Case Study

Radiology Associates of Richmond, Inc. (RAR) Harnesses PowerServer PACS and Gateway Router To Streamline Workflow and Achieve Cost Reductions

One of the oldest private practice radiology groups in the U.S., RAR in Richmond, Va., has grown to include 45 practitioners covering six hospitals, one outpatient vascular center and four outpatient imaging centers; the latter are partially hospital-owned. Its scope of imaging services also includes 20 to 25 area practice groups whose specialties range from family medicine, to urology, to everything in between – even dentistry, for which it provides reads for cone beam CT imaging.

RAR is committed to fulfilling a critical mission established by its founding pioneers: to provide the highest caliber of service through technological innovation. The radiologists use the hospitals’ PACS at each of the six hospitals and four outpatient centers to service those institutions. It has always maintained a separate PACS to handle studies for its roster of family medicine and specialty practice clients and the outpatient vascular center. In 2009, a decision was made to address a multitude of challenges by replacing the latter system with a state-of-the-art model.

“Reading about 27,000 studies per year from many locations and practices plus 13,000 studies still on file moving to CR/DR this year was problematic on many levels and negatively impacted our workflow,” says Joseph K. Wyatt, IT&S director. “These groups were utilizing a variety of computed radiography (CR) and digital radiography (DR) solutions and entering patient data in multiple ways, leading to confusion and difficulties in record-keeping. Additionally, the system did not allow us to simplify matters by using DICOM information in order creation. We could not effectively transmit current and prior studies to reading physicians’ workstations, and there was no central storage location for reports or studies.”

RAR set several criteria for the new PACS. Topping the list, Wyatt noted, was the functionality to glean order and patient information from the DICOM header of each study. Other imperatives included the flexibility to integrate the existing PACS and allow radiologists to easily access a central data repository to read studies from disparate locations, as well as to accommodate business growth.

After evaluating several systems, Wyatt and his colleagues unanimously agreed to deploy RamSoft’s PowerServer PACS and Gateway Router. “It was clear to us that the features of PowerServer PACS would enable us to address all of our challenges,” Wyatt notes. “But more importantly, it was the only system that fulfilled our critical DICOM header requirement. This was the deciding factor.”

Streamlined Workflow

PowerServer PACS has indeed played a pivotal role in streamlining RAR’s workflow, rendering it paperless and eliminating the headaches that spurred the implementation of the technology. The system’s architecture is such that it serves as a centralized, digital storage repository for data and images. Specific study-routing rules may be effortlessly set, ensuring that the correct current and prior versions are received by the appropriate reading physician in their entirety and when they are needed.

Moreover, because PowerServer PACS is Web-based, radiologists can harness an Internet connection to reach the server and read from any one of 14 PACS workstations dispersed among the group’s imaging centers and hospitals, as well as anywhere on any PC with an Internet connection. A customizable, universal worklist component simplifies the task of browsing through patient studies, meaning that routine tasks may be efficiently completed from a single screen. The Gateway DICOM Router, with its powerful PACS engine, facilitates the storage, retrieval and archiving

Client SnapShot

Radiology Associates of Richmond
Richmond, Virginia

Challenges: Workflow inefficiencies, lack of centralized repository for data and images

Results: Significant reduction in report turnaround times, improved balancing of workflow, decreased staff and ancillary expenditures, enhanced profitability

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of hundreds of thousands of studies per year, enables teleradiology reads to be performed from a single system and supports an inter-facility linkage that provides rapid primary diagnostic evaluations round-the-clock and paves the way for instantaneous consultations among group members.

Accessing the system is simple and requires logging into a secure Internet site to launch the program. Secure Socket Layer (SSL) encryption guarantees protection of all information exchange between workstations and the server.

Further improving the workflow as well as record-keeping and overall accuracies, patient data need only be entered into the system once rather than multiple times, as in the past. DICOM information used to generate orders is transmitted to the PowerScribe voice recognition component, permitting radiologists to navigate PowerServer PACS with voice commands and, in turn, leverage the system in less time using fewer keystrokes. Practitioners can also open studies in the system’s PowerReader diagnostic workstation to access forms and templates that may be filled in using the spoken word. Patient reports are then distributed via autofax; the system configuration also allows distribution to occur via email or through its Physician Portal.

Wyatt estimates that the combination of DICOM header transmission to PowerScribe and hassle-free access to the central data and image repository, coupled with the reduced number of steps necessary to complete reports, has helped to decrease average report turnaround time from 48 hours to three to six hours. So, too, has the flexibility to read studies from more than a single location.

“With this system in place, it does not matter that our radiologists are spread out geographically, and we can easily balance workloads among our facilities,” Wyatt asserts. “There is no waiting for duplicate films if a consultation is needed, and if one radiologist is tied up or on vacation and we need someone who works at another location to fill in, arranging for that person to access the images is as simple as picking up the phone and asking him or her to log on to the system.”

Wyatt adds that these workflow improvements and the features of the system have yielded RAR a return on its PowerServer PACS investment “several times over” and sparked considerable cost savings. The latter stem in part from a 50 percent reduction in transcription staff and a 25 percent reduction in courier services utilized. Moreover, “the reduced overhead has created an increase in profit,” he observes.

**Ancillary Benefits**

RAR also continues to benefit from other PowerServer PACS features. For instance, the system permits it to offer an image storage option to its family and specialty practice clients, such as providing mammography reads and storage for two OB groups, while simultaneously bolstering the level of service provided to these entities and the bottom line.

Meanwhile, enhanced tools facilitate even the most complicated diagnostic processes. Wyatt cites as an example a tool that enables radiologists to view three-dimensional image renderings—a particular plus in the case of cone beam CT studies.

Moreover, radiologists enjoy the advantage of performing diagnostic processes in the most comfortable manner. Mouse button defaults are fully customizable, enabling practitioners to set the mouse to their preferred behaviors and to mimic other image viewers they may also routinely utilize in the course of their work. Dynamic zoom can be achieved by moving the scroll wheel or clicking on the scroll wheel, then moving the mouse—whichever option a given user prefers.

**Future Benefits**

Wyatt believes RAR will see additional gains from the implementation of PowerServer PACS down the road. “As more of the practices we service migrate to CR or DR, we will see further reduction in courier services and will profit from increases in business due to the ability to receive studies for any” client “via VPN, SSL or TLS,” he concludes. “We looked at many vendors and products in our quest to resolve our PACS issues, but RamSoft was the only one to get the job done with a first-rate product and excellent support, along with the willingness to help us maximize our use of the system in the long- and short term. We could not ask for more than that.”