

Hartford Healthcare's ImageConnect Project: How Strategy, Growth and a VNA Made It Happen

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Hartford Healthcare is Connecticut's most comprehensive healthcare network. Over the last several years, this community and academic health system has grown significantly through its strategic affiliations with hospitals and a variety of providers. To support that growth, the health system brought on a Sectra Vendor Neutral Archive (VNA) to manage inpatient and ambulatory medical images across the enterprise. Image access and archiving became a strategic priority—initiated and dubbed the ImageConnect Project by Interventional Radiologist Barry Stein, MD, to guarantee physician access anywhere and anytime via their Epic EMR, says Richard Shirey, senior vice president and CIO and 40-year healthcare veteran whose task it was to execute on the project. Today IT is driving full enterprise access to patient images and information.



Richard Shirey

This integrated health system includes Hartford Hospital, a tertiary-care teaching hospital that is affiliated with the University of Connecticut Medical School; an acute-care community teaching hospital, an acute-care hospital and trauma center, two community hospitals, the state's most extensive behavioral health network, a multispecialty physician group, a regional home care system, an array of senior care services, a large physical therapy and rehabilitation network and an accountable care organization. The Hartford HealthCare Cancer Institute provides coordinated care across five cancer centers, and is a charter member of the Memorial Sloan Kettering Cancer Alliance.

Going back a few years ago, two hospitals, Hartford Hospital and MidState Medical Center, shared one PACS while the other three—Backus Hospital, The Hospital of Central Connecticut and Windham Hospital—had separate PACS and thus no route or means to share images and reports. The health system knew it's long-term strategy needed to be consolidating on one PACS platform and one VNA to integrate images with the Epic EMR they were deploying enterprise wide. It was the shared vision of radiology and IT, the initial project stakeholders, that they hope will someday extend to all -ologies across the system.

“Imaging is a core piece of decision-making when physicians are trying to diagnose and deliver care,” Shirey notes. “A lot of people focus on lab results, but imaging contributes to the key information a physician needs. We needed to align our IT systems and identify a patient across an enterprise. We had to create that for our caregivers. We needed to move from problematic solutions to one path since facilities only had access to images taken at any facility.”

Managing images across the enterprise

challenges were similar to other healthcare systems, with patients moving among facilities inside and outside the network, transferring patients but lacking a means to exchange images efficiently along with them and too often having to retake images when CDs didn't work or there was no way to access a prior image. Often patients didn't recall they'd had images taken and a retake was necessary, adding time, money and radiation dose. “It is much more of a challenge to get the images if you're cobbling systems together rather than managing them well,” Shirey notes.

Hartford Healthcare needed a VNA that allowed it to consolidate image handling through a single centralized, standards-based multimedia archive. They needed the ability, today and in the future, to capture medical images, videos and audio clips from virtually any source, including all types of DICOM images, ECG, HD film, non-DICOM images and a growth plan to manage whole slide digital pathology images someday. Images needed to be integrated with the EMR to follow the clinical pathway of the patient, enabling clinicians to find and use all information—from anywhere, at any time, and on any device using a single viewer.

They also needed a good search functionality and a growth plan. And it needed to complement the PACS and serve as a true enterprise archive backend for versatile storage and standard interfaces to communicate with other systems.

They needed to connect all of the imaging systems from the five hospitals and a variety of smaller care

providers. They also needed to be sure everything in the VNA was available to any physician which includes ambulatory physicians and amounts to about 500 who have Epic access.

Connecting the enterprise

The ImageConnect Project rolled out over three years, kicking off with the health system signing on to deploy an Epic EMR. Along with the EMR, they wanted an image viewer fully integrated with the system—powered by a VNA.

“When a physician looks at patient information within the EMR, he or she needs links back to the images associated with a particular study, order or result,” Shirey says. “We wanted the physician to be able to click on that link and basically retrieve images while he or she was in the EMR and be able to see everything that he or she needed to see, be able to navigate and understand—and use the same tools across the enterprise. That was the driving principal from an EMR integration perspective.”

Fast forward three years and all five hospitals are live on the Epic EMR, as well as Sectra PACS and Sectra VNA. The VNA went live in the Spring of 2016 at Windham and MidState, with Hartford Hospital following that summer. In the spring of 2017, they brought The Hospital of Central Connecticut into the fold, while Backus Hospital went live in October.

“Phenomenal” is the one word Shirey uses to describe the impact. “The improvement in patient care is really amazing and it is having a direct impact on quality of care,” he says of the feedback from Stein and other physicians.

The impact has been felt, for example, in immediate access to patient images during decision-making on patient transfers, for surgery, cardiology cases or cancer care. The benefits are two-fold: efficient care facilitation and better patient care.

“We now can deliver images to a specialist who is remote and that person can make a determination as to

whether the patient actually needs to be transferred,” he says. In the past, the patient would be loaded up and transferred assuming and believing that needed to happen. But in some cases, it didn’t need to occur. “Perhaps the situation was not as severe as the physician and sending facility might believe. That resulted in a loss of revenue and time, in many cases. We now have a way to promote better care and eliminate the waste.”

Also, when a patient truly needs to be transferred for specialty surgery, the imaging exams now beat them to the hospital. “One of the nice things about a VNA and being able to deliver an image anywhere is to open up access to specialists,” Shirey says. Physicians receiving the patient can evaluate studies ahead of time and understand what they’re dealing with by the time the patient arrives and is transferred into surgery. “Essentially the physician can be ready to go, which will speed care and give the patient a better, more thorough treatment,” Shirey says.

Large health systems across the country are struggling with this issue today because they’ve grown by virtue of acquisition. They have different EMRs and different imaging solutions across many departments. The ability to integrate images and have them in one repository through a VNA “is a dream for a lot of people but its functionality is really incredible,” he says. “It is worth it. The magic of patient identification is being able to identify the patient across the enterprise. It helps to align information, images and caregivers around patients.”

The way forward

The ImageConnect Project has taught the team at Hartford Healthcare a lot of lessons and strengthened their beliefs in standards-based systems, teamwork among vendor partners and the need for all images in one archive.

The integration of the PACS, VNA and EMR has gone “very well,” Shirey says. “We relied on Sectra and Epic to work together and it has worked very well. They have been like-minded from a quality perspective. Epic doesn’t focus on imaging tools but on the EMR

and other aspects of patient documentation, while Sectra is one of the highest quality vendors in the imaging space and has worked well with Epic.”

In addition to enhancements in patient care, Hartford Healthcare is seeing improvements to operations and costs thanks to the VNA. “From a cost management perspective, we only have one vendor to deal with,” he says. “A lack of redundancy of tools and storage means more efficient operations. From a training perspective, my staff only needs to learn one system, one solution, as opposed to trying to learn three or four. The same is true for providers. Those are some of the hidden costs of dealing with multiple vendors.”

Across the health system, physicians have access to radiology and mammography images but Shirey sees that growing in the future to include all of the ‘ologies and full motion video. They are evaluating pathology, with the team excited about the possibilities of better connectivity as part of their participation in the Memorial Sloan Kettering Cancer Alliance. The health system also is working to provide 1,000 affiliated providers with links to images, reports and patient data in their offices.

Hartford Healthcare also looks to continue growing via acquisitions. A CON approval is in the works to acquire another hospital in the Northwest part of the state.

The image-enabled EMR opens up opportunities for alliances and information sharing with other health networks, Shirey points out. Part of that is clinical trials. “Information on patients participating in clinical trials is available to be shared with whoever’s treating the patient, whether at Kettering or here or somewhere across the country. There are other entities where networks might bring like-minded individuals to share information, and to share patient information to improve patient care throughout Connecticut and the Northwest region and outside our network. We’re willing to deliver patient information to any provider in Connecticut who’s interested or needs to see it—or elsewhere. This is how care improves, by having the systems to access and provide the best information about a patient.”