

# BJC HealthCare

## BJC GS1 Standards Implementation Case Study

BJC HealthCare is one of the largest nonprofit health care organizations in the United States, delivering services to residents primarily in the greater St. Louis, southern Illinois and mid-Missouri regions. With net revenue of \$3.2 billion, BJC serves urban, suburban and rural communities and includes 13 hospitals and multiple community health locations.

Like many U.S. healthcare organizations, BJC has been confronted with a number of economic and operational challenges in recent years. It has seen an increase in patients without insurance at the same time when it is facing reductions in Medicare reimbursement. Under the new healthcare reform legislation, BJC has also been tasked with finding a way to track medical product usage at the point of care and in turn use this information to improve patient outcomes and reduce supply chain costs.

To address these issues, BJC developed a strategy designed to drive non-value added costs out of its supply chain, while enabling the organization to gain information to make informed decisions on product efficacy and utilization. A key component of this strategy is the implementation of GS1 global data standards: Global Location Numbers (GLNs) to identify organizations and locations and Global Trade Item Numbers<sup>®</sup> (GTINs) to identify products in business transactions with suppliers and other healthcare trading partners. Today, BJC is using GLNs in all of its purchase orders transmitted through the GHX exchange and is prepared to transact with GTINs as its vendors enumerate their products with this standard.

This case study details how BJC successfully implemented global data standards within its organization to improve patient safety and supply chain efficiency ahead of the healthcare industry-established GLN and GTIN sunrise dates, December 2010 and December 2012 respectively. It includes the best practices that BJC employed to enumerate its organization with GLNs, reconcile its GLNs with its supply chain partners (group purchasing organization, e-commerce partner and suppliers), prepare its internal data and systems to transact successfully with GLNs and GTINs, and position itself

## Overview

One of the largest nonprofit healthcare organizations in the U.S., BJC HealthCare includes 13 hospitals and multiple community health locations, serving residents in the greater St. Louis region, as well as in southern Illinois and mid-Missouri. BJC is seeking a way to automate the process of tracking products from the point of manufacture to the point of use in order to help improve patient outcomes and reduce supply chain costs.

This case study details how BJC successfully worked with GHX and GS1 Healthcare US to implement use of global industry standards in business transactions with suppliers and other healthcare trading partners. Those standards are Global Location Numbers (GLNs) to identify organizations and locations and Global Trade Item Numbers<sup>®</sup> (GTINs) to identify products. Today, BJC is using GLNs in all of its purchase orders transmitted through the GHX exchange and is prepared to transact with GTINs as its vendors enumerate their products with this standard.

To date, BJC HealthCare has derived the following benefits from GLN enablement:

- Improved data accuracy
- Reduced billing and shipping errors
- Greater process efficiency

to achieve the “Ultimate Solution” (description to follow later in this document), whereby the healthcare industry could automate the process of tracking products from the point of manufacture to the point of use.

## The Need for Consistent Data

According to Thomas M. Stenger, Jr., manager of MMIS & Analysis for BJC HealthCare, the organization realized early on that it needed accurate, consistent purchasing data to achieve its supply chain goals. Global standards adoption enables healthcare providers like BJC to improve the quality of their data since all of the parties with which it transacts can use the same unique numbers to identify organizations, locations and products.

“By improving the accuracy of our supply chain data through global data standards we can ensure that the right products are being purchased at the right prices, track utilization to reduce waste and ultimately tie the products back to the patients to measure efficacy and improve outcomes,” said Stenger.

With many leading healthcare organizations and group purchasing organizations (GPOs) calling on the industry to adopt GS1 Global Location Numbers (GLNs) and Global Trade Item Numbers (GTINs), BJC chose to enumerate itself with GLNs for organization and location identification and configure its systems and data to use both GLNs and GTINs in business transactions with trading partners.

A GLN is a globally unique, 13-digit number that is used to identify legal entities (e.g., hospital, supplier, distributor), functional entities (e.g., purchasing department, nursing station) and physical locations (e.g., warehouse, loading dock, cabinet). A GTIN is a globally unique identification number, which may be 8, 12, 13 or 14 digits in length, used to identify products at each unique packaging level.

## Defining the Project Scope

Before BJC could begin using GLNs and GTINs, it had to define the scope of its standards enablement project. Not only did the organization want to enumerate its bill-to and ship-to locations with GLNs, it also wanted to successfully use both GLNs and GTINs in electronic business transactions. According to Stenger, this full integration required extensive planning and close collaboration with trading partners.

“Enumerating with GLNs is one thing, but incorporating them into your systems and successfully transacting with them is a whole other story,” said Stenger. “In order to do so, we had to work closely with our trading partners and technology vendors to communicate our needs and agree on the rules that would govern our transactions.”

Stenger and Nancy LeMaster, BJC’s vice president of Supply Chain, participated in GS1 Healthcare US calls and meetings on GLN and GTIN enablement, which helped the organization define what it would need in terms of staffing, technologies and financial resources to carry out such a comprehensive project. Stenger then developed a standards enablement plan that outlined the process from start to finish.

## Defining the Data

The first step in the process was for BJC to define which locations it wanted to enumerate with GLNs. Stenger noted that the organization chose to “keep things simple” and only enumerate those bill-to and ship-to locations that it used in transactions with trading partners. Ship-to locations were defined as those locations within a BJC facility where a vendor or carrier relinquished control of a product, such as a dock. Bill-to locations were defined as those locations where BJC processes invoices from vendors and other parties. They further narrowed the focus by omitting locations for Just In Time (JIT) and desktop deliveries.

Stenger and his team had to first determine which locations were active. He generated a report that included all of BJC’s ship-to and bill-to locations. He then shared the list of ship-to locations with the organization’s distribution department and the list of bill-to locations with its accounts payable department to validate which locations were truly active and ensure that no active locations were missing. From there, he deleted inactive locations from BJC’s systems and added any new sites identified. Through this process, Stenger determined that BJC had approximately 100 active ship-to locations and three active bill-to locations.

## Validating the Locations

BJC’s GPO, Novation, had enumerated the healthcare system on its behalf in the GS1 US GLN Registry for Healthcare®. It was BJC’s responsibility to validate its enumerated locations within the Registry to ensure they were accurate.

Stenger generated a report containing BJC’s active bill-to and ship-to locations and compared this list to the locations that Novation had enumerated in the Registry. He found that there were active locations that were missing from the Registry, as well as locations that were enumerated in the Registry but missing from BJC’s internal list. When Stenger found an enumerated bill-to or ship-to location in the Registry that was not on BJC’s list of active locations, he would call the location on the telephone to determine if it was owned by BJC and then confirm the validity of the location with the organization’s finance department. If it was a valid location, Stenger would add it to BJC’s internal list.

Once Stenger had reconciled BJC’s locations within the Registry, he built a cross-reference table in which he established a one-to-one relationship between BJC’s GLNs and its ship-to and bill-to locations. This table would serve as a crosswalk to bridge the ship-to and bill-to locations to the GLNs during BJC’s electronic transactions with trading partners.

Location Name	Street Address	GLN
ALTON MEMORIAL HOSPITAL	ONE MEMORIAL DRIVE, ALTON, IL	1100003663918

## Reconciling GLNs with Trading Partners

The next step was for Stenger and his team to reconcile BJC’s GLNs to its trading partners’ data values, including its GPO membership identification numbers (IDs), supplier account numbers and its e-commerce partner’s facility IDs. Through this process, BJC significantly improved the accuracy of its supply chain data by correcting errors, deleting duplicate or inactive locations, adding missing locations, and consolidating multiple account numbers.

“The reconciliation process is all about getting your trading partners to agree with you philosophically on the business rules around your relationship, including how you want to be defined in your system and in their systems,” said Stenger. “The longer it takes for you to work this process out with a trading partner, the more valuable the outcome since it exposes the fact that there were significant issues in the relationship that had to be addressed.”

## Reconciling GLNs with a GPO

Stenger and his team reconciled BJC’s GLNs with Novation’s membership roster by establishing a one-to-one relationship within its cross-reference table between BJC’s ship-to and bill-to locations, GLNs and GPO membership IDs and submitting the table to Novation. Novation was then able to ensure that it was using the correct GLNs for BJC’s locations in its roster.

Location Name	Street Address	GLN	GPO ID
ALTON MEMORIAL HOSPITAL	ONE MEMORIAL DRIVE, ALTON, IL	1100003663918	123

During this process, Stenger found instances where Novation’s membership roster contained

locations that BJC had not accounted for during its GLN reconciliation. In some cases, these were ship-to locations for affiliates that BJC does not own but for which it receives rebates. Stenger added these locations and their corresponding GLNs to BJC’s cross-reference table to ensure that the organization did not lose its rebates. In other cases, where Stenger identified affiliate locations for which BJC did not receive rebates, Novation took control of the GLNs for these locations and BJC removed the locations from its cross-reference table.

**Reconciling GLNs with Suppliers**

BJC then reconciled its GLNs with its suppliers. For each supplier, Stenger and his team added its supplier-assigned account numbers to the corresponding locations, GLNs, and GPO IDs in its cross-reference table and then sent this table to the supplier so that the supplier could verify that its systems contained the same account number/ location matching.

always a one-to-one relationship between account numbers and GLNs.

**Reconciling GLNs with an e-Commerce Partner**

The final step of the reconciliation process was for BJC to reconcile its GLNs with its e-commerce partner, GHX. Stenger and his team worked closely with the GHX team to ensure that BJC’s cross-reference table met the necessary requirements for e-commerce, e.g., the GLN is in the correct field.

**Transacting with Suppliers Using GLNs**

BJC participated in a GLN enablement program with GHX to enable the use of GLNs in transactions sent through the exchange. One of the challenges that arose during the program was that most of BJC’s suppliers are not yet ready to accept and process GLNs in electronic transactions.

Location Name	Street Address	GLN	GPO ID	Supplier Acct #
ALTON MEMORIAL HOSPITAL	ONE MEMORIAL DRIVE, ALTON, IL	1100003663918	123	12345

To address this issue, GHX enables BJC to send both its GLNs and its supplier’s account numbers on 850 purchase orders (POs) to suppliers. When BJC submits an EDI transaction through the GHX exchange, its enterprise resource planning (ERP) system selects and transmits both the GLN and account number for the specified location. If a supplier cannot accept the GLN, GHX suppresses it so that the supplier receives only the account number.

During this process, Stenger and his team found that in some cases, BJC had between four and six supplier-assigned account numbers for the same ship-to locations. With 100 ship-to locations and 4,600 suppliers, they faced the possibility of managing over 1 million account numbers. According to Stenger, these multiple account numbers caused a variety of issues, including products shipped to the wrong locations, increasing costs for both BJC and its suppliers.

Instead of replacing all of its supplier-assigned account numbers with GLNs, BJC engaged its suppliers in a reconciliation process whereby it eliminated any account numbers that did not serve a legitimate business purpose. If there were a case when it was deemed necessary to keep more than one account number for the same location, such as when a supplier needed to identify a unique ship-to/bill-to combination, BJC would assign a new GLN to this account number so that there was

“While it would be ideal if we could send only the GLNs in our transactions with suppliers, the reality is that not all of our suppliers are ready to accept them,” said Stenger. “GHX enables us to transact with suppliers that are ready, as well as those that are in transition to prevent any disruptions and keep the flow of business moving.”

While BJC initially reconciled GLNs with its suppliers, GHX now performs this process for the organization. For those suppliers that can accept GLNs in electronic transactions, GHX also works with both the supplier and BJC to ensure that transactions are successfully processed.

BJC's electronic data exchange (EDI) coordinator works with GHX and the supplier to complete the re-boarding process through which BJC and the supplier reconcile BJC's GLNs with the supplier's active account numbers. Each time BJC begins transacting with a supplier using GLNs through the exchange, GHX tests the initial transactions sent by the trading partner pair to ensure that each party has what it needs in terms of data to successfully transact using this standard.

For suppliers that do not conduct business electronically, BJC works directly with them to transition from account numbers to GLNs. When a supplier is ready to accept GLNs, BJC inserts a GLN in the address field of the transaction so that it prints on the paper PO, which is manually delivered to the supplier (mail, fax, etc.).

## Preparing for GTINs

For the past 10 years, BJC has been transacting with three of its vendors using a different industry standard for product identification. As a result, BJC was already set up to hold product identifiers and had no trouble preparing its systems to store and process the GS1 Global Trade Item Numbers (GTINs). According to Stenger, BJC's current ERP system features an item number field that can store the 14-character GTIN and output it on 850 PO transactions. As a result, BJC is prepared to conduct business transactions with trading partners using the GTINs as soon as suppliers begin using this standard in place of proprietary item numbers.

BJC will soon be upgrading to a new ERP system, which has the ability to tie multiple GTINs under one BJC item number. This will enable BJC to use GTINs to manage its inventory by specific packaging levels. Once a supplier enumerates products with GTINs at each specific packaging level, BJC can record that it has received a case of a specific product, and using a barcode scanner, account for the fact that it has decremented its inventory by a box or by an individual item. BJC will also be able to tie its ERP system into other internal systems to automate additional supply

chain functions. For example, when a product is scanned and used, a PO could be automatically generated and sent through GHX to reorder that specific item.

## GLN/GTIN Status Today

Today, BJC is transmitting GLNs on all transactions sent to suppliers through the GHX exchange. The organization has completed the GLN reconciliation process with 15 of its suppliers and 10 of those suppliers have the capability to accept GLNs in EDI transactions. As noted above, GHX is currently suppressing GLNs and sending only account numbers for those suppliers who are not yet capable of processing transactions containing GLNs. This keeps electronic transactions flowing through the exchange while enabling BJC to be prepared to transact with GLNs as soon as its suppliers are ready to do so. In regards to GTINs, BJC is prepared to transact with this standard well in advance of the industry-established sunrise date of December 2012, which is the next major industry milestone. Although none of its suppliers have indicated that they have fully enumerated their products with GTINs or are prepared to transact with this standard at this time, BJC will be ready when they are.

According to Stenger, one of the greatest benefits derived from the GLN enablement process is that it has forced both BJC and its trading partners to significantly improve the accuracy of their data, which has reduced billing and shipping errors.

## GLN Enablement Benefits

BJC has derived the following benefits from GLN enablement:

- Improved data accuracy
- Reduced billing and shipping errors
- Greater process efficiency

"As an organization performs each of these steps, it is improving the quality of its data exponentially, and as a result, there are fewer errors at every stage of the process enabling the organization to move through the stages quicker," said Stenger.

“Because our data is so accurate and our process so streamlined, managing our GLNs and reconciling with our suppliers requires little time or effort. It is now fill work for my team—something they easily manage alongside their everyday responsibilities.”

When asked what advice he would give to other providers that are implementing GLNs within their organizations, Stenger replied:

“My advice is to start by enumerating your facilities and coming up with an integration strategy,” said Stenger. “There are many in the industry who are currently engaged in this process. If you have questions, reach out to others who can share their lessons learned. Don’t worry if your organization is small. The smaller your facility, the easier the process and the less time it will take to complete since you likely have fewer locations to enumerate and fewer suppliers to reconcile compared with a larger healthcare organization.”

## The Ultimate Solution

As an organization dedicated to continually improving the delivery of healthcare, BJC has adopted GS1 Standards to not only address current challenges in operational management and patient care, but also to set the stage for future advancements. Stenger and his team are working to achieve the “Ultimate Solution,” an integrated network of systems through which the healthcare industry could track product usage and patient outcomes and automate all of the supply chain processes to increase operational efficiency, reduce costs and improve patient care.

In order to achieve BJC’s vision, all supply chain partners need to take an active role in product tracking. Manufacturers and distributors would feed sales tracing reports to a central data repository. These reports would include GLNs for the providers who purchased the products and GTINs for the products sold. Providers would integrate their bedside, operating room, supply chain, billing and medical records systems so when a clinician scans

a product at the point of use on a patient, the information contained within the GTIN would be automatically transmitted to each of these systems to facilitate a broad range of processes – from decrementing the provider’s inventory to recording product usage in the patient’s electronic medical record.

Stenger notes that scanning every product used on a patient and automatically documenting product details would improve efficiencies by reducing the manual labor currently required for these tasks, increase patient safety by helping suppliers better manage product recalls and help providers enhance the quality of patient care.

“If there is an adverse event, it would be easier if we knew which products had been used on a patient and then try to figure out what went wrong,” said Stenger. “On the other hand, when things go right, we have product usage documented so we can use the same products and interventions when another patient presents with a similar condition, helping achieve a positive outcome.”

Stenger believes that the healthcare industry can look to the retail sector for best practices in standards adoption and product tracking. For over 30 years, retailers have been using the Universal Product Code (U.P.C.) to uniquely identify consumer products. The U.P.C. code is a graphic representation of the GS1 product identification industry standard, GTIN, that can be read by a barcode scanner. The retail industry has gained tremendous value from the use of the U.P.C. codes through greater supply chain accuracy, efficiency and visibility.

“In healthcare, we deal with advanced technologies for treating patients but in regards to our supply chain, we have not achieved what grocery stores can do in terms of tracking products,” said Stenger. “This is a very complex issue in healthcare because we have thousands of facilities, thousands of departments, hundreds of software platforms and millions of people utilizing these systems and

functions. It is a challenge, to say the least, to get all supply chain players to agree on a plan of action and then get it implemented. In order for us to make progress in this area, providers, suppliers and technology vendors need to come together, communicate their needs and develop a mutually beneficial solution.”

## References

### Healthcare Industry Sunrise Dates

<http://www.gs1us.org/hcsunrise>

### GLN Registry for Healthcare

<http://www.gs1us.org/glnregistry>

### GS1 Healthcare US Healthcare Provider Tool Kit

<http://www.gs1us.org/hcptoolkit>

### GS1 Healthcare US Healthcare Supplier Tool Kit

<http://www.gs1us.org/hcsuptoolkit>

### Moving to Global Location Numbers (GLNs): Considerations for Healthcare Trading Partners - Education Paper #1: Multiple Account Numbers for the Same Location

[http://www.ghx.com/DesktopModules/Bring2mind/DMX/Download.aspx?TabId=716&DMXModule=2214&Command=Core\\_Download&language=en-US&EntryId=714&PortallId=15](http://www.ghx.com/DesktopModules/Bring2mind/DMX/Download.aspx?TabId=716&DMXModule=2214&Command=Core_Download&language=en-US&EntryId=714&PortallId=15)

### Moving to Global Location Numbers (GLNs): Considerations for Healthcare Trading Partners Education Paper #2: GLN Best Practices

[http://www.ghx.com/DesktopModules/Bring2mind/DMX/Download.aspx?TabId=716&DMXModule=2214&Command=Core\\_Download&EntryId=976&PortallId=15](http://www.ghx.com/DesktopModules/Bring2mind/DMX/Download.aspx?TabId=716&DMXModule=2214&Command=Core_Download&EntryId=976&PortallId=15)

### Moving to Global Location Numbers (GLNs): Considerations for Healthcare Trading Partners - Education Paper #3: GLN Best Practices for Suppliers

[http://www.ghx.com/DesktopModules/Bring2mind/DMX/Download.aspx?TabId=716&DMXModule=2214&Command=Core\\_Download&EntryId=1018&PortallId=15](http://www.ghx.com/DesktopModules/Bring2mind/DMX/Download.aspx?TabId=716&DMXModule=2214&Command=Core_Download&EntryId=1018&PortallId=15)

## About BJC HealthCare

BJC HealthCare is one of the largest nonprofit health care organizations in the United States, delivering services to residents primarily in the greater St. Louis, southern Illinois and mid-Missouri regions. With net revenue of \$3.2 billion, BJC serves urban, suburban and rural communities and includes 13 hospitals and multiple community health locations. Services include inpatient and outpatient care, primary care, community health and wellness, workplace health, home health, community mental health, rehabilitation, long-term care and hospice.

## About GS1 Healthcare US®

GS1 Healthcare US is an industry group that focuses on driving the adoption and implementation of GS1 Standards in the healthcare industry in the United States to improve patient safety and supply chain efficiency. GS1 Healthcare US brings together members from all segments of the healthcare industry to address the supply chain issues that most impact healthcare in the United States. Facilitated by GS1 US, GS1 Healthcare US is one of twenty-four local GS1 Healthcare user groups around the world that supports the adoption and implementation of global standards developed by GS1. For more information, visit [www.gs1us.org/healthcare](http://www.gs1us.org/healthcare).

## About GHX

As the business hub for healthcare, Global Healthcare Exchange, LLC (GHX) enables healthcare providers and suppliers in North America and Europe to reduce costs and improve margins by automating processes, reducing operating expenses and increasing knowledge-based decision making. Products and services include trading partner connectivity, order and contract management and validation, data synchronization, sales force automation and business intelligence. Equity owners of GHX are Abbott Exchange, Inc.; AmerisourceBergen Corp.; Baxter Healthcare Corp.; B. Braun Medical Inc.; BD; Boston Scientific Corp.; Cardinal Health, Inc.; Covidien; C.R. Bard, Inc.; Thermo Fisher Scientific Inc.; GE Healthcare; HCA; Johnson & Johnson Health Care Systems Inc.; McKesson Corp.; Medtronic USA, Inc.; Owens & Minor; Premier, Inc.; Siemens; University HealthSystem Consortium; and VHA Inc. For more information, visit [www.ghx.com](http://www.ghx.com).