal Health's that implementation has been completed	Mayo		
48	GLN EDI capability within Meditech complete			
49	UL Mapping Change			

## APPENDIX D: MEDITECH GLN PROJECT TEAM

Team Member	Company	Title
Bill Zimmerman	Cardinal Health	Sponsor
Joe Dudas	Mayo Clinic	Director Accounting and Supply Chain Informatics
Tom Krueger	Cardinal Health	Project Lead
Rita Sinclair	Cardinal Health	eBusiness Lead
Jill Fliehman	Cardinal Health	Functional Lead
Debbie Petersen	Cardinal Health	Implementation Analyst
Bryan Allen	Cardinal Health	Implementation Analyst
Theresa Franckowiak	Cardinal Health	EDI Mapping
London Johnson	Cardinal Health	Account Management
Ali Brown	GHX	Director, Business Operations, Exchange Services
Paul Cronin	GHX	Project Lead
Kim Tucker	GHX	Functional Lead
Josh Skiba	GHX	Implementation Lead
Jonathan Fitch	GHX	Implementation Analyst
Karen Wolfe	Mayo Clinic	Supply Chain Supervisor Master Data Management
Charles Parsons	Mayo Clinic	Materials Management Director
Russ Mullins	Mayo Clinic	Implementation Analyst
Chris Dixon	Mayo Clinic	Operations Analyst Informatics
Mark Rofshus	Mayo Clinic	Director of Materials
Scott Wickman	Mayo Clinic	Supply Chain Informatics Manager
Ken Pelletier	Mayo Clinic	Project Lead
Ross Hamernik	Mayo Clinic	Implementation Analyst
Mary Bauer	Mayo Clinic	EDI Mapping
Sabrina Ryan	Mayo Clinic	EDI Mapping
Brandy Erickson	Mayo Clinic	EDI Mapping
Jill Knaack	Mayo Clinic	EDI Mapping
Robin Schwemmler	Mayo Clinic	EDI Mapping
Sue Whitman	Fairmont Medical Center	Project Lead
Kathy Enberg	Lake City Medical Center	Project Lead
Jenna Creaser	Red Cedar Medical	Project Lead
Brian Terleski	Austin Medical Center	Project Lead
Marie High	Novation	Project Manager
Sarah Watson	Novation	Project Coordinator
Dawn Burtram	Novation/VHA	GLN Consultant
Jay Bass	VHA	Director of Membership
Kathy Ivanca	VHA	Director Supply Chain Services
Rebecca Blasiesing	VHA	Senior Director, Networks
Dennis Byer	Novation	Senior Director SCDM & Industry Standards

# APPENDIX E: ORGANIZATIONAL TRAINING PRESENTATION

**GLN**



**GLOBAL LOCATION NUMBER**


GLN


- What is a Global Location Number (GLN)?
  - A globally unique 13-digit identification number used for legal entities, functional entities, and physical locations.

**Healthcare Issues**


Too many (identifiers / rosters) for same location  
Results Confusion, lost shipment and inefficiency

- SAINT JOHN'S QUEENS HOSPITAL  
1100004570208
- ST. JOHN'S QUEENS HOSPITAL  
102084547
- SAINT JOHN'S QUEENS HOSPITAL  
JACIE
- SAINT JOHN'S QUEEN HOSPITAL  
50103000431
- SAINT JOHN'S QUEEN'S HOSPITAL  
CA2855
- ST. JOHN'S QUEENS HOSPITAL  
QM 12345

  
Many Different names  
different location numbers  
for just 1 Hospital

 **Healthcare with  
GLN Registry for Healthcare®**

- SAINT JOHN'S QUEENS HOSPITAL
- 1100004570208

  
One standard locator GLN  
One address rationalized through  
US Postal Service

**GLN where is it stored in  
Lawson**

- IC02 Location

Company: 100 MAYO MD MED EDU AND RESEARCH  
Location: (MAYO) MAYO CLINIC CAMPUS - MCI

Miscellaneous

Default PO Process Level: [dropdown]  
Default PO Code: [dropdown]  
Health Industry Number: [dropdown]  
**Global Location Number: 1100004570208**  
Sell Tax Code: [dropdown]  
Purchasing Tax Code: [dropdown]

Roles

Vendor: [dropdown]  
Purchase From: [dropdown]  
Customer: [dropdown]  
Ship To: [dropdown]  
Replenishment Requester: [dropdown]

**PROVIDER**

- STANDARD SHIP TO IDENTIFICATION
  - ONE LOCATION EQUALS MANY
    - ACCOUNT NUMBERS
    - SITE DESCRIPTIONS
    - ATTRIBUTES
    - DATA INTEGRITY TEAMS
  - 12,000 VENDORS = 3,500 ACCOUNT #'S
    - GLN IMPLEMENTATION = 200 ACCOUNT #'S

## Examples

Below are 7 different account numbers for product delivery to the shipping address for JAMCJ. We can go to one number – GLN -1100004542076

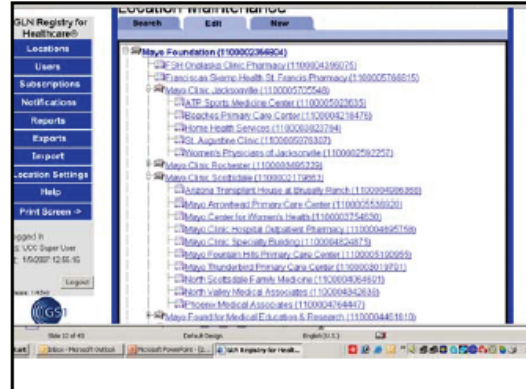
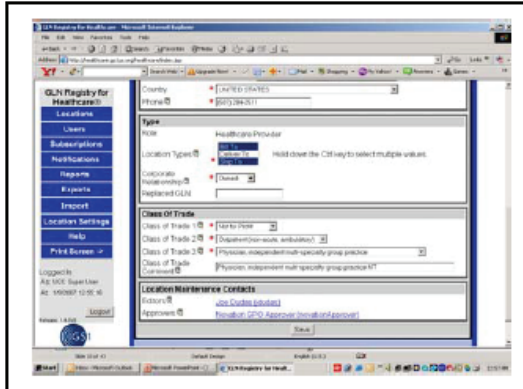
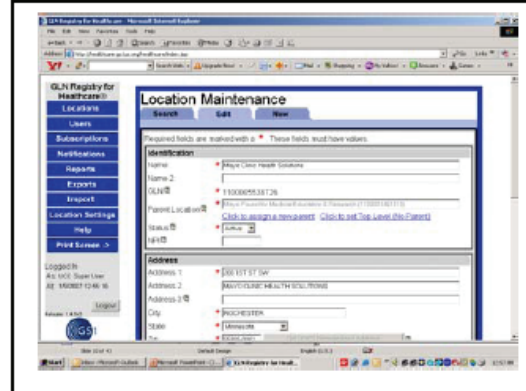
B	C	D	E	F
VENDOR	VENDOR NAME	LOCATION CODE	VAR.ACC#1	VAR.ACC#2
2304	ABBOTT LABS DIAGNOSTICS (M.C.)	JAMC	300033 (M.C.)	1 ABBOTT PARK
2304	ABBOTT LABORATORIES INC	JAMC	28010 (M.C.)	8011 FINCH RD
251	AJUDIC INC	JAMC	800837 (M.C.)	17415H ST
2638	BD BIOSCIENCE CLONTECH	JAMC	ACCT#507328 (M.C.)	238 E MEADOW CIRCLE
2800	COCHLEAR	JAMC	02408 (M.C.)	100 WINDYBROOK E
2851	JOHNSON & JOHNSON	JAMC	83114 (M.C.)	10 BOX 6980
3338	FEHER HEALTHCARE	JAMC	ACCT#13361001 (M.C.)	275 PACIFIC DR
3442	AMBIOPHARMA ENTERPRISES	JAMC	17010 (M.C.)	5001 POLARIS DR FIVE

## GLN Registry for Healthcare®

- What is the GLN Registry?
  - A centralized database that keeps track of the name, address, class of trade, and organizational hierarchy information about each provider.
  - Available 24 hours a day, 7 days a week.
  - Stores all present and past GLN information.

## REBATE REPORTING ANALYSIS

- INCONSISTENT REBATE REPORTING
  - NOT ALL SPEND CAPTURED
  - INCONSISTENCIES IN ENTITY REPORTING
  - DATA VERIFICATION MAY BE NON EXISTENT
- GLN IMPLEMENTATION REPORTS ACCURATE DATA



## Cardinal/ Mayo GLN Project

- Cardinal is an early adopter of GLN. A cross functional team has been put together to implement this methodology.
- Mayo
  - Kenneth Pelletier
  - Russ Mullins
  - Ross Hamernik
- Cardinal
  - Guy Gallagher
  - Tom Krueger
  - Allen Bryan

## Milestones

- Phase 1 Cardinal Base
  - (8/14/2008)
- Phase 2 Cardinal Valuelink
  - (10/2/2008)
- Phase 3 Eau Claire
  - TBD

## Data Issues

- YM05
  - This is the mechanism within Lawson to transact with EDI
  - Will only accept 12 characters
  - ABS 9529 opened to increase the character set to 13
- GLN 1:1 ratio
  - All GLN must have a 1 to 1 relationship with account number

## GLN Questions

- What EDI documents are we changing?
  - 850 PO Out
  - 855 Confirm
- How are we testing?
  - Test POs
  - Test Database
- How are we deploying? Why are do we have phases?
  - Three phases
    - Cardinal Base for MCA, MCF, and MCR
    - Cardinal Valuelink
    - Eau Claire

## GLN Questions Continued...

- What will we be doing around Customer Service/ Manual orders?
  - Buyers will be referencing
- How will we handle issues?
  - All issues will be documented and addressed by the GLN team
- What will we do after Cardinal?
  - CR Bard

## Next Steps...

- Get the YM05 modified
- Transact with the test purchase orders
- Implement one account at a time.

COMPANY	OLD ACCT NUMBER	LOCATION	PURCH FILELOC	GLN NUMBER	Vendor Name
1007903582	ROCAT	ROSE	116689372658	116689372658	Saint Marys Hospital Receiving
1007903584	RODRSH	LAR	116689372658	116689372658	Thomberg Receiving Desk
1007903582	ROFAC	ROSE	116689372658	116689372658	Facilities Warehouse
1007903584	JACCL	JAX	116689372658	116689372658	BAVO CLINIC JACKSONVILLE
300079035154	JABC3	LAE1	116689372658	116689372658	ORLANDO CS INVENTORY
300079035261	OPCS	LAE1	116689372658	116689372658	SPARTA CS INVENTORY
1007903584	SMCH	A20	116689372658	116689372658	SCOTTSMALL MAYO CLINIC

\* Test account numbers

Vendor	Item	To	Vendor Name
1007903582	ROCAT	ROSE	Saint Marys Hospital Receiving
1007903584	RODRSH	LAR	Thomberg Receiving Desk
1007903582	ROFAC	ROSE	Facilities Warehouse
1007903584	JACCL	JAX	BAVO CLINIC JACKSONVILLE
300079035154	JABC3	LAE1	ORLANDO CS INVENTORY
300079035261	OPCS	LAE1	SPARTA CS INVENTORY
1007903584	SMCH	A20	SCOTTSMALL MAYO CLINIC



# APPENDIX F: MAYO CLINIC 850 PURCHASE ORDER MAP

MAYO FOUNDATION  
850 PURCHASE ORDER TRANSACTION SET (version 4010)  
OUTBOUND

**850**  
Purchase  
Order

Area	Segment/ Element	M=Mandatory O=Optional C=Conditional	Min/ Max	Element Nbr	Element Type	Element Description	Mayo Use	Lawson Field Mercator Mapped
H E A D E R	<b>ST</b>	<b>Mandatory</b>				<b>Transaction Set Header</b>		
	ST/01	M	3/3	143	ID	Transaction set I.D.	"850"=Purchase Order	
	ST/02	M	4/9	320	AN	Transaction control number	Matches the 'SE' segment	
	<b>BEG</b>	<b>Mandatory</b>				<b>Beginning Segment for PO</b>		
	BEG/01	M	2/2	353	ID	Purpose	"00"=A new purchase order	
	BEG/02	M	2/2	92	ID	P.O. Type Code	"SA"=Stand-alone	
	BEG/03	M	1/22	324	AN	P.O. Number	P. O. Number (14 characters)	PCR-PO-NUMBER
	BEG/04	O	1/30	328	AN	Release Number	Not Used	
	BEG/05	M	8/8	323	DT	P.O. Date	Date of P.O. - CCYYMMDD	PCR-PO-DATE
	<b>REF</b>	<b>Optional</b>				<b>Reference Identification</b>		
	REF/01	M	2/3	128	ID	Reference ID Qualifier	"ZY" = Referenced Pattern ID	
	REF/02	C	1/30	127	AN	Reference ID	Requisition Number	PLS-SOURCE-DOC-N or PLS-SOURCE-DOC-A
	<b>PER</b>	<b>Optional</b>				<b>Admin Communications Contact</b>		
	PER/01	M	2/2	366	ID	Contact Function Code	"BD"=buyer/dept	
	PER/02	O	1/35	93	AN	Name	Buyer Name (25)	BUY-NAME
	PER/03	C	2/2	365	ID	Communications ID	"TE"=telephone	
	PER/04	C	7/25	364	AN	Communications Number	Telephone Number (12)	BUY-PHONE
	<b>TAX</b>	<b>Optional</b>				<b>Tax Reference</b>		
	TAX/01	M	1/20	325	AN	Tax Identifier Number	Tax Identifier Number	
	TAX/12	M	1/1	441	ID	Tax Exempt Code	Tax Exempt Code	
	<b>DTM</b>	<b>Optional</b>				<b>Date Information</b>		
	DTM/01	M	3/3	374	ID	Date/Time Qualifier	"010"	
	DTM/02	C	8/8	373	DT	Delivery Requested Date	CCYYMMDD	PLI-EARLY-DL-DATE
	DTM/03	C	4/8	337	TM	Time	Time of Transaction	
	<b>N9</b>	<b>Optional</b>						
	N9/01	M	2/3	128	AN	Reference Identification	"YD"	
	N9/02	C	1/30	127	AN	Reference Identification	"409413"	
	<b>MSG</b>	<b>Optional</b>				<b>Header Comments</b>		
MSG/01	M	1/264	933	AN	Free-form Message Text	Header Comments		
<b>N1</b>	<b>Mandatory</b>				<b>Ship To</b>			
N1/01	M	2/2	98	ID	Ship to ID	"ST"=Ship to		
N1/02	O	1/35	93	AN	Ship to name	Name	PCR-SH-NAME	
N1/03	C	1/2	66	ID	ID code qualifier	"UL" if GLN is used in N1/04 below. Otherwise "91"		
N1/04	C	2/17	67	AN	ID Code	(Preferably) Mayo's GLN for the ship- to location otherwise vendor's acct # for Mayo ship-to location		
TD5	<b>Optional</b>				<b>Carrier Details(Routing Sequence/Transit Time)</b>		Added 3/17/05	
TD5/05	O	1/35	387	AN	Routing	Rush Order Instructions-Prints if ON present in TD5/12	Added 3/17/05	
TD5/12	O	2/2	284	ID	Service Level Code	Only prints TD5 Segment if ON is present on Order	Added 3/17/05	
D E T A I L	<b>PO1</b>	<b>Mandatory</b>				<b>PO Baseline Item Data</b>		
	PO1/01	M	1/6	350	AN	PO line number	Mayo's PO line item number	PCR-PO-NUMBER
	PO1/02	M	1/4	330	N	Quantity Ordered	Whole Numbers Only	PLI-QUANTITY
	PO1/03	M	2/2	355	AN	Unit of measure code	Unit of measure	PLI-ENT-BUY-UOM
	PO1/04	M	1/10	212	R	Unit Price	2 decimal places-explicit	PLI-ENT-UNIT-CST
	PO1/05	N	2/2	639	ID	Basis unit price code	Not used	
	PO1/06	M	2/2	235	ID	Product ID qualifier	"VC"=Vendor catalog number	
	PO1/07	M	1/30	234	AN	Product ID	Vendor catalog number	MRL-VEN-ITEM
	PO1/08	M	2/2	235	ID	Product ID qualifier	"IN"=Mayo's internal number	
	PO1/09	M	1/30	234	AN	Product ID	Mayo's internal catalog number	
	PO1/10	O	2/2	235	ID	Product ID qualifier	"MF"=Mfg Nbr	
	PO1/11	O	1/30	234	AN	Product ID	Manufacturer's Number	PLI-MANUF-NBR
	PO1/12	O	2/2	235	ID	Product ID qualifier	Not Used	
	PO1/13	O	1/30	234	AN	Product ID	Not Used	
	PO1/14	O	2/2	235	ID	Product ID qualifier	"CR"=Contract Number	
	PO1/15	O	14	234	AN	Product ID	Contract Number	PLI-AGREEMENT-REF
	<b>PID</b>	<b>Optional</b>				<b>Item Description</b>		
	PID/01	M	1/1	349	ID	Type	"F"	
	PID/05	C	1/80	352	AN	Product Description	(PID fields 2-4 not used)	PLI-DESCRIPTION
	<b>MSG</b>	<b>Optional</b>				<b>Line Comments</b>		
	MSG/01	M	1/264	933	AN	Free-form Message Text	Line Comments	
	<b>N1</b>	<b>Optional</b>				<b>Name - Deliver To</b>		
N1/01	M	2/2	98	ID	Deliver To ID	"MA"		
N1/02	C	1/35	93	AN	Ultimate Location	Bldg,Room,Name,etc.		
<b>REF</b>	<b>Optional</b>							
REF/01	M	2/2	128	ID	Req ID	"RQ"	PLS-SOURCE-DOC-N or PLS-SOURCE-DOC-A	
REF/02	C	1/30	127	AN	Req Number			
<b>CTT</b>	<b>Mandatory</b>				<b>Transaction Totals</b>			
CTT/01	M	1/16	354	N	Number of line items	Total number of PO1 segments		
CTT/02	M	1/10	347	N	Hash Totals	Total of PO1 quantities		
<b>SE</b>	<b>Mandatory</b>				<b>Transaction Set Trailer</b>			
SE/01	M	1/6	96	N	ST, SE, and segments between			
SE/02	M	4/9	329	AN	Transaction Control Number	Matches 'ST' segment above		

---

## APPENDIX G: MAYO CLINIC 850 EDI USING THE 'UL' IDENTIFIER

L1 ST^850^0002 |  
L2 BEG^00^SA^46061590^^20091012 |  
L3 REF^ZY^ 61590 |  
L4 PER^BD^Jane Doe |  
L5 TAX^26251^^^^^^^^^^1 |  
L6 DTM^010^20091012^13115526 |  
L7 N9^YD^409413 |  
L8 MSG^Confirmation of this order MUST BE ACKNO |  
L9 N9^YD^409413 |  
L10 MSG^Please send confirmation of pricing, shi |  
L11 N9^YD^409413 |  
L12 MSG^discrepancies to |  
L13 N9^YD^409413 |  
L14 MSG^Email orderconfirmations mayo.edu |  
L15 N9^YD^409413 |  
L16 MSG^Fax 507-555-5555 |  
**L17 N1^ST^MAYO CLINIC^UL^1100005705548 |**  
L18 PO1^1^10^EA^xx.xx^^VC^SBA26BSLUB^IN^102529^^^^^CR^JAFVLC00018 |  
L19 PID^F^^^^PK CS TRAY BIOPSYMCF |  
L20 N1^MA^RADUS RAD-ULTRASOUND |  
L21 PO1^2^1^PK^x.xx^^VC^V704-B^IN^103833^^^^^CR^JANVLC00058 |  
L22 PID^F^^^^TOWEL OPERATING ROOM COTTON ST BL 17X27IN 4 PER PK |  
L23 N1^MA^RADUS RAD-ULTRASOUND |  
L24 CTT^2^11 |  
L25 SE^25^0002 |

**This is a sample 850 EDI transaction using the 'UL' nomenclature. Please observe line 17.  
The 'UL' is denoted with the GLN to the right of it.**

NOTE: This is a sample EDI 850 transaction is to be used for educational purposes only.

## APPENDIX H: MAYO CLINIC CONFIGURATION OF MEDITECH FOR CARDINAL HEALTH

Meditech contains a dictionary with a mapping for each segment. As vendors come on, the sites mapped them for the N103ST and N104ST values and then either mapped individual values for the vendors that are not ready or left them to a default value.

The below example shows the UL mapping for the N103ST and N104ST values from Lake City. In the left column is the vendor number for Cardinal Health (L000126) and the right column indicates the value to use for this vendor. If a specific value is not defined, then all other vendors would use the value of 91 as indicated in the bottom of the screen.

Note in the N104ST for Cardinal Health Vendor number L000126 there is also a L00126WAB that indicates a ship to of Wabasha and the appropriate GLN is in the value column for the different *Ship-to*'s.

Enter/Edit EDI Map Dictionary	
Mnemonic	GHXN103ST
Active	<input checked="" type="checkbox"/>
Name	GHXN103ST
If Data Value Is	Use This Value
L000126	UL
For Other Data Values, Use	91
If There Is No Data Value, Use	91

Enter/Edit EDI Map Dictionary	
Mnemonic	GHXN104ST
Active	<input checked="" type="checkbox"/>
Name	GHXN104ST
If Data Value Is	Use This Value
L000033	456634001
L000033WAB	747451001
L000126	1100005590151
L000126WAB	1100005264908
L000139	34186390
L000170	66001141
L000381	310024006
For Other Data Values, Use	
If There Is No Data Value, Use	

---

## APPENDIX I: MAYO CLINIC ANNOUNCEMENT TO SUPPLIERS

**Date:** December 15, 2008  
**To:** Supplier Account Manager/Representatives  
**Re:** Data Synchronization Requirements Update

Data synchronization between our Enterprise Resource Planning (ERP) and business partner systems is a business requirement that we have been working diligently to achieve. This objective is aligned formerly with the Health Care Supply Chain Standards Coalition (HSCSC) and currently GS1 Healthcare US as well as industry in general. Standards are critical to an effective and efficient supply chain for our community. Mayo Clinic has utilized a standard price agreement template to collect product information for system updates. We currently require the following standard elements:

- GLN - Global Location Number
- GTIN - Global Trade Item Number
- UNSPSC - United Nations Products and Services Code

Moving forward we have also established two related and significant initiatives:

- Sunrise 2010 - Elimination of the Custom Account Number
- Sunrise 2012 - Elimination of the Custom Product Number

Much like our eCommerce initiatives of the past we ask that you make arrangements with us to migrate to these standards to ensure there are no future disruptions in our transactions.

Please contact our Supply Chain Management office 507-266-1366, if you have any questions.

Jim Francis, Supply Chain Management Chair

Mark Dozier, Sourcing and Contracting Director

Joe Dudas, Informatics Director

---

## APPENDIX J: RESOURCE LINKS

- (1) Minnesota Pilot Phase 1 - *GLN Registry for Healthcare® Recommendations for Providers, Manufacturers and Distributors Based on Lessons learned from the Minnesota Pilot:*  
[http://healthcareportal.gs1us.org/DocumentLibrary/tabid/70/DMXModule/419/Command/Core\\_Download/Default.aspx?EntryId=30](http://healthcareportal.gs1us.org/DocumentLibrary/tabid/70/DMXModule/419/Command/Core_Download/Default.aspx?EntryId=30)
- (2) Minnesota Pilot Phase 2 - *Process Map for Healthcare Using Global Location Numbers (GLNs) and the GLN Registry for Healthcare:*  
[http://www.gs1us.org/dnn\\_gs1us/GS1HealthcareUS/HealthcareDocumentLibrary/tabid/166/DMXModule/586/Command/Core\\_Download/Default.aspx?EntryId=163](http://www.gs1us.org/dnn_gs1us/GS1HealthcareUS/HealthcareDocumentLibrary/tabid/166/DMXModule/586/Command/Core_Download/Default.aspx?EntryId=163)
- (3) GLN Healthcare Provider Tool Kit: [www.gs1us.org/hcptoolkit](http://www.gs1us.org/hcptoolkit)
- (4) GLN Healthcare Supplier Tool Kit: [www.gs1us.org/hcsuptoolkit](http://www.gs1us.org/hcsuptoolkit)
- (5) 2010 GLN Sunrise Resources:  
[www.healthcareportal.gs1us.org/AreyouReadyfor2010GLNSunrise/tabid/72/Default.aspx](http://www.healthcareportal.gs1us.org/AreyouReadyfor2010GLNSunrise/tabid/72/Default.aspx)
- (6) GS1 Healthcare US website: [www.gs1us.org/healthcare](http://www.gs1us.org/healthcare)
- (7) *Moving to Global Location Numbers (GLNs): Considerations for Healthcare Trading Partners:*  
[www.ghx.com/65boutGHX/IndustryStandards/tabid/827/language/en-US/Default.aspx](http://www.ghx.com/65boutGHX/IndustryStandards/tabid/827/language/en-US/Default.aspx)