



**PHILIPS**

FlexMove Hybrid OR

# Collaborating to advance cardiac care

Philips FlexMove Hybrid OR unites cardiologists and cardiac surgeons in an innovative environment

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**Who/Where**

Dr. Mark Goodwin, Cardiologist  
Catherine Smith, Director  
of Interventional Suites and  
Cardiovascular Surgery  
Edward Heart Hospital  
Naperville, IL  
USA

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**Challenge**

Establish an environment to perform  
complex hybrid procedures and expand  
cardiac care options.

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**Solution**

Install a Philips FlexMove Hybrid OR  
with AlluraClarity FD20 interventional  
X-ray system.

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Integrated teams at Edward Heart Hospital conduct cutting-edge procedures in a room designed for cross-disciplinary support

“In a hybrid environment, the higher the flexibility of the room, the higher the utility,” states Dr. Mark Goodwin, Cardiologist with Advocate Medical Group at Edward Heart Hospital in Naperville Illinois.

Reflecting on the versatility of the newly installed Philips FlexMove Hybrid OR, Dr. Goodwin notes, “We can, if required, do a laser

lead extraction and an angiogram in one procedure. Or, from a coronary standpoint, if we’re doing a TAVR and the left main becomes occluded we can stent it right away – all in one room. That’s quite exceptional.”

It is the broad cross-disciplinary aspect of this room that makes it truly invaluable.



### **Commitment from a leader**

It should come as no surprise that Edward Heart Hospital has taken the initiative to excel in hybrid cardiac procedures. This Midwest institution has been at the forefront of exemplary heart care for years.

“Edward Heart Hospital is a leader in Cardiovascular Care within the state of Illinois” says Catherine Smith, Director of Interventional Suites and Cardiovascular Surgery. “We are positioned to continue that run.”

The full-service, regional healthcare provider offers access to complex medical specialties including procedures in cardiology (TAVR), cardiac surgery, electrophysiology, and neuroradiology. Today, in addition to a cath lab, an EP lab, and two operating rooms, the hospital has added a FlexMove Hybrid OR from Philips. This integrated environment allows the staff to perform endovascular as well as hybrid and open surgery in a single room.

### **Addressing an evolving need**

The rigid line between percutaneous coronary intervention and conventional open surgery is blurring. Interventions are performed for increasingly complex diseases, while surgical procedures are becoming less invasive. In addition, the availability of new devices expands the number of treatment options that can be offered.

“In the cardiac environment,” says Dr. Goodwin, “over the last five years, more and more procedures have been developed that require both the surgeon and cardiologist to participate at the same time – transcatheter aortic valve replacement (TAVR) being a prime example.”

To provide patients with an opportunity to receive the latest in cardiac care, Edward Heart Hospital made the decision to install a FlexMove Hybrid OR. Based on a strong, ongoing relationship, Philips was selected as the vendor of choice, with support from Stryker and MAQUET. By August 2012, the new room was ready for use. The next step was to encourage a state of cooperation between traditionally territorial professionals.

“TAVR brought us all into a single environment,” recalls Dr. Goodwin. “It forced our teams to integrate, which has been positive for both the OR staff and the cath lab staff. Today you would not be able to tell who’s the surgeon or who’s the cardiologist – who’s the OR staff, or who’s the cath lab staff, because we all work so well together.”



For Dr. Goodwin and his team, having multiple functional utilities available to deliver care in both an open and endovascular situation, helps cultivate a sense of safety and security. “We can never identify the person who may need all of our resources,” he says, “but I’d just as soon have everything at my fingertips ready to go. If we need to do a coronary angiogram we have the capability. If we need to open the chest, we can open it right there – without transferring the patient.”

Remembering a recent case, Dr. Goodwin continues, “A patient with a cold left lower extremity was taken to the hybrid OR and an angiogram revealed a popliteal aneurysm. He had a bypass to get flow into the posterior tibial artery and at the same time we did an endovascular repair of the popliteal aneurysm. That would have been difficult to do as two different procedures – but in this room it was done as one.”



Dr. Mark Goodwin  
Edward Heart Hospital



Catherine Smith  
Edward Heart Hospital



## The technology

At the center of the Philips FlexMove Hybrid OR is the AlluraClarity Xper FD20 interventional X-ray system. It combines a large field of view and high-resolution flat detector with advanced diagnostic and 3D interventional tools. The Edward Heart FlexMove Hybrid OR configuration consists of these specific elements:

- AlluraClarity Xper FD20 interventional X-ray system
- FlexMove ceiling rails for wide C-arm movement
- FlexVision 56” medical display
- MAQUET MAGNUS table system
- 3DRA, XperCT, and HeartNavigator interventional tools
- Stryker lights, booms, and video integration

The FlexMove Hybrid OR design allocates a wider footprint for complex procedures, introduces state-of-the-art imaging technology, and maintains the sterility of an operating room.

“We’re getting excellent high-quality images,” says Dr. Goodwin, “which is important when we’re doing high-end complex procedures, but it is the ability of the room to handle all the staff plus supportive equipment that is equally critical.” At Edward, a typical TAVR team consists of 20 to 22 people including two cardiologists, two cardiovascular surgeons, anesthesiologist, echocardiologist, perfusionist, and a large supporting staff. The FlexMove Hybrid OR is designed to provide enhanced access

*“Having a room where we can do complex high-end procedures is a much larger piece of the pie than I would have originally thought.”*

– Dr. Mark Goodwin, Edward Heart Hospital

to the patient. With FlexMove, the ceiling mounted C-arm can be quickly moved anywhere it is required around the table, or completely out of the way if necessary. This gives the team more room to work around the patient and frees up the head area so the anesthesiologist and/or echocardiologist can work with ease.

Preparing the room between distinctly different procedures is a simple task, says Catherine Smith. “We’ve put all inventories on specialty carts. We have the ability to switch between procedures very easily. We move the carts in, we move the carts out. This allows for the flexibility of having inventory for virtually every type of procedure. In addition when not used the carts can be moved out and the Hybrid OR maintains a clean non-cluttered environment.”

## Managing dose

Dose reduction for both patients and staff is an important consideration for the Edward Heart team during lengthy procedures in the new hybrid OR. The AlluraClarity Xper FD20 interventional X-ray is part of the Philips AlluraClarity family of X-ray systems with ClarityIQ technology, capable of maintaining equivalent image quality at a low dose level.

According to Dr. Goodwin, “Despite more fluoro time during some of our more complex cases, we’re recording very low radiation dose levels for both our EVAR and TAVR cases and yet we still maintain a great image.”

Staff members track their exposure using Philips DoseAware dose measuring system. Personal dose meters provide real-time feedback, showing when and where dose was acquired. Says Dr. Goodwin, “With DoseAware we’re always able to see where we are from a dose safety standpoint, and it’s obvious we’re getting less radiation. Before AlluraClarity the badge of the doctor standing closest to the tube would be red and the staff badges right next to him would be yellow. Now everybody in the room is green.”

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– Catherine Smith, Edward Heart Hospital

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### A true multipurpose room

Dr. Goodwin and Catherine Smith knew their hybrid OR would be useful for TAVR procedures, but had initial concerns as to whether they would use the room much beyond that. “What we’ve learned,” says Dr.

Goodwin, “is that the Philips Hybrid OR has given us more flexibility to manage the OR schedule. It’s made endograft procedures quick, fast, and it’s been a key factor in giving us the ability to grow our volumes.”

Catherine Smith agrees, “The room offers a lot of scheduling flexibility – we use it for TAVR, along with AAA, vascular procedures, and CABG procedures. It has also helped as an additional suite for implant procedures, Implantable Cardiac Defibrillators (ICD’s), and permanent pacemaker insertions.”

“The room has provided an excellent avenue for growth and program development,” she continues. “Within our electrophysiology program, lead extraction is an example where cardiovascular backup is needed and the Hybrid OR allows this to happen very easily. Our FlexMove Hybrid OR is the perfect setting for these new programs.”

By adding a room of such multi-use capacity, Edward Heart has seen tangible growth. Their EVAR volume is up. Their TAVR volume is up. And their total valve work is up by 100%.



### Defining the way forward

For Edward Heart Hospital, the Philips FlexMove Hybrid OR has helped to establish a new era in interdisciplinary cooperation with the ultimate goal of providing high quality services and care to cardiac patients.

“One of the unspoken advantages of a hybrid environment,” suggests Dr. Goodwin, “is that it creates a different energy – with everyone working together. We all learn collectively because we are able to ask questions and share ideas that we wouldn’t normally share. This room allows everyone to broaden their viewpoint.”

“Integration,” says Catherine Smith, “has brought a renewed energy to our staff. Each group fully appreciates what the other does. We have a very strong, united team.”

Performing complex hybrid procedures is a critical part of Edward Heart Hospital’s commitment to remain a healthcare leader. “This is an area you don’t want to be last in,” Dr. Goodwin concludes. “Early adopters are going to carve out a niche that will become a self-fulfilling prophecy, demonstrating their ability to stay busy and grow their volumes.”

