

By Paul Mendel

ABOVE THE CLOUDS

Whether you're below, in, or ahead of the cloud computing trend, a good PACS vendor provides the options you want and the flexibility you need.

Rick Adams immerses himself in high technology every day, and when it came time to select a new PACS, he chose an onsite system. Adams is PACS administrator at St. John Medical Center, of Tulsa, Okla., which conducts 330,000 studies per year.

After an exhaustive vendor search, Adams selected a Carestream PACS system, now running on a server with a hefty capacity of about 42 terabytes. Adams needed the space because he wanted to access 7 years of imaging exams—without a lengthy data migration—as well as a decade of reports.

Advanced user functionality and faster delivery of imaging studies have since improved service for offsite radiologists and referring physicians. “The new Carestream PACS synchronizes patient metadata across multiple PACS to provide automatic access

rized users can quickly view current and prior reports or imaging studies. It's no small achievement, considering that the St. John system spans four hospitals, including the 721-bed flagship Medical Center, three smaller hospitals, 14 imaging centers, and three urgent care centers.

With all the images onsite, retrieving old studies from the archive is relatively problem free. For Adams, it provides a peace of mind that he believes extends to physicians and referring doctors.

Keeping Referring Physicians Satisfied

Adams is also excited about Carestream's zero footprint Vue Motion Viewer that avoids the need for Adams to load software on user workstations, PCs and other devices—which administrators appreciate.

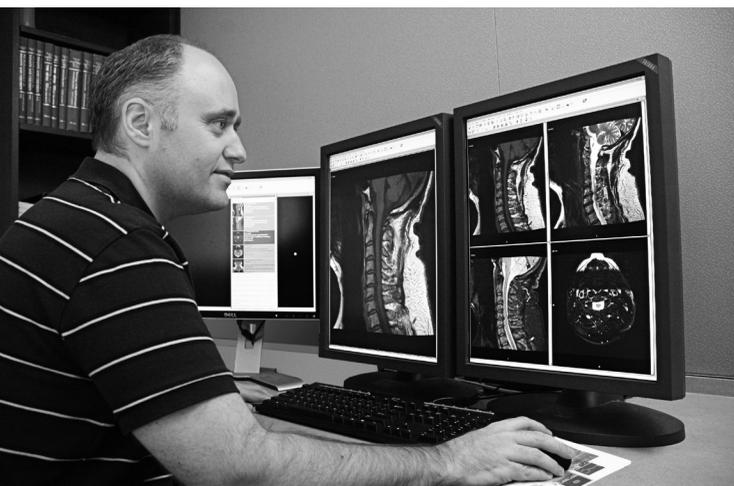
Ultimately Adams wants to extend the reach of the viewer to mobile devices. The Vue Motion Viewer is not yet FDA cleared for use on mobile devices in the U.S., but Adams predicts referring physicians will love it once the technology is available.

“Mobile devices allow referring physicians to see the imaging exam or key images and view the report. I think mobile access will cut down on how much referring doctors call radiologists. Right now, we have orthopedic groups who are fired up to get this because they all carry around iPads, and if they are out at dinner and somebody calls for a quick referral, the image quality is not diagnostic but it's good enough to handle that application.”

Particularly in the case of orthopedic trauma, which tends to generate dramatic images, orthopedists can use Vue Motion Viewer to quickly decide if surgery or stabilization is called for. In the past, it usually meant a trip to the hospital. “Apple is doing a really good job marketing the iPad and it's being widely used by referring physicians. The more referring physicians you can keep happy, the better off you are.”

The PACS also integrates smoothly with Adams' existing HIS and 2-year-old RIS via a Mitra broker that allows authorized users to easily review the exam order, radiology reports, and imaging studies. This streamlined workflow has replaced previous manual processes for retrieving patient records. Faster access to records is especially important in the trauma center where past radiology reports and imaging exams can be pulled immediately using the patient name.

Radiologists and clinicians throughout the health care system appreciate the platform's advanced streaming technology that quickly delivers large imaging exams, even over 10 megabit connections. This allows productive access from remote locations.



Radiologist John Fitter, MD, views an MRI of a cervical spine. St. John's Carestream PACS enables radiologists to view current and prior exams for any patient from any onsite or offsite workstation.

to prior exams,” said Adams. “This allowed us to avoid a costly, time-consuming data migration. It took just a week to input metadata for 7 years of archived studies into the central PACS database. If a physician looks at a study, and there is a prior exam on the older archive, the system will transfer the image data for review. And these studies are available within 3 seconds.”

After migrating 10 years of reports to the new PACS, autho-

In practical terms, the intelligent software streams full resolution images related to the region of interest first, so radiologists can begin reading immediately while the rest of the study continues to load. Compression is applied to each slice to achieve the twin goals of high speed and image quality.

The platform's PowerViewer builds a single virtual study with real-time volume matching of all relevant studies to automatically register and synchronize in one click. Synchronizing views of the region of interest from multiple data sets makes it easier for radiologists to measure and compare tumors, nodules, and other anatomical structures.

Fully featured mammography tools are also available, with multi-modality breast imaging workstations from Carestream Health installed to equip radiologists to read general radiology and all breast imaging exams on the same workstation. Integration with Confirma CADstream enables the viewing of CAD markers for breast MRI studies at a desktop.

In the past, radiologists used two different workstations for breast imaging modalities, while general radiology exams were read at different workstations in another location. "Being able to deliver exams from all modalities to the same desktop enables faster throughput during peak periods," said Adams. "Radiologists throughout the healthcare system pitch in to read cases."

The Final Decision

Adams acknowledges that "a lot of salesmen" visited the conference rooms at St. John during the PACS decision process. When evaluations began, several companies set up software to get an idea of how it would work in his high-volume environment.

Of all the vendors, Adams says Carestream was the only one who actually came in and demonstrated all the functionality they promoted. "The others said, 'We will be able to do this when you buy it,' but they could not do it right then," he recalled. "That was a big deal for us."

Factor in the ability to take over an existing archive, and a difficult decision became easy.

Ultimately, Carestream representatives chose to emphasize the ruthlessly practical aspects that directly affected day-to-day operations. Too often, says Adams, other companies went after the "wow" factor at the expense of true efficiency. "The things you really need to look at are how the system integrates



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–Maureen Gaffney, RN, RPAC, MHS, Chief Medical Information Officer and Senior VP of Patient Care, Winthrop-University Hospital.

with your operation," said Adams. "As one example, we use PowerScribe, and Carestream integrates really well with that. Ask yourself: Can you drop the new PACS into your existing environment and leverage all the data that you already have? I was able to put it in place, use all my legacy data and legacy servers, and hit the ground running. Carestream saved me from a massive data transfer."

In the Cloud

Adams may have chosen to keep data close to home, but others prefer to store images remotely—using cloud technology. When Maureen Gaffney pondered her options for a new PACS, she ultimately went with a remote cloud-based service. "As an organization, we are growing technologically. We don't have a lot of space in our data center to accommodate a lot of storage, so we were looking at the newer alternatives for information systems like RIS and PACS that also involve storage," said Gaffney, RN, RPAC, MHS, chief medical information officer and senior vice president of patient care at Winthrop-University Hospital, Mineola, N.Y.

Winthrop purchased a cloud-based solution for PACS and vendor-neutral storage along with an on-site RIS that is offered on a pay-per-use basis.

Gaffney opted for the cloud service because it gives her organization an open-ended ability to store images remotely with built-in disaster recovery. "As we become more dependent on technology, we realize that having the ability to retrieve information when we need it, even in times of crisis, is going to be important to our operations and patient safety," said Gaffney, whose department oversees more than 500 exams per day. "The cloud-based PACS provides reliability, so workflow is not affected if there is a system problem."

Prior to Carestream, dissatisfaction mounted due to concerns about Winthrop's existing system from another nationally known vendor. It's not that the vendor was incompetent, but the PACS and RIS (from still another vendor) were not working well together.

Best of breed thinking has its merits, but the added complexity ultimately did not work at Winthrop. "We had less than stellar results with the existing RIS/PACS combination," said Gaffney. "We wanted a new vendor with innovative ideas and a more open-ended technology, and we went with Carestream. We wanted to build a relationship with this company and part-



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ner with them. They were eager to hear our ideas and work with us to help build a better product."

Growth, Patients, and Peace of Mind

Overseeing a growing radiology department is a stressful endeavor, and Gaffney credits Carestream's cloud PACS/archiving technology with increasing her peace of mind. "We don't have to worry that we have reached a certain number of images, or that we now have to purchase more hardware to accommodate it," she said. "We can push forward and increase our volumes, because our goal is to constantly grow the business. Carestream enables us to expand our business and grow our organization infinitely. We are not restricted to the actual hardware configuration. It grows as we grow."

Gaffney also believes this solution can translate to better care in the long run. "The ability to quickly and easily retrieve prior and current images means we can achieve faster reporting and better care," she said. "This new process improves quality, and the Carestream solution fits right into our patient-focused mission."

Paul Mendel is a contributing writer for *Imaging Economics*.