New England Baptist Hospital
Boston, MA

A need for improved efficiency

Boston-based New England Baptist Hospital is a nationally recognized orthopedic hospital and teaching facility. Due to the high volume of reconstructive surgeries the hospital performs each year—more than 12,000 in 2008—and the numerous patient referrals received from both within and outside of the United States, the hospital needed a more efficient way of viewing patient studies from external facilities.

For a number of years, the hospital had imported patient studies residing on CDs from outside facilities directly into its picture archiving and communication system (PACS) so that they could be viewed by the hospital's surgeons and radiologists. At the time, the hospital was relying on an expensive PACS workstation located in the radiology department for viewing study images. However, only images saved in standard DICOM format could be imported into the PACS. In the case of non-DICOM images, staff had to locate a CD viewer that could open and display the studies—a cumbersome process.

In addition, many surgeons would simply bring CDs containing patient studies with them into the OR. "The surgeons would become frustrated when the computer's security settings prevented OR personnel from accessing the appropriate viewing application," said Cynthia Fournier, Radiology PACS Administrator at New England Baptist Hospital. "The IS department would have to be called to temporarily enable security privileges so the application could run and the study images could be displayed."

To address these challenges, New England Baptist sought a standardized solution that would allow surgeons and OR staff to easily load and view patient studies in a variety of formats, thus streamlining workflow and eliminating the need for staff to learn how to operate multiple viewers. The hospital also wanted CD burning capabilities and the ability to import studies into the PACS for archival purposes.

A flexible approach

With these goals in mind, New England Baptist invited several vendors to demonstrate their products to hospital staff and made reference calls to facilities that were using the vendors' products to learn about their experiences. After a thorough evaluation process, the hospital selected the ETIAM Viewer universal image viewer.

"We selected ETIAM for several reasons," said Fournier. "First, when compared to other viewing applications, ETIAM Viewer was able to open the largest variety of CD formats. Also, the software is highly flexible and could be configured according to our specific needs. Finally, we liked the fact that ETIAM approaches the study viewing process as a central part of the clinical workflow."

The hospital also purchased the Publisher edition of ETIAM Viewer, which enables staff to view DICOM images and then generate CDs and DVDs, and DICOM Izer—an application that integrates medical images in a variety of formats, including radiology films, dermatology images, pictures and video data from endoscopies, surgeries, and X-rays, into a hospital's imaging network.

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> **Radiology PACS Administrator**
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ETIAM

Secure Medical Networking

New England Baptist implemented the ETIAM Viewer solution in the spring of 2009. "We chose a staged process so that we could train our surgeons and OR personnel on a gradual basis," said Fournier. "After initially deploying the applications in the PACS area and then on the Radiology viewing stations, the software was loaded on the OR PCs and is slowly being rolled out to surgeons according the volume of surgeries they perform. ETIAM has been very involved in the training process, which we appreciate."

To date, ETIAM Viewer has been installed in two surgeons' offices. From the comfort of the office, a surgeon can use ETIAM Viewer Basic to quickly access and display the contents of a study CD and then drill down to a "window" view of a particular image or view a series of images. The surgeon can then opt to send the study to the ETIAM Viewer A dvanced workstation in the radiology area where the study images are reconciled with the patient identification number that was assigned to the patient upon admission to the hospital. This enables all of a patient's study images to be stored in a centralized location and ensures that the right patient is matched with the right study—which is integral to patient safety.

In addition, during surgery, a surgeon can send "live" images of the surgery to the PACS using DICOM Izer. This capability enables the radiologist to simultaneously see the images that the surgeon is viewing and then compare them to the study images to verify that the surgeon is operating at the correct level of the spine—for example, L4, L5 or T6.

Enhanced workflow and better patient care

Since implementing the solution, the hospital's surgeons are more efficient, as they can now access and review studies without having to locate a compatible viewing application. "Our surgeons no longer complain about not being able to access and save study images and can spend more time focusing on patient needs" said Fournier. "And, the IS department doesn't have to dial into the OR to address PC security issues, which has been a significant time-saver. In addition, the ability to quickly import outside study images into the PACS has streamlined workflow for our radiologists by making it easier for them to compare current patient images with prior study images."

Additionally, ETIAM Viewer ability to pull patient information directly from the hospital information system and radiology systems ensures that all patient information is consistent—resulting in fewer data entry errors.

"In the past, making sure the correct studies were matched to the correct patient required a number of manual processes," said Fournier. "Surgeons had to view the study CD, pick the appropriate study images and then courier the CD to another department within the hospital. That department then had to open the envelope, read the instruction form, reconcile the header information for the images with the hospital-assigned patient ID number and push the images to the PACS—a time-consuming and error prone endeavor."

It's also easy to move studies from one department to another, and patients can keep a CD containing their study with them—giving them ownership of their health information and increasing patient satisfaction.

"The ability to import and view images from studies performed elsewhere in the country, or even outside of the country, has really improved clinical workflow," said Fournier. "Not only is the external CD handling process smoother and more expeditious for surgeons, patient and radiology staff, but surgeons and radiologists can now quickly and reliably access the information they need to provide the best patient care possible."

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