

Seeking Synergy: Bringing Cardiology into Your Enterprise Imaging Strategy

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There is new synergy afoot when it comes to enterprise imaging. Healthcare systems are increasingly choosing enterprise imaging systems to manage image viewing across the two most image-rich 'ologies: radiology and cardiology. Here are the advantages that two health systems—ProMedica in Ohio and Michigan and Quinte Health Care (QHC) in Ontario, Canada—have discovered by uniting their radiology and cardiology viewing with Sectra Enterprise Imaging. This path is the way forward.



Focus on ProMedica

It was a journey to simplify and standardize image viewing for physicians and their enterprise IT environment that brought Toledo-based ProMedica to extend its long-proven Sectra Enterprise Imaging solution to include echocardiography. Storing images in a single database was a goal for the system along with the need to integrate enterprise imaging with reporting in their Epic EMR and provide cardiologists a remote viewing option.

“We wanted to reduce interfaces, workflows and servers—and be sure there was patient context between cardiology and the EMR,” says Director of Clinical IT Deb Kuck. “So, when Sectra came forward with a cardiology opportunity for us, we decided to go with it for those reasons and give our providers a single viewing platform.”

ProMedica is a large U.S.-based health system headquartered in Toledo, Ohio. Across the system, clinicians see more than 4.7 million patient encounters across 13 hospitals, four ambulatory surgery centers, and more than 400 post-acute facilities. They have nearly 56,000 employees and 2,100+ physicians with privileges system-wide. ProMedica Physicians includes more than 900+ providers serving more than 1.5 million patient visits annually. The health system is a long-time Sectra customer, stretching back to 2002 when they initially implemented Sectra radiology PACS.

At ProMedica, Sectra Enterprise Imaging now serves as a PACS and vendor neutral archive. Enterprise imaging sits at the center of orders, image viewing and reading and archiving radiology, mammography, cardiology and ophthalmology images.

Focusing on the health system's goal of simplification, Kuck recognizes the advantages of choosing one enterprise imaging vendor for all 'ologies. "We have used Sectra for radiology for several years and therefore moving to a single viewing platform to include cardiology was a simple decision for us. It also allows us, further down the road, to implement other technologies like advanced imaging applications. We were looking for one-stop shopping."

Stability was another goal, according to Enterprise Imaging Administrator Ryan Henricks.

Flexibility and transportability for physicians were important too, notes ProMedica's ITS Supervisor, Epic Cupid/Radiant Gina Duval. "We had a very fixed type of integration and format that we could provide to our physicians. Cardiologists are always on the move, going between many locations. We needed more flexibility with how they accessed the integrated workstations."

"It was important for them to have a remote solution," Kuck adds, "almost anywhere they go, they have the need to see a patient image."

Increasing clinical and operational capabilities couldn't add any burden to IT either. In fact, they wanted to simplify on the IT side, with both systems and staffing. Using one solution for enterprise imaging fit that bill. As Henricks says, "We no longer must support the extra level of other servers, systems and service contracts, or maintain that level of business."

Adding echo to the mix

When it came to extending enterprise imaging to echocardiography across this large health system, there were some challenges. So, the ProMedica team crafted a plan to focus first on deployment at one facility then push it to the other sites. ProMedica Monroe Regional Hospital, a 238-bed, acute care community hospital in Monroe, Michigan, offered a clean slate because they had recently been acquired by the health system.

Henricks team needed to get the enterprise imaging solution in place so they could sunset their old PACS. They also needed to bring Monroe live on Epic because they were discontinuing their old EMR.

The Monroe model offered a roadmap for the IT team for the rest of ProMedica's sites which they brought online over the next couple of months.

Throughout the system-wide rollout, it became clear that getting physicians onboard, namely the cardiologists, with the addition of echo viewing and reporting, was a priority early on. That engagement started with demos and training. "Right away they saw the advantages of the integration and application and the capabilities of reading in different locations," Kuck says. "But with so much change, such as in transitioning from the third-party structured reporting into reporting with Epic [via Sectra] there were challenges; nothing unsurmountable, but it took time to transition and wrap their arms around it. When there is a new way of working for any of the physicians or staff, we always need to factor in time to train, adjust and become proficient."

The team found that having a cardiologist as a physician champion for testing and implementation smoothed the process and improved the level of commitment and adoption. "Buy-in needs to be wholehearted," Henricks says. "You should always have a physician champion that is doing the legwork instead of IT trying to push a new application on whatever specific specialty it is."

Kuck agrees, adding that physicians also are key to getting colleagues to attend training and become proficient with new technology. "With this project, we had to train the cardiologists in PACS and reporting. There was a bit of a learning curve for that. IT owned the training and we were more successful when we got more super users at their elbow, whether that be our cardiologists, IT people or folks from Sectra."

As Duval points out, the cardiologists needed training in the advanced functionalities such as echo strain analysis and the 3D analysis embedded in the

application. They needed image viewing to be closely integrated with the Epic EMR. “I think our frustration level with the lack of integration previously contributed to them being a little more open to the transition,” she says.

Sectra Enterprise Imaging offered an advantage too, she continues. “In one sense, it was able to supplement the modality so we didn't necessarily need, for strain in particular, to purchase a separate feature on a machine because we already had it embedded in a viewer.”

Sectra Enterprise Imaging also served as a harmonizer, Henricks says. “We definitely benefited because Sectra allows multiple vendor modalities to send different segments of SR elements. This made a linear set of SR elements coming into Epic as part of our mapping process. We only had to map one set of variables instead of having to map uniquely for each vendor or modality.”

To enhance their one stop shopping, the ProMedica team also created, through Citrix, an advanced imaging desktop. As Kuck explains, “we put all the tools that cardiology would use in one place to help with remote workflow.”

Completely transparent to the cardiologists, the Citrix provisioned desktop always has 20 workstations spun up at any given time. “Once somebody logs out of the workstation, it basically destroys that workstation and rebuilds it back to the base image,” Henricks explains. “It doesn't matter if the cardiologist is out rounding at some other facility, at home, in their office or within one of our facilities at a non-dedicated reading workstation. They can always pull up the same workstation platform through this provision desktop. Physicians really appreciate that.”

Achieving goals

Having worked through the integration across all the ProMedica facilities, these days enterprise imaging is very stable. “We've refined the integration to make it

tighter and quicker,” Kuck says. “And the physicians no longer have to do anything manually. It is all linked as it moves from the EMR to enterprise imaging to reporting. We're also continuing to enhance and add some measurement mapping.”

From an IT perspective, the project was accomplished with no new staff, and a lot of help from Sectra. “We relied on them a lot,” Kuck says. “They were very helpful in making this work, troubleshooting, making changes and keeping at it until we had what we needed.”

Overall, enterprise imaging has been a success in helping the ProMedica team achieve their goal of a simplified, standardized viewing and reporting solution and enterprise IT strategy. “Some projects focus on the structured report,” Duval says. “Our goal was the bigger picture of the EMR which is all encompassing. We needed a solution that brought together the viewing as well as Epic integration. For us, the EMR houses our inpatient and our ambulatory tool sets for cardiology, radiology, and surgical. It aligned everyone on the same system. We gained integration across applications, across providers, and ultimately that simplifies the various systems clinicians need to work in to care for a patient.”

Across the ProMedica health system, that created a complete, image-enabled patient record with broader access to patient information thanks to a single viewing platform. And that platform is available wherever caregivers need access.

“The freedom [for physicians] to be in their offices or someplace else and be able to view images and give expert opinions on emergent care or more stable patients day to day is very important and appreciated,” Duval says. “Before this project, we heard a lot about lack of access from the physicians. And now that it's done, we don't hear that so we know things are working well.”

Focus on Quinte

About 400 miles north of ProMedica's Ohio headquarters and across the Canadian border, the focus at Quinte Health Care (QHC) is on growth. Growth is a good thing in healthcare, but always a challenge. That's why QHC, a Canadian four-hospital community system on Lake Ontario's Bay of Quinte decided to extend its long-proven Sectra Enterprise Imaging to include echocardiography and meet the high expectations of physicians and administrators, so says Charge Tech for Cardiology Meredith Crooks, RDS, who supervises cardiology and outpatient and noninvasive cardiovascular testing and is the technical director of the echocardiography lab at QHC Belleville General Hospital.

Quinte Health Care provides a wide range of high-quality health care services to 160,000 people living in the diverse region of Prince Edward and Hastings Counties and the southeast portion of Northumberland County. Care is provided through four hospitals, QHC Belleville General Hospital, QHC North Hastings Hospital, QHC Prince Edward County Memorial Hospital and QHC Trenton Memorial Hospital and includes four emergency departments and operating rooms at three sites. Toronto and Kingston serve as the referral sites for more advanced interventional procedures and cardiac surgery.

Across QHC, demand for all medical services is up and still rising. QHC tended to 315,000 patients in 2017. That represented a jump of 4,000 patient visits over the previous year and of 13,000 over 2015.

The move to unite cardiology with radiology reading was well calculated. Quinte first deployed Sectra PACS in 2007 when they needed to replace an ill-equipped PACS they had installed just two years prior. In 2016, as their former echo solution was aging out, they opted to integrate echo with the rest of their enterprise imaging strategy that stretched across radiology. "Our physicians wanted to be able to view echos dynamically along with seeing measurements as well as a patient's other radiology tests," Crooks says.

Sectra Enterprise Imaging offers efficient reading of cardiovascular procedures from a single workstation. Automated clinical tools and advanced analysis tools are integrated into the workflow, such as automated quantifications of volume, strain, and ejection fraction. Measurements performed during the review can be directly imported to worksheets and reports, avoiding the need for manual data entry. Measurements within echo, vascular and interventional procedures also can be performed offline. Overall, the solution helps to increase review efficiency, improve cross-disciplinary collaboration, and reduce IT maintenance and operating costs.

Single solution success

The solution is a success across Quinte Health Care from a variety of perspectives, the most important being enhancements to patient care. Huge benefits in turnaround time for reading echos is one Crooks notes. "Especially in urgent cases," she says. "because we have been able to put a reading station in the physician's office that is offsite from the hospital. Turnaround time for studies with crucial results has improved tenfold. Even just this morning, I had a patient who was possibly in tamponade. I called the doctor. He looked at the images and said send her to emergency. So for that patient, it was extremely beneficial. And for very sick patients, that's been important for us."

Image viewing works inside the hospital as well as across the health system, doctors' offices and clinics that stretch across a large geography. Physicians also have taken well to using speech recognition software for reporting. "It speeds up things because we don't have to send it to transcription, have it proofread and then electronically sign it again," Crooks notes. "That really shortened the process."

In addition to the time savings and greater efficiencies, physicians appreciate being able to do measurements offline. For example, if a patient has had multiple echos over the last few years, the cardiologist can go back and apply different measurements to the images they've already taken.

“Being connected to Kingston General Hospital, the main hospital we send patients to for cardiac issues such as catheterizations, pacemakers, stents or surgery, allows physicians to pull up all images through their PACS,” she says. “We don’t have to burn CDs to send with patients.”

Tight integration between enterprise imaging and their Meditech EMR has opened up key access to patient data too. Reports are distributed to ordering physicians via the EMR, amounting to a single EMR for medical imaging, which clinicians appreciate. “As soon as the report is electronically signed, it’s available to anybody who has access,” she says. “An image of the report also pops up when you open it in the radiology PACS as well.”

Open access is especially helpful for pediatric patients, since the community hospitals can handle baseline imaging and testing and send along images to specialists without the patient needing to travel or have repeat testing.

Choosing a single vendor

Looking back, Quinte’s goal for consolidating enterprise imaging was improving access while keeping it simple for clinicians and IT. “Having one vendor for both achieves both,” Crooks confirms. “We also wanted to be able to take images from equipment from different vendors and display it via a vendor agnostic solution, without a hassle. We have done that with Sectra’s help.”

Sectra navigated the way in dealing with the size of dynamic echo exams which are larger than many static radiology images. They troubleshooted issues with bandwidth and transmission times, delivering images in a timely manner to clinicians. On the back end, they managed image storage and helped to map key measurements to the final echo report.

Those are some of reasons the Quinte team chose to stay with a single vendor they already shared a good relationship with. “It’s a proven solution for us. Our radiologists have been using it for years,” she says.

“We’re very familiar with the software, like how it works, so we were quite confident going into it with that proven track record.”

They wanted a one stop shop for image reading. “Whatever images a patient has, clinicians can see them: CT, X-ray, ultrasound, echo. We can validate findings with other exams and monitor which tests patients have already had. Because of this, we don’t have to re-scan them like we had to do in the past. We just bring the study up to view or reference it as a prior. From a physician’s point of view, it’s got to be fantastic. You only have to log on once to see all the diagnostics. It really works well.”