



CASE STUDY: How Loma Linda University Medical Center partnered with VUEMED to achieve data-driven supply management optimization and cost savings

INTRODUCTION

Loma Linda University Medical Center (LLUMC) is a 507-bed academic medical center within Loma Linda University Health, a Seventh Day Adventist six-hospital system that treats more than 1.5 million outpatients every year and serves as the only Level I trauma center for a region that covers more than 25 percent of California.

VUEMED is a global healthcare technology company working to solve acute inventory management, supply chain, and product utilization documentation problems at hospitals. Its SaaS and Cloud-based RAIN RFID and barcode scanning solutions allow hospitals and their suppliers to track, manage, and document clinical supply and device usage throughout their supply chain and healthcare facilities. VUEMED's UDI-compliant solutions provide exact product identification and documentation, capture and analyze data for clinical and inventory related transactions, and then disseminate this data to other hospital systems such as EMR, clinical documentation systems, billing, and materials management.

INDUSTRY BACKGROUND

The healthcare supply chain continues to be riddled with endemic waste, poor and error-ridden documentation at the point of care, and a lack of basic information like what is in stock and where it is located. Poor inventory management directly affects hospitals' ability to achieve their profitability as well as patient care objectives. Indeed, supply chain costs are predicted to become the top expense for hospitals by 2020, particularly affecting institutions with a high Case Mix Index such as academic medical centers with busy interventional departments. Such departments (Cath labs, interventional radiology, EP, OR, GI/endoscopy) are areas where the majority of supply expenses occur, and where consumable supplies and implants constitute an essential part of the patient care process.

However, despite the high cost and patient care impact, most of these departments lack visibility and operational control over the supply spend and levels of waste, as well as accurate utilization data and effective inventory management tools and practices. It is common to see up to 20% of inventory value expire on the shelves, up to 25% of inventory sit around unused for at least 12 months or longer, and up to 30% of inventory value over and above what is needed to support clinical cases.

THE CHALLENGES

Before VUEMED was brought in, the cardiovascular department at LLUMC lacked control, visibility, and automation in managing consumable devices and supplies inventories, resulting in high rates of wasted and unused inventory, and inaccurate and incomplete supplies documentation and billing at the point of care. Fewer than 50% of cases had their supplies captured accurately due to manual supply and billing documentation, and >50% of items on-hand had no traceable correlated purchase history. There were no tools available or processes in place to address these issues, and there was a fragmented and uncoordinated approach to dealing with various aspects of supplies management between the clinical department, supply chain, finance, and IT.

THE SOLUTIONS

The cardiovascular department at LLUMC brought the VUEMED team on board to help resolve these problems through implementing RAIN RFID technology for accurately capturing and disseminating the data, as well as instituting best practices, process controls, and Key Performance Indicators (KPIs) for accountability and oversight. The VUEMED team worked closely with the department leadership, supply chain organization, IT, and finance to put the tools in place, build the appropriate interfaces, realign roles and responsibilities, and establish financial and operational oversight.

THE GOAL

VUEMED-LLUMC Partnership

1. Gain full visibility and control over supply spend and utilization in order to reduce supplies purchases and waste levels;
2. Optimize inventory size and composition to meet clinical needs;
3. Reduce unnecessary product variation;
4. Ensure comprehensive and accurate charge capture.



Dollar share of products **NOT** tracked or accounted for by most hospitals. Inventories are poorly managed and not tracked, costing \$ billions in waste.

SUPPLIES

- 2nd largest budget item after labor
- >80% in the procedural areas
- 30% to 80% of the procedure costs

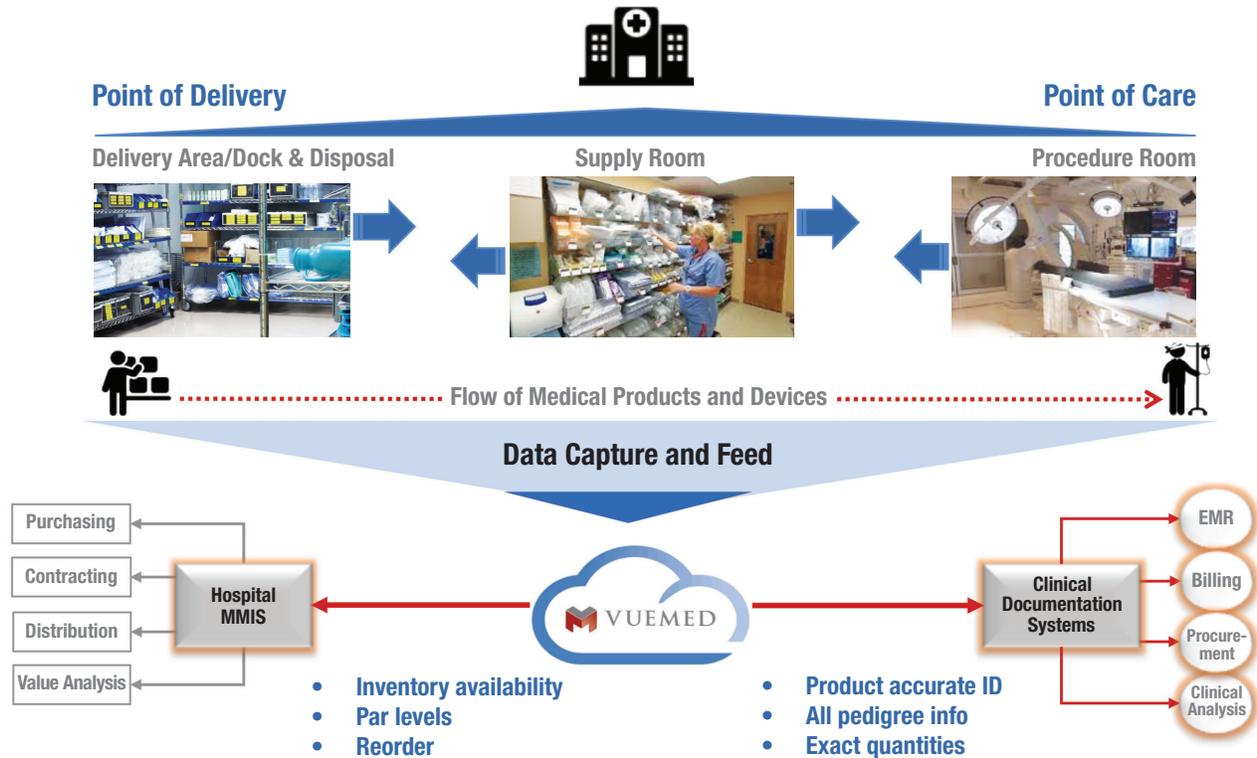
VUEMED established a performance dashboard with a set of monthly KPIs to track changes and trends in inventory levels, purchases, utilization, cost per SKU, unused and wasted inventory, and items above necessary par levels, etc. These metrics ensured that progress was being monitored and that the key constituents were being held accountable for the results. Actionable metrics or KPIs are essential for showing the relationship between supplies purchases and clinical and operational performance, and thus for keeping supply costs under control. Effective KPIs provide hospitals with the data visibility that is necessary for guiding and achieving inventory optimization, preventing waste, and controlling supply spend; they are the cornerstone of a competitive, strategy-oriented clinical supply chain.

VUEMED's UDI-compliant data collection technology tools ensured the accurate capture of every item coming in and going out of the department, as well as utilized at the point of care. Interfaces were then put in place to link VUEMED's data capture system with the hospital's clinical documentation and materials management systems to ensure streamlined processes for clinicians and administrators, and full transparency and visibility of data flow from item purchase to item utilization and billing. Key processes, and roles and responsibilities, were set up to ensure the implementation and adherence to daily/weekly/monthly protocols and best practices to achieve the desired results.

LLUMC is now in a strong position to support a significant increase in complexity and volume of cases without any significant increases in on-hand inventory.

"Our solutions bridge the gap between materials management and clinical areas in order to get the most accurate and timely communication of data on a product's availability, location, and pedigree information (lot or serial number and expiration date)."
 - LANA MAKHANIK, COO/CO-FOUNDER of VUEMED

All data about products and their movements from delivery to point of care are recorded and fed into other hospital systems as well as the VUEMED Cloud for analyses and guidance



Through its partnership with VUEMED, this department has achieved:

1. Full visibility for each item, from requisition to billing;
2. Automated procure-to-pay processes;
3. Measurably streamlined operations;
4. Reduced waste;
5. Increased charge capture; and
6. Enhanced clinical documentation accuracy.

THE RESULTS

Today in the Cardiovascular Department at LLUMC:

- ✓ Items are being tracked from point of entry to point of care with a perpetual inventory management system;
- ✓ Data capture of clinical supplies for patient charges has been automated;
- ✓ Purchases have been closely aligned with consumption needs; and
- ✓ LLUMC staff roles and responsibilities have been realigned to establish effective supply chain oversight and accountability.

OWNED EXPIRING VALUE vs. REMOVED EXPIRED VALUE

Owned Expiring 90 Days Total Value vs. Removed Expired Total Value (April 2018 - March 2019)

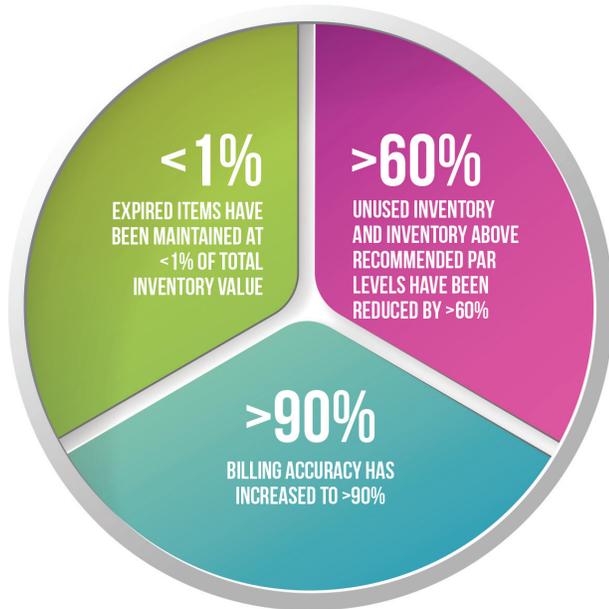


OWNED UNUSED VALUES

Owned Never Used SKUs, Units, and Values (Past 12 Months)



Additionally, in an effort to tackle unnecessary variation in the utilization of medical devices, LLUMC's clinical department managers have also analyzed the data generated by VUEMED's solutions to compare physician utilization of products by type of case and analyze the cost of products and patient outcomes. Their goal is to normalize and standardize the utilization of products so that they can reduce the unnecessary amount of product variation among physicians and, at the same time, achieve the best clinical outcomes for their patients.



Most importantly, the achievement of full visibility and tracking of all medical products has resulted in significantly improved patient safety at LLUMC:

- Recalled products are trackable to individual patients within seconds
- Expired devices are never placed in patients
- Products are guaranteed to be available for a procedure
- Patients' medical records are always accurate and complete

"For us, it's all about the empowerment of hospitals through meaningful and actionable data, and how that data can be collected and generated with the most accurate and automated data capture technology, and analyzed and made available using the power of Cloud computing." - ARNOLD CHAZAL, CEO/CO-FOUNDER OF VUEMED



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