



The Global Language of Business



### Case Study

# CentraState Lays Foundation for Future

Clinicians, IT and Supply Chain Leaders Team for Synchronicity

## Challenge

For a small community healthcare system with big responsibilities to its patients, CentraState Healthcare System (CentraState) in Freehold, New Jersey was faced with the same compliance issues and business imperatives as any larger healthcare system: patient safety and cost containment, yet without the same level of resources. Being able to automatically and accurately identify products CentraState is using in its OR, while recording them in patient records required by the Centers for Medicare & Medicaid Services (CMS) and the Office of National Coordinator (ONC), and needed for knowledgeable patient follow-up, requires a ground-up approach using established GS1 Standards.

## Solution

Clinical, supply chain, and information system professionals joined together at CentraState to develop processes and protocols for utilizing GS1 Standards. The Global Trade Item Number® (GTIN®) provided the foundational identifier to identify medical devices and other products used by surgical teams—unique identification that the CentraState team needed and is now using to populate its systems used throughout the hospital.

## Benefits

According to CentraState, the ability to quickly and accurately identify products used throughout the healthcare supply chain will enable CentraState to satisfy regulatory requirements for medical devices and will qualify as “meaningful use” in patient electronic medical records. Internally, the hospital benefits from increased patient safety, improved staff productivity, precise and inclusive capture of costs, and increasingly greater community trust.

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**Kim Kelly**  
Vice President of Clinical Services  
CentraState Healthcare System



## The Burden of Small, the Advantage of Independence

As an independent medical center, CentraState combines the best of two worlds. It maintains a community hospital atmosphere, yet it offers the technology and professionalism typically found at larger healthcare systems. CentraState's independence gives it the agility to move forward swiftly, because it is without a vast hierarchy and the red tape that goes with it.

This is typified by the CentraState's current drive to embed supply chain efficiencies inside the hospital setting through the adoption of GS1 Standards. Using barcodes and standards-based automation, CentraState aims to improve patient outcomes and safety, remain in compliance with various initiatives and regulations, and keep careful track of costs involved in providing superior patient care.

The best prescription for effectively tackling this project can be summed up in one word: collaboration. CentraState's clinical administrator has joined with supply chain and technology colleagues to introduce efficiencies that will benefit all stakeholders—from patients to caregivers to employees. The team is leveraging Global Trade Item Numbers (GTINs) that uniquely identify products supplied by medical device manufacturers. In fact, the GTIN is an essential component of the global supply chain, allowing for automated digital communication with the simple scan of a barcode.

“Without visibility and transparency, it's become more and more complicated to understand our cost for procedures—what's a winner and what's a loser,” says Beth Finan, perioperative system administrator at CentraState. “Surgical supplies such as implants and tissues are driving particularly high costs, and we need intelligence and solid knowledge around these supplies.”

As the person responsible for OR management, Finan recognized that the many manual processes being used were extremely labor-intensive for both supply chain and administrative support staff. The adoption of the GTIN as the central standard at CentraState provided the impetus to collaborate system-wide for better, more holistic solutions.

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**Beth Finan**  
Perioperative System Administrator  
CentraState Healthcare System

## CentraState Prepares for a Standards-Driven Future

The 2013 **Drug Supply Chain Security Act (DSCSA)** mandated adopting standards among manufacturers and distributors, which will be accessed by healthcare providers for patient safety.

In 2013, the U.S. Food and Drug Administration (FDA) established the **Unique Device Identification** regulation to “adequately identify medical devices through their distribution and use.” When fully implemented by the 2020 deadline, the label on most devices will include a unique device identifier (UDI) in human- and machine-readable forms, ultimately readable by the caregiving community.

Healthcare providers have been at the forefront of the transition to Electronic Health Records (EHRs). Part of the EHR regulation provides criteria for healthcare providers to be certified for “meaningful use.”

According to CentraState, GS1 Standards have provided the needed foundation for enabling compliance by pharmaceutical and medical device manufacturers, supply chain participants including distributors, warehouses, and shippers, and by healthcare providers—all with a focus on better patient outcomes and safety.

## Three Heads Better than One

Kevin Giles, IS management team leader for CentraState, came to the hospital just two years ago and immediately recognized that manual processes and data input was fraught with potential problems. “I knew multiple points of failure could arise within our system [with manual processes], so the IT department was on board right away to modernize and automate the system.”

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CentraState Healthcare System

“Reading GTINs embedded in barcodes [barcode scanning] obviously eliminates problems, improving accuracy tremendously,” Finan says. “And productivity will significantly improve because people won't be spending time validating what was used, what was purchased, or searching out invoices to match with supplies.”

Jane Girling, assistant vice president for Corporate Materials Management, the department that handles supply logistics, supply chain contracting and purchasing for CentraState, had long supported the idea of barcode scanning, but knew it had to be based on a solid system of standards. As the liaison with the CFO, Girling and her team are instrumental in helping to facilitate a one-to-one relationship of item-to-charge. “Once GS1 Standards were presented, I joined and provided our support to the effort,” Girling says.

As the largest internal client for the supply chain team, the OR was the phase-one focus of CentraState’s efforts to match GTINs to actual OR products in inventory. Specifically, implantables were the focus because of their limited number and relative high cost. The catheterization lab’s GTINs, with its finite number of consumable products—about 800—were created and mapped during phase two. The third phase will involve operating room consumables and phase four will include the orthopedic implants, non-sterile and non-single units, those with non-sterile packaging.

“Points of failure largely had been the way we were getting our GTIN information and what the vendor was providing to us,” Girling says. “In some cases, a supplier was not using the same barcode that was on the package. Or they hadn’t implemented the UDI requirement appropriately or we had older inventory. We may have picked the wrong unit of measure.”

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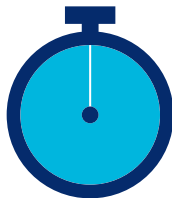
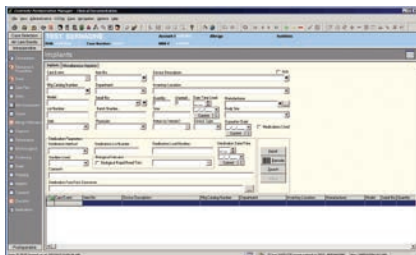
**Jane Girling**

Assistant Vice President of Corporate Materials Management  
CentraState Healthcare System

“You don’t know what you don’t know,” Finan adds. “If somebody charged for the wrong item and it was an item in the master database, the likelihood is that we would never know.”

To overcome some of the choke points, the team did a physical inventory to find identical matches and segregate problem items. CentraState’s back office systems—the one for supply chain, the one for compliance with electronic medical records (EMR), the health information management system, and the clinical system for patient care—would all need to access synchronized information based on the GTIN.

### Scanning for Significant Time Savings in the OR



1. Click on “Search” button.
2. Type in value to search.
3. Click “Search Now” button.
4. Scroll through list of items that met search criteria.
5. Select item from the list.
6. Enter Serial Number.
7. Enter Lot Number.
8. Enter Expiration Date.

**Average time to complete: 72 seconds.**



1. Scan barcode.
2. Enter patient-specific information.

**Average time to complete: 24 seconds.**

By scanning a product’s GTIN encoded in the barcode, CentraState saves substantial time in its OR—approximately 67% or one minute per product—savings that adds up with approximately 7,000 operations a year.

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Fortunately, one of the systems allowed them to record multiple identifiers for a single item, and in the case of items without a GTIN, let what information they had to be input until a perfect match could be verified. The team called upon its vendors for tissue, pacemakers, and surgical meshes, asking them to provide their GTINs for their low units of measure, populating the correct GTINs manually. (Working directly with some manufacturers is ongoing, as is educational efforts with the clinical staff, showing them what to look for.)

Today, when an OR nurse scans an item from the product categories completed that does not appear automatically in the system, she holds the packaging aside until the GTIN can be found. The IS team has written a script that updates any linked back office systems, in particular the master data system used by the hospital, so no information is lost.

Interfaces are also now being developed to automate the input UDI information into the relevant systems.

### Moving from Process to Practice

“This is an industry issue and it’s not something that we can always work out directly with manufacturers. GTIN placement is inconsistent and causes confusion: where it is placed on a package, or if a single item comes in a box, inside of which is a peel pouch (that gets opened in an OR) that shows a different number,” Finan says. “The independence given to manufacturers is challenging to us, the end-users. These are now coming to light as more of us get involved.”

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Despite the hurdles, CentraState now has nearly 80% of all phase one items loaded into their Clinical System, assuring that barcode scanning of implantables in the OR will match a product—and product charge—in inventory. The move from process to practice took only about six months. Remaining product identification issues may be worked out upstream as more vendors get up to speed on UDI adoption.



L to R: Beth Finan, Kim Kelly, Jane Girling, Nancy Miller, OR Billing Assistant, Kevin Giles and Lisa Floyd, Team Leader Surgical Services are members of the CentraState cross-functional team for implementing GS1 Standards.



## Scannable Implantable

Hardware was analyzed by Giles' team. Scanners utilized in operating room environments must be able to be properly sanitized by cleaning products and protocols already in use. In addition to the native programs that can parse barcodes, the scanners needed to be programmable, since CentraState created nearly 50 rules for identifying different types of barcodes.

CentraState has been recognized for its efforts, nominated by the American Hospital for the *Most Wired Innovator* award and named one of four finalists for an innovator award by HealthTrust Group Purchasing.

The accolades helped underscore for CentraState's leadership team the project's return-on-investment, but the project team knew the time-savings element—the minutes when eyes are on the patient rather than processes—would be most persuasive. They produced a 60-second video that vividly demonstrates what the system improvements deliver to patients and to the hospital.

"I report to the vice president of clinical services and her primary focus is always patient safety," Finan says. "The fact that this process is impactful on patient safety gives us a lot of support from leadership."

Knowing that the initiative would do double duty in complying with CMS and ONC requirements for "meaningful use" raised the level of support among the hospital administrators and board. "This is a big deal and it enables us to pass the UDI information to our EHRs," Girling says.

From a practical standpoint, having accurate costs captured for every item used, particularly in the OR where the most expensive products are expended, is important for any not-for-profit institution like CentraState.

Accuracy is equally key to avoiding audits from multiple payer entities. And having accurate chargebacks on a patient's bill is vital in building trust, especially for a community hospital.

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## Factors of Success

"I attribute our success to the quality of people that we had on the project," Giles says of the many who contributed to the project.

"Just knowing the benefit from the end result is very motivating. It's easy for the end-user to see that this is something that is going to be valuable to them, so they support us," says Finan.

"This was a terrific demonstration of collaboration between the clinical staff, the systems administrator, materials management, and the IT team," says Kim Kelly, vice president of Clinical Services. "The results have improved work flow and significantly improved product tracking and charge capture. This effort clearly demonstrates the value in the multidisciplinary approach to project management. The team did outstanding work."

"The work that GS1 Healthcare US is doing is great, because they have workgroups on the provider's side *and* on the manufacturer's side and they're bringing us together," Girling says. "It gives both groups an appreciation for what's happening in the real world."

The CentraState team agrees that a project like this takes time and patience. "I think anyone in the hospital sector understands that there is no small change in a hospital. The ramifications of downstream systems and affects are huge." Giles says.

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And collaboration between supply chains and clinical is absolutely essential. CentraState demonstrates that a small system without a large supply chain and staff support can still have an enormous impact on outcomes. "I think that, in fact, our example can help guide some of the larger systems with greater resources," Girling says.

To learn more about how GS1 Standards in healthcare, visit [www.gs1us.org/healthcare](http://www.gs1us.org/healthcare).

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## About the Organizations

### About CentraState

CentraState Healthcare System is a nonprofit community health organization consisting of an acute-care hospital, an ambulatory campus, three senior living communities, a family medicine residency program, and a charitable foundation. CentraState's mission is to enhance the health and well-being of its community through the compassionate delivery of quality healthcare. [www.centrastate.com](http://www.centrastate.com)

### 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 more than 30 local GS1 Healthcare user groups around the world that support the adoption and implementation of global standards developed by GS1®. [www.gs1us.org/healthcare](http://www.gs1us.org/healthcare).

### About GS1 US

GS1 US®, a member of GS1® global, is a not-for-profit information standards organization that facilitates industry collaboration to help improve supply chain visibility and efficiency through the use of GS1 Standards, the most widely-used supply chain standards system in the world. Nearly 300,000 businesses in 25 industries rely on GS1 US for trading partner collaboration that optimizes their supply chains, drives cost performance and revenue growth while also enabling regulatory compliance. They achieve these benefits through solutions based on GS1 global unique numbering and identification systems, barcodes, Electronic Product Code-based RFID, data synchronization, and electronic information exchange. GS1 US also manages the United Nations Standard Products and Services Code® (UNSPSC®). [www.GS1US.org](http://www.GS1US.org)

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