

# Cath Lab Digest

A product, news & clinical update for the cardiac catheterization laboratory specialist



## IMAGING EDUCATION

### From Theory to Practice: The Value of Physician-to-Physician Education in Adopting Contemporary PCI

With Karim M. Al-Azizi, MD, FACC, FSCAI, FESC; Interventional Cardiology and Structural Heart Disease; Medical Director, Cardiac Catheterization Laboratories; Associate Program Director, Cardiology Fellowship, The Heart Hospital – Baylor Scott & White Health; Clinical Assistant Professor, Texas A&M University College of Medicine

The burden of coronary artery disease is steadily increasing in the general population, due to an aging comorbid population and increase in disease complexity at the vessel level. To address this, new technologies, techniques, and multidisciplinary collaboration are allowing percutaneous coronary intervention (PCI) to evolve into a standardized workflow approach known as “contemporary PCI.”

*continued on page 16*

## In This Issue

### How Much of an Impact Does Your Cath Lab Staff Have on Device Selection?

Morton J. Kern, MD, et al  
page 6

### Tricuspid TEER With 4D ICE Guidance

Images/courtesy Erasmus MC, The Netherlands  
page 20

### Traube's Pulse

Temitayo Adegoke, MD;  
Hadi Beaini, MD;  
Faris G. Araj, MD  
Online Exclusive

### Understanding and Treating Heart Failure

Holly James, Accreditation Surveyor & Clinical Consultant at Corazon, Inc.  
Online Exclusive

## HEART FAILURE CARE

### Novel Device for Heart Failure With Reduced Ejection Fraction (HFrEF) Patients: Baroreflex Activation Therapy With Barostim

CLD talks with Christina H. Economides, MD, MM, FSCAI.

Interventional cardiologist Dr. Christina Economides shares her experience treating patients with Barostim™ (Baroreflex Activation Therapy). The majority of her patients who have received Barostim have improved their functional and exercise capacity.



*continued on page 10*

## IMAGING SYSTEMS

### Bringing the Cutting-Edge Technology of the ARTIS icono Imaging System to a Small Community Hospital

CLD talks with Vijay S. Iyer, MD, PhD, FACC, FSCAI.

Olean General Hospital is a small community hospital located in Olean, New York, but its cath lab does not think ‘small’ — according to the New York State Department of Health, Olean handles 1% of all ST-elevation myocardial infarction (STEMI) cases in the state.<sup>1,2</sup> Despite its rural location, Olean General Hospital maintains equivalent outcomes to nearly all of the cath labs in New York State while treating patients of a similar acuity.<sup>1</sup> Staffed with outstanding team members and supported by an excellent EMS crew, the Olean General Hospital cath lab has done approximately 5000 catheterizations and 1500 percutaneous coronary interventions (PCIs) since opening in 2013, and offers implantable cardioverter-defibrillators, peripheral vascular disease intervention, and dialysis grafts. Here, Dr. Vijay Iyer discusses the value provided by the lab’s ARTIS icono imaging system (Siemens Healthineers).

*continued on page 14*

Continued from cover

# Bringing the Cutting-Edge Technology of the ARTIS icono Imaging System to a Small Community Hospital

CLD talks with Vijay S. Iyer, MD, PhD, FACC, FSCAI.

## Part of your practice takes place at Olean General Hospital. Can you tell us about it?

Olean General Hospital is part of the Kaleida Health network and is a 186-bed community hospital located in southwestern New York, about an hour and a half south of Buffalo. The hospital has had a standalone cath lab for close to 10 years, so they don't have surgical backup, but do take care of acute emergencies in the area. When it gets beyond the scope of what they can do, the hospital transfers patients up to Buffalo. They are a reasonably busy ST-elevation myocardial infarction (STEMI) lab and have 24/7 coverage. Olean General Hospital has a catchment area of about 70,000 people in the southern tier of New York, extending into parts of northwest Pennsylvania. It is a critical access hospital because there is nothing else that is nearby in a substantial vicinity in terms of taking care of acute MI patients. From that standpoint, the cath lab at Olean is critical.

## What was the decision-making process that led you to bring an ARTIS icono system to Olean General Hospital?

We had an aging cath lab and needed to replace it with a newer cath lab. Many of our patients,

especially in the southern tier of the state, tend to be pretty sick and also tend to be larger. After an extensive evaluation of different systems, we felt that the ARTIS icono (Siemens Healthineers) would be the best fit for Olean General Hospital. It is state-of-the-art, cutting-edge technology and offers good quality images. Image quality was extremely important to us, and we wanted image quality compatible with what we do here at the Gates Vascular Institute (GVI) at the University of Buffalo, essentially making sure that the quality of what we can do in Olean is always reflective of the quality that we want in the flagship hospital. In fact, what Olean General Hospital actually has is a system that is newer and probably better than anything we have right now at the GVI, in terms of its bells and whistles. The ARTIS icono is a floor-mounted system, which works well for the lab space at the hospital. The imaging is designed to aid in quality coronary work, but Olean General Hospital also does interventional radiology and peripheral vascular work. The ARTIS icono imaging system, with a 16-inch panel, is a very good choice to visualize all of that peripheral anatomy as well. The cath lab is a multipurpose lab that does a wide range of different procedures for the

community in Olean, and we feel that the ARTIS icono is a very good fit.

## What are the challenges for physicians in working in remote locations such as Olean, New York?

Often times as the interventionalist, you are the only one available. You don't have the opportunity to bounce ideas off other people. There is no surgical backup on site. Any emergency that comes up, any situation that arises, you have to deal with by yourself. With the ARTIS icono, we have the ability to transfer images quickly to Buffalo. If I am doing a case in Olean and I want an opinion from one of my colleagues up in Buffalo, or any other physicians are doing a case down there and want an opinion from someone in Buffalo, they can get on the phone, transfer the images, and

**With the ARTIS icono, we have the ability to transfer images quickly. If I am doing a case in Olean and I want an opinion from one of my colleagues up in Buffalo, or any other physicians are doing a case down there and want an opinion from someone in Buffalo, they can get on the phone, transfer the images, and get an opinion pretty much in real time.**

get an opinion pretty much in real time. It is an important feature in this day and age. Connectivity is extremely important and has really helped. That is the biggest challenge — the ability to get a second opinion, some backup ideas and thoughts, when you have a sticky situation. It is nice to have that sense of comfort where you have another pair of eyes looking at the images.

## You mentioned the patients in the area can be quite sick and a little larger. How does the ARTIS icono help with the care of these patients?

The quality of the images is great without increasing the radiation dose dramatically. In some systems, the bigger the patients get, the higher the radiation dose. The ARTIS icono system allows for good quality images without increasing the radiation too much. The system has built-in features that allow you to clean up your images and make the image quality specific to the physician's preference. Each physician can have their own settings in terms of how grainy they want



**Figure 1.** A view of the cath lab at Olean General Hospital with the ARTIS icono imaging system (Siemens Healthineers) with a 16-inch flat-panel detector.



**Figure 2.** The cath lab at Olean General Hospital featuring the ARTIS icono imaging system (Siemens Healthineers).

the picture to be, how pixelated they want it to be, and what kind of contrast that they want to see in a patient. Every physician has their own preferences. Siemens offers a great feature called CLEARstent that allows for visualization of stents within the body. It is a software algorithm that freezes the position of the balloon markers so that we can deploy a stent or balloon a lesion without the interference of cardiac motion. The ARTIS icono system is also compatible with other

**While we don't do structural heart procedures in Olean, a lot of our patients need testing so that they can move to the next step of aortic or mitral valve replacement. All of this testing can now be done in Olean, and that ability allows these patients to stay local and not have to come all the way up to Buffalo for their workup.**

ancillary techniques like intravascular ultrasound (IVUS) or optical coherence tomography (OCT), which can be easily integrated into the system. It helps in terms of being able to provide a full-service cath lab. While we don't do structural heart procedures in Olean, a lot of our patients need testing so that they can move to the next

step of aortic or mitral valve replacement. All of this testing can now be done in Olean, and that ability allows these patients to stay local and not have to come all the way up to Buffalo for their workup. It helps to minimize the total amount of travel that these patients need to do.

**What impact might new technologies such as devices for high-sensitivity troponin testing have on rural institutions?**

The ability to do advanced testing, whether it be a blood test or in some sort of an imaging test, is important in being able to provide care in these rural hospitals. As we start to do more high-sensitivity troponin testing, there are more patients that we recognize are having coronary syndromes, so it does increase the eligibility of patients who may need to have cardiac catheterization. All of these devices for advanced testing, whether done at the bedside point of care or the emergency department, are designed to better risk stratify patients. The better we are at risk stratifying our patients, the better care we can provide to them. I think that is the key component.

**What do you see happening over the next several years in the interventional cardiology field?**

Much of what we are doing in interventional cardiology and in structural heart treatment is opening itself to greater collaboration. We need

the ability to collaborate on images as well as the ability to integrate images. For example, in structural heart intervention, we want computed tomography (CT) images to be able to overlay with fluoroscopy images, or to integrate transeophageal echo images with fluoro images, what we call Image Fusion. The additional software that is built into imaging systems will help us plan and design procedures in real time, especially the more complex procedures.

**Any final thoughts?**

There are certain standards necessary when deciding on an imaging system. Certainly you want a quality image and to keep your radiation dose as low as possible, and all of that is critical. At the same time, the ability to scale up into something more sophisticated as well as the ability to integrate other modalities into the system becomes extremely important, because you are not going to buy a cath lab every year. You are going to buy one maybe every 8 to 10 years, and they are expensive. The flexibility to be able to upgrade your system, whether it be with software or hardware components, and be able to integrate with other modalities that may be emerging is extremely important. It is a crucial aspect to factor in when buying any system. ■

*This article is sponsored by Siemens Healthineers.*

## References

1. Percutaneous Coronary Interventions in New York State 2017-2019. New York State Department of Health. March 2023, revised May 2023. [https://www.health.ny.gov/statistics/diseases/cardiovascular/docs/pci\\_2017-2019.pdf](https://www.health.ny.gov/statistics/diseases/cardiovascular/docs/pci_2017-2019.pdf)
2. Upgrades completed at OGH Cardiac Catheterization Lab. Olean General Hospital - Kaleida Health news. November 14, 2022. <https://www.brnc-ogh.org/news/read/Upgrades-completed-at-OGH-Cardiac-Catheterization-Lab/18754/>

**View the article online by scanning the QR code:**



**Vijay S. Iyer, MD, PhD, FACC, FSCAI**

*Chief, Cardiovascular Medicine, Jacobs School of Medicine and Biomedical Sciences, University at Buffalo, Buffalo, New York; Director Structural Heart Interventions, Kaleida Health, East Amherst, New York*