US

Demonstrating the benefits of scanning UDI barcodes on the front lines

Challenge

The Veterans Affairs (VA) Medical Center in Miami, Florida, spent countless hours each week manually entering product codes into systems for hundreds of medical implants and other products that were received, placed into inventory, and ultimately used in patient procedures and care.

Approach

To address these challenges, the hospital introduced barcode scanning to its inventory management processes. As medical device manufacturers mark their products with unique device identifiers, per the U.S. Food and Drug Administration's (FDA) Unique Device Identification (UDI) Rule, these unique device identifiers are available for point-of-care scanning.

$ 5-10,000
estimated savings each month

Scanning eliminates human error from manual data entry

70 seconds
Manual entry

20 seconds
Scan entry

Saving 50 seconds per entry saves the hospital more than 1 hour per week

The Veterans Affairs (VA) Medical Center in Miami, Florida, once spent countless hours each week manually entering product codes into systems for hundreds of medical implants and other products that were received, placed into inventory, and ultimately used in patient procedures and care. To stay on top of correct product names and expiration dates, to prevent inadvertent human error, and to positively impact patient safety—a better system was needed.

Although implementation of the U.S. FDA UDI Rule is ongoing, according to the VA hospital, nearly 90% of products used by their operating rooms have such barcodes today. As medical devices and implants are received, the Miami VA hospital scans the barcodes, capturing this valuable product information automatically. The information is then stored in the hospital's Medical Device Management System (MDMS) called UDITracker®, provided by Champion Healthcare Technologies, a GS1 US Solution Partner.

Margreth Spruill

Solution

To address these challenges, the hospital introduced GS1 barcode scanning to its inventory management processes. As medical device manufacturers mark their products with unique device identifiers, per the U.S. Food and Drug Administration's (FDA) Unique Device Identification (UDI) Rule[1], these unique device identifiers are available for point-of-care scanning.

For manufacturers that have chosen to use the GS1 System of Standards to implement the rule, the GS1 Global Trade Item Number (GTIN) is used as the UDI device identifier (DI) and GS1 Application Identifiers (AIs) are used to represent UDI production identifiers (i.e., batch/lot, serial number, expiration date, and/or production date). This information is encoded in a GS1 barcode, such as a linear GS1-128 barcode or a two-dimensional (2D) GS1 DataMatrix barcode and, as such, is available for scanning.

[1] For information about the rule, see the U.S. FDA Unique Device Identification System.

Benefits

By using barcode scanning and the UDITracker® system, the Miami VA hospital has improved the efficiency of its operations since it can now easily and accurately keep track of implants and other medical devices. Improvements in productivity and inventory management have also been realised.

The hospital realised a $5,000 to $10,000 savings each month by using inventory that might otherwise have expired.

Most important, patient safety has improved since scanning barcodes helps to eliminate human error from manual data entry. Also, capturing uniform device identification information saves tracking time, and could conceivably save lives in the event of a recall.

Making processes easier

The VA Medical Center in Miami is one of 170 VA hospitals in the United States and is a primary care center for nearly 150,000 veterans in South Florida, offering them 24/7 comprehensive services. Located amid several major healthcare providers in the heart of the city, Miami's VA Medical Center is a mini-trauma centre for vets.

"Not all hospitals can do all the cases that we do. If you're a vet and you're injured, most vets will come to us," says Margreth Spruill, a surgical technician with the Miami VA hospital.

Miami VA's Spruill, a veteran herself with notable computer skills, noticed that implants and other medical devices being delivered to the operating room displayed linear barcodes, leading her to convince the hospital UDI administrator to supply her with scanners.

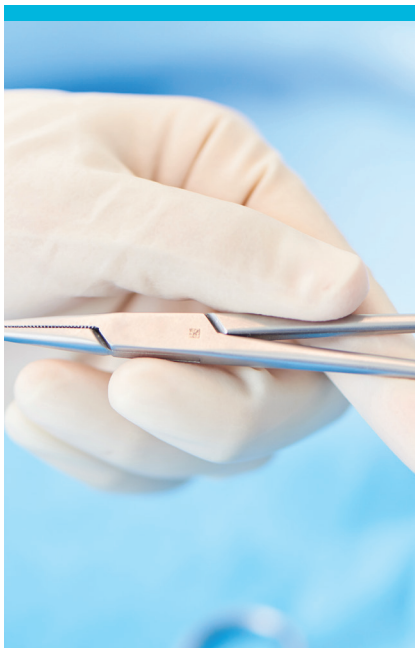
Spruill reports, "I knew that scanning would make life easier in managing all of the inventory we had to check-in and check-out every day."

In a hospital that does as many as six cataract surgeries and at least three implant surgeries per day, a fair amount of serial numbers need to be recorded in patient records every day. Using manual data entry left substantial room for error in a busy hospital environment.

The hospital works with Champion Healthcare Technologies, a technology company that optimises tissue and implant management workflows. Champion provides the hospital with UDITracker®, an inventory management and tracking platform specially designed for UDI tracking.

Champion is currently working with the VA hospital to integrate implant usage information into the hospital's proprietary electronic health record (EHR) system. Implants and other devices are scanned on the front-end upon receipt of the products and again when products are checked out of inventory for procedures. The data captured for implants is also added to the patient EHR, adding full traceability to the patient.

Champion's system helps the hospital scan and store implant UDIs (including GTIN and any production identifiers, or PIs) in its systems. This process helps the hospital overcome challenges related to non-availability of dedicated fields to store GTINs in its Enterprise Resource Planning (ERP) system.



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>
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> Surgical technician
> Miami Veterans Affairs Medical Center

An implant by any other name

Using a manual data entry approach, technicians would type in certain pieces of product information obtained from the label, including product name. This was causing issues because team members varied in how they recorded the product name: one team member might enter a product name one way, while another technician might enter it as something else.

Sheer volume also posed a challenge. The hospital performs eye surgeries each day, for instance. Consider that a single manual entry of a device code takes 70 seconds. A scan of the same device takes just 20 seconds. Multiplying the 50-second time savings by approximately 100 procedures in a given week, equates to the hospital saving more than one hour in that week.

Spruill relates a case in point: "The other day I had a case involving 10 dental implants. Because they were not barcoded, I had to type every one of those in by hand, plus transfer them from the dental service into the OR service to keep inventory straight. It took me almost an hour to type all of that into our system, do the transfers, and get the information into the patient record. The very next case was a knee implant, where we had just as many implants and related accessories – but they were barcoded and in UDITracker® so I could just scan them in. Scanning took me less than five minutes. That perfectly illustrates the time difference."

Scanning as seen through an implant lens

As shipments of implants and other medical devices are received in the hospital's warehouse, information such as the transaction number, purchase order (PO) number, and date of receipt is recorded in the UDITracker® system. The products are then handed off to the appropriate clerk.

The clerk scans each product's barcode to capture the product's GTIN and any other encoded information (like the batch/lot number and expiration date) and enters it into the inventory system. The product is then physically placed on the shelf of the operating room's (OR's) inventory.

When a surgeon orders a lens for implantation, the clerk removes it from the shelf and scans its barcode once more in a pre-op setting.

With that, the UDITracker® system is updated to show that the implant was used, and forever links it to the patient receiving the implant—making it possible to track the implantable device from point-of-receipt to point-of-care, and for the patient's lifetime if there is ever a recall. This improves efficiency, safety, and patient care.

Accuracy is also greatly enhanced. When someone manually inputs a product, they might leave off a number, or they'll think the number "8" is the letter "B" or they'll misread it. When someone gets it later on in the process, it is compared with what's in the EHR, the implant sheet and the actual implant sticker. The barcode can actually help catch errors.

Had a barcode been available for scanning at the outset, however, the need for this corrective procedure would be eliminated.

Miami's Spruill gives Champion high marks for its assistance and expertise in the healthcare arena. "We do training maybe once every six months or as needed as we get new users. It's very informative and helps us keep our operations efficiently moving. Champion plays a major role for us," Spruill says.

Champion helped the hospital "cleanse" its database of imprecise product names and non-unique manufacturer catalog numbers, and move to standardised, unique device identifiers (GTINs) instead so all product information is aligned and can be readily found.

> We can locate and use items that are due to expire first. To check expirations manually on packages, lens by lens, is extremely time consuming – especially when you have hundreds of lenses. The expiration date information [contained in the barcode and captured by UDITracker® when scanned] saves us money as well as time."

Margreth Spruill
Surgical technician
Miami Veterans Affairs Medical Center

Time is of the essence

With inventory tightly and accurately controlled, product expirations can be reduced, saving waste and money. The programme enables a search by expiration date, quickly displaying the products with the closest expiration.

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In the event of a recall, scanned product data residing in UDITracker® can prove to be invaluable for speed and accuracy. UDITracker® includes a recall feature that enables users to click on the item being recalled, and the technology shows every patient in which the device was used and where the remaining devices are stored. Aside from the time savings this represents, the patient safety aspects are profound.

"When we had a tissue implant that was recalled, I went into the system, typed in the product code number and the system pulled it right up, supplying every name within a matter of minutes—everybody that used it and in what department," Spruill says.

> Managing inventory to ensure implants are there when our veterans need them is what we always aim to do."

Margreth Spruill
Surgical technician
Miami Veterans Affairs Medical Center

* Source: Miami VA Hospital

The voice of experience

Spruill admits that busy people resist change, but that implementing barcode scanning quickly proves its worth— ease-of-use, time savings and accuracy—to even the most doubtful professionals.

Spruill recommends that those considering the changeover to scanning barcodes arrange for a demonstration at facilities already using it. And when it comes time to introduce scanning into a facility, proper training should be coupled with the appropriate scanning equipment. For example, some products are marked with linear barcodes and some products are marked with 2D barcodes, so hospitals should invest in image-based scanners which are capable of reading both.

The hospital is also poised to expand the use of scanning as it updates its proprietary Computerised Patient Record System (CPRS) with a commercial EHR system.

Spruill advises that in the end, it's all about taking care of those who have taken care of us—our veterans. "Managing inventory to ensure implants are there when our veterans need them is what we always aim to do," says Spruill.

The value of barcode scanning

- **Increased efficiency:**
  The Miami VA hospital can now easily and accurately keep track of implants and other medical devices in a highly efficient and precise way.
- **Greater productivity:**
  In the hospital, scanning linear barcodes (e.g. GS1-128 barcodes), instead of using manual data entry, results in a time savings across surgeries can add up to at least one day per month.
- **Better inventory management:**
  The ability to readily identify and then use products nearing their expiration dates eliminates waste and saves money. The hospital estimates a $5,000 to $10,000 monthly savings when using inventory that might otherwise have expired.
- **Improved patient safety:**
  Scanning eliminates human error from manual data entry, and capturing uniform product identification information throughout distribution and use saves tracking time and conceivably could save lives in the event of a recall.

About the author

Margreth Spruill
Surgical technician
Miami Veterans Affairs Medical Center

Margreth Spruill has worked for the VA Medical Center in Miami since 2010. Margreth is a veteran herself, she was previously a First Sergeant and an Operating Room Platoon Sergeant in the US Army. She has a keen interest in computers and assisted in implementing scanning to manage inventory at the VA hospital.

About the organisation

Miami Veterans Affairs Medical Center

The Miami VA Healthcare System serves veterans in three South Florida counties: Miami-Dade, Broward and Monroe. The Miami VA Healthcare System is an accredited comprehensive medical provider, providing general medical, surgical, inpatient and outpatient mental health services. The Miami VA Healthcare System operates 372 hospital beds, including a four-story community living center attached to the main facility. www.miami.va.gov

Champion Healthcare Technologies

CHAMPION HEALTHCARE TECHNOLOGIES

Champion Healthcare Technologies is a technology company that is dedicated to preserving the integrity of healthcare. Champion solutions, like UDITracker®, are specifically designed to provide oversight and insight into workflows and systems utilised by hospitals. www.championht.com