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CASE STUDY

The Leeds Teaching Hospitals NHS Trust



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CASE STUDY:**The Leeds Teaching Hospitals NHS Trust****Leeds Overview**

The Leeds Teaching Hospitals NHS Trust, the largest of its kind in the United Kingdom and the largest teaching hospital in Europe, boasts a national and international reputation in many specialist areas. With an annual budget in excess of £930m, the Trust has 14,000 staff - including 5,500 nurses and more than 600 consultants who care for over a million patients each year. The Trust operates its services from eight sites, providing secondary hospital care for Leeds' 720,000 plus residents, as well as specialist tertiary services for a population of 2.6m across Yorkshire.

Challenge

In the United Kingdom, as in the United States, the healthcare supply chain is often a labor and cost burden to providers and suppliers alike because of widespread manual processes, discrepant data and disjointed systems. The Leeds Teaching Hospitals National Health Service (NHS) Trust, like many other healthcare providers in the UK, has suffered the consequences, incurring higher staff costs because of inefficient manual processes, losing revenue due to damaged and expired inventory and expending funds to store more products than necessary. A 2010 survey conducted by Nursing Standard and GS1 UK found NHS nurses spent an average of 2.3 days each year searching for missing hospital equipment, which equates to £1 billion in salary costs.¹ Other manual supply chain activities, such as handwriting products into requisition books, only added to the labor and cost burden.

Solution

By partnering with its e-business provider GHX to deploy technologies and solutions for data and contract management and supply chain automation, and implementing GS1 data standards in collaboration with its suppliers, Leeds has streamlined processes and reduced waste while enhancing patient care.

Today, Leeds is handling 94 percent of its stock orders electronically using GS1 Global Location Numbers (GLNs) and Global Trade Item Numbers (GTINs) in transactions with suppliers through the GHX exchange. The result has been increased efficiency, lower costs and better inventory management.

Results

Working with GHX to transact business electronically using GS1 data standards, Leeds successfully:

- Increased the number of orders processed per buyer
- Reduced the number of invoice/purchase order match discrepancies by 45 percent
- Decreased inventory levels at one hospital by 39 percent, a £500,000 savings
- Eased the administrative burden on nurses, freeing up more time for patient care
- Improved stock control and ensured clinicians have products they need prior to procedures

¹ <http://www.gs1uk.org/news/Pages/FeatureDetails.aspx?featureID=24>

A Progressive Approach to Global Data Standards

In June 2011, the Department of Health in the UK announced that it wanted all products supplied to the National Health Service (NHS) to carry GS1 compliant barcodes by the end of 2012. While implementation of the new system across UK healthcare providers and suppliers has been relatively slow, Leeds Teaching Hospitals has taken a progressive approach to global data standards.

Leeds has allocated over 1,300 GLNs to physical locations within its hospitals and shared the GLNs and associated data with its suppliers. The healthcare organization has also implemented processes and systems to use both GLNs and its suppliers' product GTINs in electronic business transactions through the GHX exchange. Graham Medwell, information manager for the Trust's supplies department, explains how Leeds has looked to other sectors, including retail, for best practices to apply to its supply chain.

"Healthcare costs are rising throughout the world. As an industry, we need to look at proven solutions from other sectors to address this issue," said Medwell. "Walmart in the UK is headquartered in Leeds so we've taken advantage of this resource right in our own backyard, talking with colleagues in their purchasing department about the challenges we are facing. While healthcare is different from the retail sector in many ways, we face similar issues when it comes to purchasing and inventory management. What we've found is that data standards are key to cutting supply chain costs regardless of the industry."

Securing C-Suite Support

Securing internal buy-in from Leeds' senior management and its board of directors was vital to the success of the organization's global data standards enablement. As in many healthcare organizations, the procurement team at Leeds initially lacked the visibility required to secure C-suite attention and interest in their initiatives. Medwell notes how he and his team had to raise their profile within the organization, positioning the supply chain as vital to its financial health and the health of its patients.

"In the traditional hospital hierarchy, the supply chain manager is expected to know his/her 'place' within the grand scheme of things," said Medwell. "In order to enact change within our organization, we had to raise the profile of the supply chain manager so that the C-suite could see the potential for supply chain improvements to lower costs and improve patient safety. Modesty is overrated. Supply chain managers must work to raise the stature of the supply chain in the hospital community."

To secure senior leadership support for global data standards enablement, Medwell and his team engaged managers and board members in the enablement process and regularly reported their success. This was achieved through:

- Initial sign-off from managers and board members on the standards enablement initiative
- Regular reporting to the board on project status
- Use of the internal Intranet
- Working groups involving managers and potential system users within departments targeted for roll out
- Use of an internal newsletter to publicize success, media coverage on the initiative, and progress against benchmarks.



Securing Supplier Support

The Leeds procurement team recognized that positive engagement with its suppliers was critical to improving its supply chain processes in an impactful and sustainable manner. “Providers tend to concentrate on price paid for products, as opposed to total supply chain costs, which include labor costs, inventory management, and purchasing/accounts payable administration,” said Medwell. “As a result, the traditional buyer/seller relationship can become confrontational. In order for our initiative to work, we had to change the nature of the relationship with our suppliers by sharing data and collaborating on process improvements that can result in costs savings all around.”

This collaboration included Leeds synchronizing standardized data with its suppliers through their mutual e-business partner, GHX. Leeds was an early adopter of the GHX e-commerce exchange, which provides a single electronic data interchange (EDI) connection to its major suppliers.

A Collaborative Master Data Management Strategy

To facilitate the sharing of standardized data, Leeds adopted a GHX catalog management system, which features an online data repository containing catalog information with secured shared access for both Leeds and its suppliers.

When Leeds’ contracts with a supplier, the supplier provides all relevant information electronically (including product details and pricing) through the GHX system. The supplier is then responsible for managing this data on Leeds’ behalf, ensuring that it is updated and accurate. Leeds’ group purchasing organizations can also update contract pricing through this system.

The procurement team at Leeds uses the GHX catalog management system to monitor the changes that suppliers and GPOs make to product and contract data and can either approve or reject these changes. Approved changes are then published into Leeds’ enterprise resource planning (ERP) system.

For those suppliers that have enumerated their products with GTINs and published them to the GS1 Global Data Synchronization Network (GDSN), Leeds can download the GTINs from the GDSN into the GHX catalog management system so that it can leverage this data for e-commerce and inventory management.

Global Data Standards in e-Commerce Transactions

By transacting standardized and synchronized data with suppliers through the GHX exchange, Leeds has automated its previously manual procurement processes to gain efficiencies, improve accuracy and reduce costs. In order to achieve these benefits, Leeds requires that all suppliers with which it contracts be e-commerce compliant.

Data from the GHX catalog management system, including GTINs, is fed to a GHX purchasing and inventory management system as well as to Leeds’ Oracle e-Business Suite financial system. Leeds generates requisitions through the GHX purchasing and inventory management system, which is integrated with the Oracle system. Purchase orders that are placed through Oracle are sent through the GHX exchange to suppliers. Suppliers in turn send return documents (e.g. advance shipping notifications, status updates) to Leeds through the GHX

“We see the orders going to various suppliers and can drill down to view the data, including the date and time when the supplier received our order,”

exchange and into the Oracle financial system. With its major suppliers, Leeds also leverages this system integration to receive, process and pay invoices electronically. For those suppliers that are capable of transacting with GTINs, Leeds uses GTINs in place of proprietary product identification codes within all inbound and outbound electronic documents.

The GHX solutions also enable Leeds to monitor transactions placed through the GHX exchange in real-time and address any discrepancies before they reach Leeds’ financial systems.

“We see the orders going to various suppliers and can drill down to view the data, including the date and time when the supplier received our order,” said Medwell. “This gives us the confidence that orders have been received, unlike the old days of faxing when we had no way of knowing if an order was lost in transmission.”

Consignment Inventory Management

Leeds has also taken control of its orthopedic consignment inventory by integrating GHX systems for catalog, contract and inventory management into the Trust’s financial, operating room (OR) management and patient administration systems.

Managing implantable devices used in orthopedic and cardiology procedures is a particular challenge for most healthcare providers because they typically have little visibility into this inventory and little control over the purchase of these products. Leeds was no exception. Its manual process of managing consignment inventory was inefficient. Furthermore, off-contract purchases, excess inventory sitting in stock rooms, and expired product contributed to Leeds spending over £3m on orthopedic supplies annually. Process inefficiency and lack of inventory visibility also led to unnecessary cost and waste for Leeds’ suppliers.

Leeds had derived benefits from taking control of consignment products in other major areas, such as Cardiology and Radiology, so the procurement staff knew that it could reduce costs and waste in Orthopedics if it addressed consignment inventory as well.

To achieve this, the Leeds procurement team:

- Worked with leading surgeons to standardize the range of products used in orthopedic procedures and negotiated new contracts with its suppliers
- Mapped its suppliers’ product barcodes to the 2,500 orthopedic products contained within the GHX purchasing and inventory management system, and supplemented this information with expiry dates and lot numbers
- Enriched and synchronized product data and contracts with suppliers through the GHX catalog and contract management system
- Integrated the GHX purchasing and inventory management system and the GHX catalog management system into the Trust’s Oracle e-Business system alongside the GHX exchange to facilitate electronic transactions (e.g. orders, invoices)
- Integrated these systems into the Trust-wide Patient Administration system (PAS) and its OR management system, Galaxy, to record product usage in patient records



£500,000

Leeds has cut £500,000 worth of orthopedic consignment stock from its inventory. With supplier contracts in place and visible to all parties, the purchasing process is more accurate with Leeds paying the right price for the right products.

Today when performing an orthopedic procedure at Leeds,

- In the stockroom, a clinician selects all potential products that might be needed for the procedure and brings them to the OR
- In the OR, a clinician enters the patient's ID into the patient administration system
- A clinician then scans the barcodes on all products used during the procedure and this data is transmitted to the integrated systems (GHX systems, Oracle, PAS, Galaxy)
- Any unused products are documented and returned to inventory

Through this fully automated and integrated system, Leeds has cut £500,000 worth of orthopedic consignment stock from its inventory. With supplier contracts in place and visible to all parties, the purchasing process is more accurate with Leeds paying the right price for the right products. Leeds' suppliers have experienced labor and costs savings as well, with minimal labor required to manage consignment inventory and less waste from expired product. Capturing product data at the point of use also enables Leeds to record information on costs by procedure implant data for the National Joint Registry.

Moving forward, Leeds plans to use supplier GTINs for orthopedic product identification within its systems as its suppliers enumerate their products with this standard.

Track and Trace of Orthopedic Implant Kits

Another area of inefficiency and cost for healthcare providers and suppliers alike is the management of orthopedic kits containing implantable hip and knee components. At Leeds, as with many healthcare organizations, suppliers provide the kits on a consignment basis and Leeds only invoices the suppliers for the items in the kit that were used or not returned to the supplier for some other reason. The act of checking these kits to determine which products were used – both for Leeds and its suppliers – was manual and inefficient.

To address this issue, Leeds engaged in a pilot program with GS1, GHX, orthopedic kit supplier DePuy and technology vendor Sybase to manage orthopedic kit components through Radio Frequency Identification (RFID) tagging and systems integration.

Leeds integrated Sybase's RFID Anywhere software into the GHX inventory management system, which in turn is integrated with Oracle Applications Purchasing, creating an automated, electronic process for managing orthopedic kits.

Steps to the process are as follows:

- Upon receipt from DePuy, a handheld RFID reader is used to record the kit components, which triggers the GHX purchasing and inventory management system to generate a “shopping list” for each kit and a receipt acknowledgement, which is routed through the GHX exchange to DePuy
- In the OR, a clinician records which products were used in the procedure and which were not by scanning the RFID tags on the products
- This usage data is transmitted to the GHX purchasing and inventory management system
- For those products that were used, procurement staff employ the GHX purchasing and inventory management system to generate an order by simple “drag and drop” requisitioning from the kit’s “shopping list”
- The requisition is routed to the Oracle Applications Purchasing system, where it generates a purchase order that is transmitted via the GHX exchange to DePuy
- For those products that were not used, procurement staff employ the GHX purchasing and inventory management system to generate a product return document, which is transmitted via the GHX exchange to DePuy
- Product RFID scanning in the OR also captures and records costs by procedure and implant data for the National Joint Registry

By automating order and inventory management for orthopedic kit components, Leeds and DePuy eliminated manual inventory counts, improved order and invoice accuracy and enhanced patient safety by enabling the track and trace of implantable devices.

Conclusion

The healthcare industry is comprised of many different parties, all with their own objectives, challenges and goals. Because the supply chain equally impacts everyone, it presents a common ground for trading partners to come together to enact meaningful change.

Key to this collaboration is the use of common systems, processes and data that enable trading partners to access the same information at the same time in the same way. Leeds is a prime example of why this approach works for healthcare. By engaging with suppliers through the GHX collaborative community to integrate systems, automate processes and share standardized data, Leeds and its suppliers have improved operations and reduced costs for themselves and each other, while at the same time, enhancing patient care.

“GHX is a superb body in that it already exists so providers and suppliers don’t have to reinvent an infrastructure for collaboration,” said Medwell. “As an industry, we have the technology and the data standards to cut costs in the supply chain. Supply chain managers must now raise the bar, take advantage of the resources at hand and demonstrate to their leadership the significant savings that can be achieved through their work.”

Moving Forward

While the Leeds’ procurement team has made significant strides in transforming its supply chain in recent years, their work is by no means complete. Among their future goals is to leverage GS1 GLNs and GTINs to achieve touchless orders. This will involve scanning barcoded products at the point of use and matching them to patients via barcoded wristbands or patient notes, triggering product replenishment, facilitating a three-way price match between the purchase order, acknowledgement and contract price and electronically paying the supplier invoice.

GHX connects thousands of healthcare suppliers, manufacturers and distributors with hospitals and GPOs - as well as working with Governments to advise on eCommerce legislation for healthcare. Our technology enables the right devices, equipment, services and medicines to flow efficiently through the European healthcare supply chain.

KEY FACTS FROM THIS CASE STUDY:

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- Decreased inventory levels by 39 percent, a £500,000 saving
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