

Realizing the Benefits of a Cardiovascular Information System

St. John Medical Center
Tulsa, OK



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Dwayne Sumter,
Director of Invasive Cardiology
St. John Medical Center



Profile: St. John Medical Center Tulsa, OK

The Heart Institute at St. John Medical Center has been a leading provider of cardiovascular care for decades. St. John pioneered many cardiovascular treatments in Tulsa, including the first pacemaker implant, the first bypass surgery and the first angioplasty in the area.

The Heart Cath Lab staff of 27 cares for approximately 4,200 patients a year and performs a wide variety of cardiovascular procedures. In recent years, St. John has been named a 100 Top Hospital™ for Cardiovascular Benchmarks for Success based on patient outcomes.

This “hospital within a hospital” includes :

- 5 procedure rooms
- 3 cardiac rooms
- GE’s Innova® 2000
- PV room with Innova 4100
- E P room featuring GE’s Advantx LC/LP+ bi-plane

In 2004, the Heart Cath Lab at St. John Heart Institute performed over 5,000 diagnostic caths and nearly 1,400 interventions.

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Optimizing Technology GE Team Helps St. John Maximize Data Management System

The Heart Institute at St. John Medical Center in Tulsa is no stranger to forward thinking. As pioneers in many cardiovascular procedures in Tulsa, hospital leaders recognized the potential of integration of cardiac data long before it was even on the radar screen at other facilities.

Their leadership understood the promise of integration and wanted a solid system of inter-relational databases to manage information with the hopes of improving outcomes. With the help of GE, St. John’s vision has become a reality.

St. John began in the cath lab. “We knew that by making that work, we could expand to other modalities,” said Dwayne Sumter, Director of Invasive Cardiology. The Cath Lab has all of the desired integrations complete, including using the Centricity® Data Management System (DMS) for Physician Reporting, Charge Capture, Scheduling and Inventory Management.

Getting More from Technology

After the initial system installation was in place, GE’s Performance Solutions team worked with St. John on an optimization study that incorporated many components of GE’s Realize™ offering. This type of study helps facilities transition from existing processes and ensures that they are taking full advantage of their technology.

Because of the strong relationship between GE and St. John, GE was well aware of St. John’s desire to get the most out of the DMS modules within the cath lab to enhance performance. A dedicated cath lab clinical specialist from St. John took the lead internally and worked closely with the Performance Solutions team.

The team first analyzed St. John’s use of the Physician Reporting module and developed a plan to help them transition from existing processes and to implement the DMS Charge Capture and Inventory Management modules – all with a goal of gaining additional productivity.

“The Performance Solutions team came on site and gathered data on our current workflow; assessed our needs; and presented information on how GE programs could meet

those needs. The team also worked on-site to help us prepare for, install and implement the Charge Capture and Inventory Management modules,” said Sumter.

“They made resources available to help improve our workflow; integrate existing workflows with GE programs such as Six Sigma; and troubleshoot any situations that arose. After we went live with Charge Capture and Inventory Management, they re-measured the original data to see what impact was made on our daily practices,” said Sumter. The improvements have been significant in terms of productivity and cost savings.

The data presented in this article was collected and analyzed through a collaborative effort by GE Healthcare’s Performance Solutions team and St. John Medical Center.

“The billing cycle has been reduced by two full days, allowing St. John to bill for procedures faster with the goal of improving the speed of reimbursements from payers.”

Physician Reporting Reduced to 6 Minutes

When St. John made the changeover to use the system’s Physician Reporting module, they understood that they were changing the way their physicians worked. Therefore, St. John made a full commitment to communicating the benefits of the new system to the physicians, staff, and administration.

“The team within the cath lab knew how important education and acceptance of this change was. They knew that if the doctors did not buy into it, it was going to fail,” said Sumter.

To help ensure compliance, St. John also made the decision to eliminate their other physician reporting options at the time of implementation.

“We made sure we filled that gap. The physicians were educated. They knew how to use the system, they knew the shortcuts, and it was customized as much as possible to meet their needs. We had ‘super-users’ that could work with the physicians when they had a question. We almost ‘over-prepared’, but I think it paid off in the end,” explained Sumter.

As GE analyzed the use of the Physician Reporting module, they realized that the physicians could benefit from additional customization tuned to their unique workflow. The result was that all physicians reduced the time needed to create a report. The median reporting time was reduced to 6 minutes.

Physician Reporting	
Time to Maintain :	
Annual Hours Saved	Annual Savings
7200	\$144,000
Procedure Follow Up with Referring MD	
Pre DMS	~ 72 hours
With DMS	Same day

Billing Cycle Decreased by 2 Days

GE also helped St. John transition from their current charge capture process and implemented the DMS Charge Capture Module.

Prior to implementation, St. John had to enter information about procedures and supplies into several different systems, including Mac-Lab IT/CardioLab IT and their inventory and billing system. “Our old process was extremely paper-driven. It required several people to look at the data at several times.” Sumter said.

The DMS Charge Capture allows procedure and supply charge data to be entered on the Mac-Lab® IT/CardioLab® IT system and ultimately submitted to the hospital billing system. St. John was able to eliminate the need to have a separate system for documenting charges. The time needed to review charges was dramatically reduced.

The impact is significant. The daily time to enter and review charges has been brought down to 13 minutes from 210 minutes. This strong improvement was due to the elimination of redundant data entry, elimination of paper billing reports and on-line access to all supporting information. “There was quite a bit of productivity gain from (implementing Charge Capture),” Sumter said.

In fact, the billing cycle has been reduced by two full days, allowing St. John to bill for procedures faster with the goal of improving the speed of reimbursements from payers.

Charge Capture	
Time to Maintain:	
Annual Hours Saved	Annual Savings
521.59	\$ 10,431.75
Edited Charges:	
Pre DMS	\$ 13,258
With DMS	\$ 96,365.25

“We’ve accomplished everything that we set out to accomplish. GE actually exceeded my expectations. We are very happy with the product and feel that we are optimizing the technology to its full ability.”

Time to Manage Inventory Data Drops Dramatically

Prior to implementation, St. John had been pleased with their current inventory management system, except for one major drawback – it was another standalone system. “The data was used for patient billing of procedures and supplies as well as maintaining inventory, but this standalone system was not integrated into the cardiology database,” said Sumter.

GE implemented Centricity DMS Inventory Management system, a comprehensive solution allowing supply data collected in Mac-Lab IT /CardioLab IT to be analyzed in DMS. This again eliminated the need for documentation of supplies into two different systems.

“Now, with the DMS Inventory module, we are able to use the supply data to populate procedural reports and the cardiology database,” explained Sumter.

Before St. John implemented the Inventory Management module, the daily time to enter and manage inventory was 35 minutes. This dropped dramatically to three minutes, primarily due to the elimination of double documentation and the fact that every action related to inventory has been consolidated into one seamless system.

In addition, St. John now has information available real-time on inventory status, orders, receipts and cost, greatly simplifying information flow.

Inventory Management	
Time to Maintain:	
Annual Hours Saved	Annual Savings
522.57	\$ 11,051.43
Elimination of Redundant Data Entry:	
Annual Hours Saved	Annual Savings
867.27	\$ 17,345.45

Quantifying Return on Investment

As a result of the study, St. John has a better understanding of their return on investment. St. John will save several thousand hours annually in terms of managing their charges and inventory, at a net annual savings of over \$20,000. Sumter also believes the charge review process in DMS is contributing to a more accurate patient bill – the first time around. “Now with one data management system, the charge nurse has on-line access to the full case log, as well as the signed physician report. This gives the charge nurse all of the necessary information in one place – already confirmed – for an expedited and more accurate billing charge review.”

Over \$400,000 Financial Benefits Identified

“With help from GE, we’ve been able to identify over \$400,000 of financial benefits through technology optimization and process improvements. The improvements we’ve put in place have created a better environment at St. John for both delivering and receiving patient care,” said Sumter.

St. John is also pleased that GE has helped them become even more productive. “We’ve accomplished everything that we set out to accomplish. GE actually exceeded my expectations. We are very happy with the product and feel that we are optimizing the technology to its full ability.”

“When you buy something of this magnitude you have expectations of how the products will work. These products are so complex, that it’s not easy to buy, install, drop it into a hospital and have everything work. Fortunately, by working with GE’s Performance Solutions’ team they helped us accomplish it rather rapidly with minimal resources on our part.”

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