



Cath Lab Inventory Management

How GE Healthcare's Centricity™ Cardio Workflow helped improve operational efficiency and the bottom line at Cabell Huntington



Background:

Cabell Huntington Hospital is a 303-bed teaching hospital located in Huntington, West Virginia. Cabell Huntington is home to the Hoops Family Children's Hospital and the Edwards Comprehensive Cancer Center and cares for patients throughout West Virginia, eastern Kentucky and southern Ohio. Opened in 1956, it is affiliated with Marshall University School of Medicine, Pharmacy and Nursing. It is the only hospital in West Virginia and the Tri-State region to be named to America's 250 Best Hospitals by Healthgrades which recognizes the top 5 percent of 5,000 hospitals in the nation for clinical excellence. Cabell Huntington's interventional department consists of two radiology labs, one cardiac catheterization lab and one CT suite.

The Cabell Huntington team needed a single system to manage inventory across both the interventional radiology and cardiology departments, especially the high-priced items used in the cath lab and interventional radiology suite. Traditionally those items

had been counted and managed by hand. But the department leadership and facility administration were convinced a manual method was both inefficient and flawed as revenue was likely falling through the cracks. "We needed an electronic system to be able to efficiently track inventory and capture charges," says Assistant Director of Radiology, Stacy Davis. "We knew we could do better."

The system they chose was the GE Healthcare's Centricity™ Cardio Workflow (CCW) with Inventory Management and Charge Capture modules. The team liked the solution for its power to comprehensively track inventory used during interventional procedures, interface to their enterprise materials management and billing systems, create reports and run clinical and administrative queries. They also wanted to offer timelier and more accurate inventory and billing.

Challenges:

Like many other healthcare enterprises across the country, Cabell Huntington Hospital has been challenged with improving care quality while monitoring operations and improving financials. In the cath and interventional labs, where supplies often have high price tags, the main challenges fell into two categories: inventory loss and staff utilization.

Within inventory loss, they knew they were challenged by missing and unaccounted-for supplies, items that were borrowed and not replaced, supplies that expired prior to use, inventory variances and cycle counts that were off compared to material inventory.

Staff members were burdened too. They were capturing data manually, experiencing errors in batch entries and dedicating considerable time accounting for supplies at the end of each case. Supervisors were spending a lot of time reconciling charges.

The leadership of Cabell Huntington Hospital knew they needed to move away from manual inventory, with staff logging, counting, managing and charging each item separately. "During each case, we would write down on paper all the items we used," says Director of Radiology Nancy Godby. "Then we'd manually charge

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them into our billing system and manually take them out of our inventory system. We all realized we were not capturing all of our charges because it was such a manual process.”

Led by their vice president of hospital operations, they sought out ways to provide better efficiency and accountability. They needed fully electronic inventory management in real time. The vice president of hospital operations established a dedicated Lean project with this process as its primary focus. It was a first for the hospital. “At the center of the project was a desire and need to implement an electronic system, and data capture to be able to ensure we were capturing all charges and also monitoring our inventory all at the same time,” Godby explains. “It wasn’t a quick process, taking two and a half years from initiation to implementation and was very well thought out and executed.”

The Lean Team identified a charge entry threshold of 20 minutes per case along with 45 minutes of charge reconciliation each day for a total investment of 6 hours and 45 minutes. The team projected a post-implementation target goal of two hours. The project plan called for using specific charges and identifying an inventory management solution to achieve several goals: auto ordering of supplies; electronic charge drop; decrease in obsolete and expired stock; improved order accuracy and creation of a method to mine data. Prior to implementation, the team projected modest savings annually and over three years.

In short, the need became clear for a powerful, unified, feature-rich solution that was easy to implement, use and manage. And the sooner the better, as the pressure was on to improve care, operations and the bottom line as soon as possible.

The Solution:

At Cabell Huntington Hospital, the need for full accountability of cath and interventional lab inventory precipitated the team’s choice to move from manual to a fully electronic inventory management. What made GE Healthcare the best choice? Topping the list was a tight integration with GE Healthcare’s Mac-Lab hemodynamic recording system and the ability to integrate with existing processes and equipment. Equally important was their long-standing and solid relationship with the company as well as the fact that their sister facility, St. Mary’s Hospital, which they were in the process of acquiring, was also a GE Healthcare customer. Money mattered too. The system needed to be affordable and it had to interface well with their McKesson MMS and Cerner EMR.

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- John King, Interventional Radiology Services Supervisor, Cabell Huntington Hospital

not an easy task to find a vendor that could meet all of our needs.”

The team evaluated a number of systems and in the process engaged several vendors. They chose three then narrowed it to two before deciding on GE Healthcare. “That made sense for us because our staff already knew how to use GE Healthcare and we know a lot of the people,” she says. “It was the right decision.”

Centricity Cardio Workflow brings a comprehensive set of stock-management tools to track what’s on the shelf and generate more accurate orders. It offers the ability to manage master supply lists, procedural inventory documentation and stock. During procedures, supplies are documented via barcoding along with details on the use of balloons, stents, guidewires and other devices. Procedural data automatically flows into Centricity Cardio Workflow, so it can be utilized for reporting and billing—an advantage of single-vendor integration. A flexible system allows for bidirectional interfaces to enterprise wide materials-management and charge capture systems. It also gives clinical, operational and administrative teams the ability to extract discrete quality data, analyze those data points and make them readily available to external stakeholders.

Centricity Cardio Workflow has “become the brain of our Mac-Lab as we’ve upgraded our Mac-Lab,” notes John King, Cabell Huntington’s interventional radiology services supervisor. “We went away from the GE Healthcare’s legacy CVIS, Centricity DMS, so Centricity Cardio Workflow now runs our Mac-Lab. The fact that it could become the brain of our hemodynamics system as well as facilitate inventory and billing was a big piece of the thought process as well.”

Centricity Cardio Workflow’s barcode scanning further lifted the selection above other vendors’ products, according to King. “GE Healthcare had one of the most sophisticated barcode scanning capabilities we saw. It can parse out lot numbers, expiration dates and other specific details. It recognizes the different types of barcodes used in the healthcare industry.”

Centricity Cardio Workflow also supported Cabell Huntington’s patient safety initiative, which demands proactively managing recalled devices and tracking in-use as well as expired products. The team is reassured to know all related devices and supplies are accounted for in billing. King says it’s now much easier to track expiring devices, where once someone had to physically go through every cabinet. “Now, we can pull a report and it tells us what’s expired,” he says, “then we can go look for that particular item. We’ve basically eliminated expired devices and their wasted cost.”

Cost was a big issue in choosing Centricity Cardio Workflow, King says. “The cost of an upgrade versus the cost of switching to a completely different vendor with several new systems would have been very large, and that made a difference in why we [chose] GE Healthcare.”

Best of all, it is also easier and safer, Godby adds. “We simply scan the inventory that we use and export everything to billing. That removes it from our inventory system and charges the patient as well. We do still reconcile [charges] the next day to make sure no errors occurred, and we will always want to have that peace of mind. But it only takes a minute and is just a double check. Even with electronic systems, as managers, we have to ensure accuracy.”

Outcomes:

The outcomes at Cabell Huntington Hospital are notable. And the cost savings and improved staffing efficiencies are demonstrable and significant. In fact, Centricity Cardio Workflow paid for itself in 16 days. Here’s how.

The Cabell team recognized a 70 percent reduction in time to manage inventory, par levels and stocking on an ongoing basis. Year-end cycle counts previously done by two or three two-person teams over a 2-3 week period are now accomplished by two people in far less time. Prior to Centricity Cardio Workflow, charge capture submission took 20 to 45 minutes per case based on the complexity. Charges are now cumulated during a case via barcoding and are completed in one-click post case. From 2016 to 2018, the facility saw about a 5.5 percent savings in the accuracy of the cycle counts. “We see time reductions on a daily basis versus the old way of counting,” King adds. “The time spent charging now is spread throughout the day. We previously spent 20 minutes on a small case and even 45 minutes on a big case, depending on what we used and what prices we had to look up in

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our [paper] manual. We always hoped it was right because that was based on tick marks on an inventory supply sheet of 1,600 items during the procedure. Now this is all done via barcode, scanning everything utilized during a case and hitting export when the case is done.”

Supervisors are reconciling inventory more quickly, too. “Drastic” is the word King uses to describe the time savings for staff and managers. Accuracy is far better as well. Needless to say, staff members are happy. They have embraced the change and are working well with the Centricity Cardio Workflow platform.

Accuracy in inventory is better too, with staff members reconciling charges immediately after an item is used rather than risking losing or misplacing a barcode or not scanning something. “We’ve decreased the par levels on some items because they are getting properly taken out and reordered, which has allowed room for us to stock additional items we need,” says Holly Blatt, Interventional Radiology Services Supervisor. “While we aren’t stocking fewer items, we stock more accurately to usage which makes good sense.”

Volume has increased too. Time savings from improvements in inventory and departmental efficiency was reallocated to support more procedures which helped the department increase their volume by 9.7% YoY. That brought an increase of 9.7% in procedure



Clinical Outcomes

Streamlined tracking of devices

- helps manage device expiration as well as recalls and defects



Operational Outcomes

Increase in Volume

- Increase in Cath + IR lab volume while staff and hours remained flat

Time to Maintain Inventory

- ~70% reduction in time to maintain inventory, par levels and stocking

Time to Charge

- Charges cumulated during case by barcoding and completed in 1-click post-case



Financial Outcomes

Total Supply Revenue Increase YoY

- 54%

ROI to Pay for System

- 16 days¹

Charge Capture Accuracy

- 5.5% savings in cycle count accuracy

billings as well. And that was all accomplished without increasing hours, staff or physicians.

Thus, the return on investment associated with the increase in volume clearly showed Cabell that Centricity Cardio Workflow paid for itself in 16 days. "When it comes down to it, the results speak for themselves," according to Godby.

Tim Martin, Vice President of Hospital Operations and Edwards Comprehensive Cancer Center, who kicked off the Lean project agrees. "We are very proud of the success of the interventional radiology and cardiology teams in the implementation of the GE Healthcare Centricity Cardio Workflow Inventory Management program," Martin says. "The charge capture and inventory management achieved through this addition have exceeded our expectations."

Conclusion:

In addition to the revenue, speed and cost advantages, Godby sees clear advantages to conducting automated inventory management the Centricity Cardio Workflow Solution way. "It's made a world of difference as far as inventory and charge capture and also enabling overall intelligence-based decision-making," Godby says.

Patients benefit because nurses and technologists can focus on care rather than specifically tracking devices. "For patients, the bill is more accurate, and it arrives on time," King notes. "It's not being delayed because we went back four days later and found something that wasn't charged and had to do late charging."

This project has been a benefit for business, the bottom line and cost control. "It's been a huge addition for us," Godby says. "Our revenues for this department have dramatically increased, just

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because we know that we're accurately charging for all of the inventory that's being utilized."

It's a staff satisfier too, King says. "It's less stressful than trying to look up prices of things in a binder and remember if they wrote everything down. Really all they must remember now is to scan a barcode as they open something. It has been very positive." Staff members have found Centricity Cardio Workflow easy to use, learning it quickly and commenting on the improvements. "The newfound efficiency also has allowed us to turn around rooms quicker which has contributed to an increase in patient volume," says King.

As Godby sees it, "you've got to make a change to make sure you're capturing the charges. You need to be sure you have [the items] you need and that you're charging for what you use. We must drive these efficiencies in healthcare today. It comes down to having the right tools and making it happen."



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Reference

¹Calculated based on increase in revenue associated with increase in volume and subtracting the cost of the system.

Imagination at work

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