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## Saint Agnes Medical Center Improves Cardiovascular Workflow with the Philips Xper Flex Cardio with Xper IM

*Cath Lab Digest talks with Katherine McCardell, RN, Heart & Vascular Services Director, and Mike Colgate, RCIS, MPH, Lead Cardiovascular Technologist, Cardiac Cath Lab/EP, Saint Agnes Medical Center, Fresno, California.*

### Can you tell us about the cath lab at Saint Agnes?

**Kathy:** Saint Agnes Medical Center is a 463-licensed-bed medical center with a comprehensive heart and vascular service line. We are a ST-elevation myocardial infarction (STEMI) receiving center utilizing 3 dedicated Philips cardiac cath suites. In addition, we have 2 interventional radiology (IR) suites within the combined department. The cath lab and IR employ separate staff, utilizing teams of registered nurses (RNs), registered cardiovascular invasive specialists (RCISs) and cardiovascular radiologic technologists (CVRTs). The cath lab operates with 9 RNs, 5 RCISs, 4 CVRTs, and 4 supporting staff members. Our procedures include the following: diagnostic and interventional angiography, cardiac rhythm management (CRM), electrophysiology studies (EPS)/ablations, peripheral revascularization, abdominal aortic aneurysm (AAA) repair, and structural heart procedures. Saint Agnes also began performing transcatheter aortic valve replacement (TAVR) in April 2014. We serve 40 cardiologists, including clinical, interventional, and electrophysiologists. We perform 6000 procedures annually; of that total, 1500 are interventions.

### What systems are you using in each of your labs?

**Mike:** Our 3 cardiac suites utilize Philips: 2 Allura FD10s and 1 Allura FD20. All 3 suites feature Philips FlexVision to incorporate multiple information systems (IS) modalities onto the 56-inch flat-panel monitor. Philips StentBoost, along with the latest software and hardware release, allow staff to easily navigate from suites. We also incorporate Volcano's CORE Mobile and St. Jude's ILUMIEN systems for intravascular ultrasound (IVUS), fractional flow reserve (FFR), and optical coherence tomography (OCT) at tableside.

### The Saint Agnes cath lab upgraded to the Philips Xper Flex Cardio with Xper Information Management

### (IM) two years ago. What was your situation at that time?

**Mike:** We were on Witt Series IV Calysto when Witt issued an end-of-life statement. We migrated to Xper IM because of the end of life and the fact that we would no longer have IS support. The hospital was also moving to a new electronic medical record (EMR) system and we wanted to have complete connectivity between both systems, with an ADT (Admit Discharge Transfer) interface and a lab interface, as well as the ability to electronically archive to the new EMR.

### What do you like about the Xper Flex Cardio with Xper IM?

**Mike:** The upgrade meant we went from a flat file system to a SQL (Structured Query Language) database. We have found the SQL database to be very stable, especially from the perspective of our information systems department. With Xper IM, we have greatly increased our ability to data mine, query, and trend and track cases. This has proven valuable for management as well as physicians. Xper IM also gives us the ability to maintain separate repositories for the cath lab and IR. This allows for custom menu building for the specific needs and procedures of each department.

### How did physicians react to the upgrade to Xper Flex Cardio with Xper IM?

**Mike:** Physicians appreciate the clarity and resolution of the hemodynamic tracings. They have also been pleased with the icon-based toolbar for navigation. Overall, the physicians were pleased the upgrade was relatively smooth and with minimal case interruptions.

### What enhancements did you see?

**Mike:** Multiple enhancements. The stability of the operating system and connectivity to the network has been markedly improved. Case interruption resulting from "Net Failure" is no longer an issue. The new system also allows



**Figure 1.** Katherine McCardell, RN, Heart & Vascular Services Director, and Mike Colgate, RCIS, MPH, Lead Cardiovascular Technologist.

for enhanced data mining, querying, and trending. Additionally, with the advanced query feature, we now have the capability to more precisely extract data requested by management and physicians. We have had great success in developing these advanced queries with the assistance of the Philips' Xper IS team.

### You mentioned that the Xper Flex Cardio with Xper IM connected well with other systems in the hospital.

**Mike:** There was a great deal of thought and discussion regarding our workflow and interfacing. We utilize the hospital's ADT system to interface with Xper IM for admission of patients into Xper IM. Xper Connect interfaces with Cerner Powerchart EMR to electronically archive all procedural cases. We have also incorporated a hematology lab interface to electronically populate lab values within the Xper IM system. In addition, Philips built an interface to populate patient demographics from Xper to the St. Jude EP Workmate recording system.

### How did workflow change from the Witt Series IV system to the Xper Flex Cardio with Xper IM?

**Mike:** With the Witt Series IV system, all procedural cases were printed and scanned into the patient's medical record. Now, with the adoption of Xper IM and our new EMR, all procedural cases are electronically archived into the patient's medical record. This has reduced the printing of paper and the process of scanning, saving both time and hospital resources. The hematology lab interface has also changed from manual entry to electronic population of all values at the time of patient admit. It populates the most recent lab values within the past 48 hours. This has minimized data entry errors, and reduced the need to look up lab values and enter them manually.

### Mike, can you share more about your role in the upgrade and the learning curve?

**Mike:** There were two staff champions, myself and a practice coordinator. A week of off-site training and menu-building occurred at Philips. Following this training, we constructed all of the menus to mirror our current workflow in the Witt Series IV system. One-on-one training of staff occurred one week prior to "go live" with great success. As a result, when the Xper Flex Cardio System went live, staff was amazed by the ease of use and navigation.

### What about data analysis? Can you share some of the reports you run?

**Mike:** The capabilities of Xper IM are endless. With the Philips Xper IS team to aid in the development of advanced queries, our management and physicians have access to a tremendous amount of invaluable data. The Philips IS team is exceptionally responsive and supportive in the build-out of advanced queries. This has allowed us timely and effective information for our management and physicians. Requesting physicians have the ability to view equipment usage, and trend case duration and case volumes. Specifically, our matrix-driven queries track wheels in/wheels out for scheduling purposes, late start times, and door-to-balloon times. Xper IM provides us with the necessary tools to enhance the overall operation of the cath lab, assists caregivers in providing better patient care, and promotes physician satisfaction.

### Kathy, what is your interaction with the system in terms of reporting and data analysis?

**Kathy:** Utilizing Xper IM for data analysis is important so the cath lab can track trends, and improve operational and economic efficiency. For example, we track patient visits in addition to procedures to give us a more accurate picture of how the cath lab volume is growing. The lab can see 10-18 patients a day, so it is important to track room turnover and any delays that can impact productivity. As a result, the cath lab has minimized room turnover to less than 10 minutes between procedures. Xper IM allows us

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not only to track delays, but whether the delays were due to scheduling, STEMIs, or other factors.

**Do you make these metrics available to the physicians so they can compare themselves to their peers?**

**Kathy:** Saint Agnes holds monthly cardiology meetings where physicians and hospital administration can discuss performance metrics that are being tracked in the cath lab. These meetings also provide opportunity to evaluate and compare ongoing metrics such as door-to-balloon times, percutaneous coronary intervention mortality, and sedation documentation.

**What are the metrics being tracked this year?**

**Kathy:** We are actually in the process of determining metrics to track. One metric under consideration is looking at the economic impact of radial vs. femoral access for diagnostic left heart cath and coronary interventions.

**Kathy, you became nurse manager in the summer of 2014 and recently, service director. Can you share more about your perspective on the Xper Flex Cardio with Xper IM?**

**Kathy:** The features and the enhanced workflow, along with the interfacing with other hospital systems, have had a tremendous impact on physician satisfaction and help with our patients' experience. The system helps reduce the risk of losing data and interfaces with our EMR. We have seen much benefit from the seamless flow of information from pre-op to cath lab, back to our cardiovascular recovery area or post-op, and then to the floor or units if needed.

**What are the other benefits you have seen in addition to patient and physician satisfaction?**

**Kathy:** We are on track to increase our volume by 10%. That success truly comes from our goal at Saint Agnes cath lab, which is to offer a service-oriented, high-quality experience, not only for the patients, but for the physicians. Our workflow aids us in achieving that goal. We offer the services at Saint Agnes that make it a good experience for the physicians and for their patients, and this ultimately has an impact on growing our volume.

**Can you share more about your TAVR program? Is it taking place in a hybrid lab?**

**Mike:** TAVR has been a great endeavor for Saint Agnes; we have performed 25 cases since April 2014 utilizing the Edwards Sapien XT valve. The cases are performed in the cath lab utilizing the Philips Allura FD20 with staff from both the cath lab and CVOR. The synergy of numerous disciplines during our TAVR procedures has been the driving force for our success.

**Kathy:** The TAVR team provides a comprehensive, multidisciplinary approach to patients that are not candidates



**Figure 2.** The Cardiac Cath Lab team at Saint Agnes Medical Center.

for traditional valve replacement. Because of the success of our TAVR program, a proposal and budget for a hybrid room has been submitted for fiscal year 2016.

**Saint Agnes also upgraded to the Philips AlluraClarity lab. Can you share more about how it has affected your lab?**

**Mike:** The upgrades went exceptionally well. All rooms are identically configured with new hardware and the most current release of software, a great staff and physician satisfier. Each room is outfitted with a 56-inch flat panel monitor using Philips FlexVision for picture-in-picture display. This allows the capability to view different IS modalities, whether CPACS, EMR, FFR, IVUS, or EPS/ablation/3D mapping. This interactive capability allows physicians to view all information without having to leave the cath lab suite. These enhancements, using the Philips Allura system, have tremendously improved our workflow.

**How has your relationship with Philips been in terms of customer support?**

**Mike:** The customer support of Philips has been comprehensive and receptive. With any new system roll-out, minimal technical issues are to be expected. However, after two and a half years since migrating to Xper IM and upgrading our three Allura cardiac suites, our partnership with Philips has been exceptionally rewarding.

**What are your plans for the future?**

**Mike:** For FY2016, we will begin construction on a hybrid suite within the cath lab. The suite will be designed to specialize

**More about the technology discussed in this article:**

- **Xper Flex Cardio** physiomonitoring system combines flexibility suitable for a host of interventional environments with clinical decision support tools that aid efficient diagnosis.
- **Xper Information Management (IM) workspace** offers flexibility to use Philips' transcription, scheduling, inventory, and data analysis software solutions. It opens a door to the data and images you demand, and transforms them into useful information.
- **AlluraClarity with ClarityIQ** technology provides high quality imaging for a comprehensive range of clinical procedures, achieving excellent visibility at ultra low X-ray dose levels for patients of all sizes. AlluraClarity is the latest flat detector system from Philips.

Learn more at [www.philips.com](http://www.philips.com).

in EP, TAVR, and peripheral procedures. Our focus, as we develop the hybrid suite, will be on three core concepts, which also guided us in upgrading of our three current suites. The first core concept is connectivity, incorporating multiple modalities into one seamless procedure log and EMR storage. The second core concept focuses on interfacing, using efficient technology to transmit patient data and information to multiple modalities. Finally, the third core concept involves the evaluation of our workflow, streamlining the navigation of procedures and decreasing procedural times, cost, and data entry errors.

We have spent a great deal of time

evaluating our workflow and how we navigate cases from start to finish. Our goal has always been to reduce time and expedite physician throughput by means of streamlining workflow.

**Any final thoughts?**

**Mike:** Saint Agnes Medical Center and Philips Healthcare maintain a dynamic partnership that allows both organizations to strive for excellence by means of technology and forward thinking. This partnership has allowed Saint Agnes Medical Center to be the premier health care provider in our area by providing state-of-the-art technology to our patients and physicians. ■

# Cath Lab Digest

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A Product, News and Clinical Update for the Cardiac Catheterization Laboratory Specialist

## Cath Lab Spotlight



## Memorial Hermann Heart & Vascular Institute-Southwest

Terrence Devine, RN III, Houston, Texas

### Tell us about your cath lab.

Memorial Hermann Heart & Vascular Institute-Southwest is part of the 12-hospital Memorial Hermann Health System, known for world-class clinical expertise, patient-centered care, leading edge technology, and innovation. With its exceptional medical staff and more than 22,000 employees, the system serves to advance health in Southeast Texas and the Greater Houston community.

Located on the Campus of Memorial Hermann Southwest Hospital, the Memorial Hermann Heart & Vascular Institute-Southwest opened in 2006 as Houston's first freestanding heart hospital. Dedicated, specialized programming distinguishes the Institute from other similar facilities. The Institute's Heart Valve Clinic, for example, offers patients innovative care delivered by a multidisciplinary team of affiliated specialists who work together to diagnose and treat heart murmurs.

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## OCT CO-REGISTRATION IMAGE SERIES

## OCT Assessment of Cutting Balloon Angioplasty for In-Stent Restenosis

Yuliya Vengrenyuk, PhD, Annapoorna Kini, MD, Division of Cardiology, Mount Sinai Hospital, New York, New York



This case is part of a series of optical coherence tomography-focused cases supported by St. Jude Medical.

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## NEW TECHNOLOGY

## Experience with the Destino Twist Steerable Guiding Sheath with Deflectable Tip

Cath Lab Digest talks with Bruno Damascelli, MD<sup>1</sup>, and Vladimira Tichà, MD<sup>1,2</sup>

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## CASE REPORT

## Utilizing a Combination of Retrograde Tibial Artery Access and Transcollateral Crossing to Treat Multiple Chronic Total Occlusions of the Posterior Tibial and Peroneal Arteries

George L. Adams\*, MD, MHS, Vinayak Subramanian, BS<sup>†</sup>, Orlando Marrero RCIS, MBA<sup>‡</sup>

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## CATH LAB SYSTEMS

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