OrthoCarolina seeks a flexible PACS solution

Philips iSite PACS in an orthopedic setting

Who/where
OrthoCarolina
Charlotte, North Carolina

Challenge
More effectively manage its complex system of locations as it began to convert from analog to digital radiography using an affordable PACS solution that grows cost effectively as the practice continues to expand

Solution
Philips iSite PACS including iSite Enterprise, iSite Radiology, and iVault, a solution that has led to an eight-year iSite PACS agreement with Philips

OrthoCarolina, a physician's group with broad geographic reach, employs iSite PACS in the move from analog to digital radiography.

With the merger of two of North Carolina's largest orthopedic physician groups came the challenge of integrating and managing one of the most comprehensive orthopedic practices in the nation. Comprised of 16 regional locations, OrthoCarolina counted over 488,000 patient visits in 2008, resulting in 188,000 X-ray exams, 14,000 MRIs, and 47,000 surgeries. With 21 X-ray suites, three MRI units and two fluoroscopy suites, the sheer volume of film-based studies made access to and retrieval of images an unwieldy proposition. Change was inevitable.

One office affected by the merger found moving into a tighter space forced it to reduce from four X-ray suites to two. "When reality set in," recounts Steve Hendrick, chief information officer, "we knew two analog suites would never be able to handle the volume. So the decision was made to go digital in this location." Upon making that commitment, Hendrick knew the next step was selecting a PACS.

How big is big?
The challenge facing Hendrick and the OrthoCarolina physicians was how to find a PACS solution that fit their complex situation. While not everyone was initially convinced a move to digital radiology across the entire group made sense, they all agreed the path to conversion had begun.

"The mindset at the time was that while we couldn't *afford* a big PACS, we knew we were most likely going to need a big one," said Hendrick.

One choice was clear
A variety of PACS options presented themselves. One solution, however, stood out. One of the large healthcare systems where OrthoCarolina performs its surgeries has successfully been using Philips iSite PACS for several years.

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Given the success and experience using iSite PACS within that healthcare system, OrthoCarolina determined the same Philips solution would work well for their own widely distributed organizational structure:

• iSite Enterprise delivers diagnostic-quality images to all locations, making studies available to physicians virtually anywhere quickly

• iSite Radiology offers an open-platform and scalable radiology reading software for state-of-the-art clinical analysis and workflow improvement

• iVault provides secure, offsite archiving and disaster recovery protection

"One of the key advantages Philips iSite PACS had was the fee-per-study financial model, where we pay based on usage," said Hendrick. "This was a safer, more flexible way for us to get into the digital game without having to buy a small PACS solution that we would quickly outgrow or one that had capacity that we may never use, should the group decide not to proceed with a full digital migration. It was the logical choice." Hendrick looked seriously at scalability and response time. It was important that the PACS system had the ability for each location to view images on demand because the physicians regularly travel among the 16 offices.
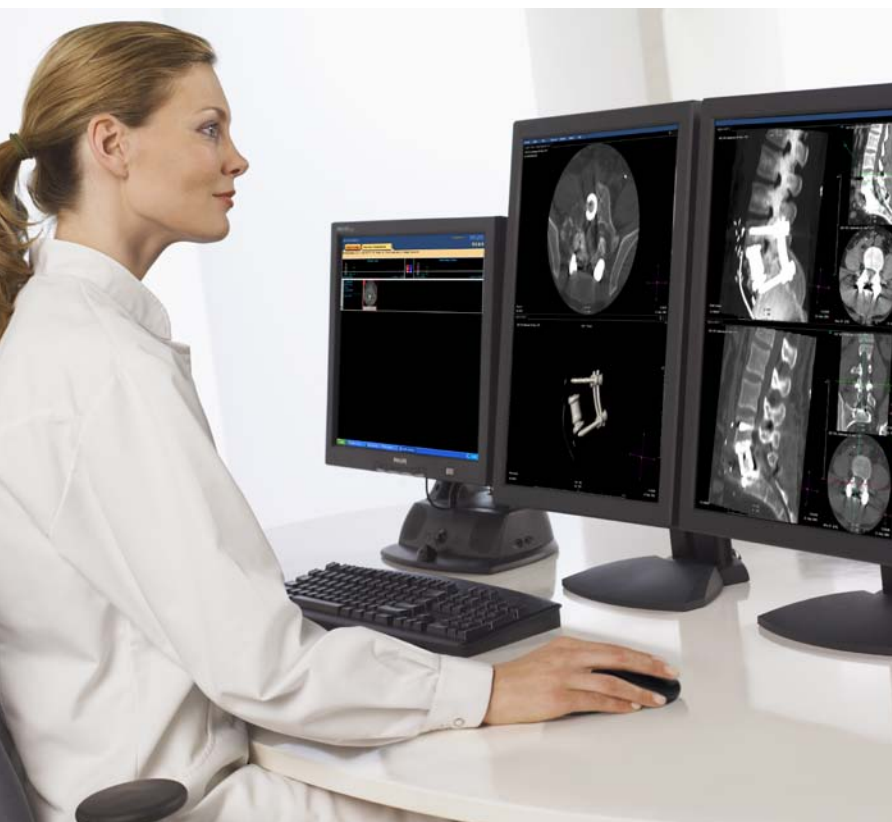
"With iSite PACS web-based image distribution capabilities, we found we could pull up images at our satellite offices from our server downtown in seconds," he explained. "So we went ahead and put the infrastructure in place but are paying based on our usage. This gives us the ability to afford a high-end PACS at a lower start-up cost. We have been methodically growing the PACS system as we convert modalities at each location."

To date, seven X-ray suites have converted to digital radiography (DR) and seven to computed radiography (CR). Additional MRI, fluoroscopy and ultrasound modality images are now stored in iSite PACS. "Within the next year we will be completely digital," noted Terri Tandy, clinical systems administrator.

After reporting a positive initial experience with iSite PACS, OrthoCarolina recently signed an eight-year iSite PACS expansion deal with Philips. Once the conversion to digital radiography has been completed, the practice expects to store about 290,000 new images a year on its iSite PACS system.

Flexible, open API

OrthoCarolina's new PACS does not operate using a typical RIS (radiology information system) for access. Instead, Philips worked closely with OrthoCarolina's

Dr. Alden Milam, Chairman of OrthoCarolina's
Operations Committee and spine surgeon

Steve Hendrick, Chief Information Officer

Terri Tandy, Clinical Systems Administrator

implementation team to interface iSite PACS with
Allscripts TouchWorks EHR (electronic healthcare
records). "Our doctors are now able to pull up iSite
PACS images from within TouchWorks without having
to toggle away from the patient's chart to do a separate
search," Hendrick said. "They can see a full timeline and
access any priors by clicking on a tab to launch the iSite
PACS browser."

And iSite PACS interfaces seamlessly with other third-
party tools such as Orthocrat's TraumaCad preoperative
planning software, and OrthoFlow image workflow
software. "Integration with our TraumaCad templating
tool and X-ray workflow software was one of the easiest
implementations I've been a part of," comments Tandy.

Effective for orthopedics
In the orthopedic discipline, patient timeline review is
critical. Alden Milam, MD, chairman of OrthoCarolina's
operations committee and spine surgeon, described how
iSite PACS helps physicians compare studies.

"With joint replacement for example, where you may be
looking at lytic lesions underneath an implant, you want
to follow those along through a series of images over
time to make sure the lytic defect is not getting larger.
Having access to all of the priors instantly is a huge
benefit to us as orthopedic surgeons."

"For scoliosis or progression of a spondylolisthesis,
having the timeline and related images is very helpful as
we work to define appropriate treatment," added Dr.
Milam.

The right fit
OrthoCarolina continues its phased approach to digital
radiology, "piggy-backing" new, networked iSite PACS
workstations as each office comes online. With the
fee-per-study delivery model, Hendrick is able to analyze
the ongoing effort and determine incremental PACS
expenses for a predictable ROI. Physicians like Dr. Milam
are finding access to images increasingly easy.

"Now, when a patient shows up," Dr. Milam says, "I
don't have to worry that the X-ray films are located
up in Mooresville, which is 25 minutes away. They are
available instantly with iSite PACS. We can also upload
images from outside institutions into the system easily
and have them available for review immediately."

Hendrick concludes, "Philips Healthcare's ability to work
within our complex environment—to get a scalable
high-end PACS solution in place before the group was
ready to commit to a total digital conversion—made the
difference for us."

"The continuity of care and the ability to
better evaluate that care within a digital PACS
environment is something remarkable."

Alden Milam, MD
Chairman Operations Committee and spine surgeon

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