

**CASE STUDY: Froedtert Hospital Implements RAIN RFID Technology
to Ensure Inventory Visibility of Tissue, Implants, and Organs**

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-- Terso Solutions, Inc. and TrackCore, Inc. --

OVERVIEW

In 2015 Froedtert Hospital, based in Milwaukee, Wisconsin, implemented Terso Solutions' RAIN RFID-enabled enclosures with TrackCore, Inc.'s tissue and implant tracking software. The combined solution created a fully automated inventory management system implemented with an end-to-end Epic integration. This real-time inventory tracking system generated tremendous time and financial savings, improved compliance monitoring for the hospital, and most importantly, enabled hospital staff to focus intentionally on what matters most - patient care.

ABOUT FROEDTERT HOSPITAL

Froedtert Hospital is the primary teaching affiliate for the Medical College of Wisconsin. A 585-bed academic medical center nationally recognized for exceptional physicians and nurses, research leadership, specialty expertise, as well as state-of-the-art treatments and technology. Froedtert Hospital is a referral center for advanced medical practice care in 37 specialties with over 1,000 students in training. Froedtert Hospital, in partnership with the Medical College of Wisconsin, has more than 2,000 research studies including clinical trials; and is the only level 1 trauma center in the region. As of June 30, 2017, Froedtert Hospital had 29,386 patient admissions, 71,989 emergency visits, 3,440 trauma center patient evaluations, 2,701 births, 97 kidney transplants, 10 heart transplants, and 809,191 outpatient visits.

THE CHALLENGE

Froedtert Hospital identified an operational pain point in their surgery departments that many other hospitals also find themselves faced with - the tracking and overall management of tissue and implant inventory. Froedtert Hospital's challenge was having limited inventory visibility and identifying expired or recalled product stored at the hospital.

Froedtert Hospital was utilizing barcode scanning as well as manual tracking throughout the hospital which created time inefficiencies as well as human error. Due to this manual tracking method it became extremely challenging to meet regulations

According to the UPS Healthcare Supply Chain Vital Signs U.S. Hospitals Study, estimates indicate that the operating room represents upwards of 40-60% of a hospital's total supply expenditures, yet optimizing the OR's supply management has long been a challenge.

enforced by The Joint Commission for full chain of custody tracking, temperature recordings, vendor credential management (FDA and AATB) etc. Prior to the implementation of the TrackCore and integrated RFID management system, Froedtert Hospital did an evaluation of their current workflow, looking for duplicate or inefficient processes and any potential gaps in compliance. The findings showed that Froedtert's Hospital staff was manually documenting tissue usage, patient information, and time stamps resulting in arduous log books,

+ KEY VALUE DRIVERS

- + Increase visibility
- + Decrease time spent on data entry
- + Automate inventory applications
- + Decrease waste and product loss
- + Increase time spent with patients and on research
- + Proven compliance
- + Ensure accuracy in expiration date, recall management and reporting
- + Eliminate errors and gaps in reporting

high labor costs, human documentation errors, and essentially zero inventory visibility.

THE SOLUTION: REAL-TIME INVENTORY MANAGEMENT UTILIZING RFID TECHNOLOGY

Froedtert Hospital determined their current manual tracking process was unsustainable and research pointed

them to an automated inventory management system to improve their processes. To do this, Froedtert Hospital implemented TrackCore Inc.'s tissue and implant tracking software, TrackCore Operating Room, and in 2015 installed RAIN RFID-enabled enclosures from Terso Solutions. The adoption of this technology has seamlessly automated Froedtert Hospital's tracking process, which has eliminated record keeping from being top-of-mind for nurses and other hospital staff.

Since their initial go live, Froedtert Hospital has tracked approximately 10,000 high dollar tissues and implants and currently stores approximately 1,800 items at any given time.

In the surgery cores, Froedtert Hospital has a total of nine (9) cold storage RAIN RFID-enabled units, including four (4) ultra-low temperature (ULT) freezers (-86 to -50 °C), two standard freezers

(-25 to -15 °C), and three (3) refrigerators (2 to 8 °C). This newly implemented workflow allows a nurse to access the locked RFID enclosure using a personal ID badge, grab the RFID-tagged inventory item(s) needed, shut the door, and return to the surgical suite.

Prior to storage, all products are labeled with RFID tags. The RFID enclosures automatically track who took the item, the time it was removed and the temperature of the item when it was removed from storage. This transactional data is sent directly to the TrackCore Operating Room software to automatically track the chain of custody and monitor the integrity of the products.

Froedtert Hospital no longer depends on manual processes and data entry with the new automated system. The hospital is now able to track items swiftly and accurately.

Stored inventory at the hospital can be quickly located, and staff who last handled it can be easily identified. Inventory logs through the TrackCore Operating Room software, makes follow up and reconciliation easy and efficient.

"The TrackCore Software has been implemented in over 600 hospitals across the country and while many customers use simple barcode scanners for inventory tracking, the trend has certainly been moving towards RFID. We now have over 200 RFID units installed in the marketplace and our customers are experiencing immediate benefits in automated chain of custody tracking, real-time inventory, staff accountability and temperature logs."

- Ross MacGregor, Vice President of Business Development at TrackCore, Inc.

APPLICATION DIVERSITY



TISEEL is a fibrin sealant for controlling bleeding in surgical techniques.

THE CHALLENGE

- TISEEL requires refrigeration and constant temperature monitoring
- One dose of TISEEL costs between \$300-\$400, meaning inventory loss was expensive
- It was difficult to track if TISEEL was removed from refrigeration and for how long

THE SOLUTION

- TISEEL is now tracked in real-time using TrackCore RFID temperature controlled enclosures
- Increased checks and balances with RFID automated inventory creates an added level of safety for patients and aids in their recovery
- Costs associated with unused medication can now be recovered



THE CHALLENGE

- Froedtert needed to track organ donation inventory
- Organs remain in the hospital for 6 days or less and staff must check on these organs every 24 hours
- Audits were done manually

THE SOLUTION

- RFID technology allows staff to monitor and audit when the RFID refrigerator was opened and what staff member complied with record keeping.
- Staff can monitor organ inventory on a 24/7 real-time basis.
- Manual paper logs are a thing of the past
- Automated logs help ensure accuracy and reporting is made easy



Prior to implementing TrackCore Operating Room with RFID technology, Froedtert Hospital had three full time staff members tracking and monitoring biologics and other high-value inventory in the Operating Room. The streamlined process now only requires one staff member.

The automated system enables staff to spend more time on the tasks they enjoy – such as further evaluation of drugs and medical products that can help in better addressing illnesses as well as improving patient safety and outcomes.

COMPLIANCE REGULATION AND OPERATIONAL PROCESSES MADE EASY

The TrackCore and Terso integrated solution has greatly changed operational processes around the management of inventory to be more exact and simplified, all while increasing Froedtert Hospital's ability to meet strict and growing JCAHO and FDA compliance regulations.

Since the implementation of this inventory management system, Froedtert Hospital passed the Joint Commission audits with zero instances due to the traceability, real-time visibility, and accuracy of TrackCore Operating Room and RFID-enabled enclosures.

For Donna Hafemeister, a Registered Nurse and Implant Coordinator at Froedtert Hospital, the immediate impact of the automated RFID inventory system was pretty clear.



Not only does TrackCore's system allow nurses to do away with the operational processes and the additional time it takes to log items, its benefits expand to hospital audits.

"UNOS (United Network of Organ Sharing) and MTF (Musculoskeletal Transplant Foundation) came into the hospital [for audits] and when they saw TrackCore integrated with RFID enclosures they said 'This is great, you have RFID!' It makes the job of auditing much easier. The auditor was familiar with RFID technology, but was most impressed with the 'trackability' of the software system," said Hafemeister.

CONCLUSION

With the success of this program, Froedtert Hospital has realized the

ease of implementation and scalability, and is seeking to expand their automated inventory management system to include RAIN RFID-enabled ambient cabinets for storing tissue and other high-value inventory. Additionally, this program has the potential to expand

to other facilities and departments for a fully integrated inventory management system. Froedtert Hospital has identified additional value in both TrackCore and RFID technology to be - accurate record keeping, decreasing inventory carrying counts which has resulted in time, money and valued resource savings.

"TrackCore and RFID technology has definitely decreased full time hours and staff involvement needed to manually manage inventory. There used to be several employees tasked with various pieces of the audit logs, now I can handle everything myself because of the efficiencies of the application."

*- Donna Hafemeister, RN Implant Coordinator, Surgery
Froedtert Hospital*



ABOUT TRACKCORE, INC.

TrackCore, Inc. is a privately held company headquartered in Grand Rapids, MI. TrackCore began with a vision and commitment to improve patient safety surrounding tissue and implants. TrackCore Operating Room was launched in 2006 and is now the industry leading, flagship product of TrackCore, Inc. designed to eliminate the need for arduous manual processes surrounding tissues and implants. TrackCore Operating Room is now in over 550 hospitals with over 200 RFID implementations, nationwide. TrackCore, Inc. continues to invest in its products and has expanded the product offering to include TrackCore Interventional and TrackCore SameDay. TrackCore Interventional is a product designed to control costs and improve patient care through consumable tracking. TrackCore SameDay automates the bill-only process for consigned special-order implants. Visit www.trackcoreinc.com for more information.

ABOUT TERSO SOLUTIONS, INC.

Terso Solutions, Inc. is the leading provider of automated inventory management solutions for tracking high-value medical and scientific products in healthcare and life science. Terso Solutions, Inc. is backed by 14 years of RFID product development and implementation experience. Terso's product line includes RAIN RFID cabinets, refrigerators, freezers (-20C to -80C), smart rooms, and mobile solutions. Terso has deployed over 2,100 RAIN RFID-enabled sensors worldwide. Headquartered in Madison, WI, Terso Solutions is a wholly-owned subsidiary of the Promega Corporation. Visit www.tersosolutions.com for more information.