



TeraMedica's Univision™ Drives New Big Picture Information Flow at Meriter Hospital

Evercore® ...A Single Archive. A Singular Vision of Integrated Healthcare

It's powerful, versatile and evolutionary. Yet, most clinicians don't even know they're using it—and that's just as it should be. At Meriter Hospital in Madison, WI, an innovative new medical imaging solution is quietly changing the face of healthcare IT—and supporting a better, more intuitive way to practice medicine.

Today, with a single mouse click, every doctor in every medical specialty has access to the images that shape patient care for a more comprehensive and integrated picture of every case. Previously available only at dedicated PACS workstations in select locations, these images can now be viewed by authorized users anywhere over the Internet using a convenient Web-enabled application. Images are available in a lightweight, easy-to-manage, transportable format appropriate for clinical users outside of radiology.

The result: more immediate response to patient medical needs when seconds count, supporting a higher standard of medical care. Additionally, this anywhere, any time access has drastically reduced a physician's middle-of-the-night trips to the hospital to view patient image files. And cross-specialty availability of patient information is ushering in a new, multi-faceted approach to clinical decision making and treatment planning.

These important changes are thanks to TeraMedica Healthcare Technology's Univision module, part of the innovative Milwaukee-based company's Evercore® Clinical Enterprise Suite. The Evercore suite of products enables data compatibility and interoperability among today's diverse array of healthcare IT applications. At Meriter, the Univision module integrates crucial imaging data seamlessly into the hospital's electronic medical record (EMR) system. Like many hospitals across the country, at Meriter this information had been conspicuously absent in this otherwise comprehensive repository for patient medical information.

A Failure to Communicate

"Before we implemented TeraMedica's Univision, our diagnostic images were essentially locked inside our dedicated PACS solution," says Marsha Wayne, Senior Systems Analyst for Meriter Hospital. "Like many systems on the market today, Meriter's PACS stores images using the vendor's proprietary interpretation of the DICOM archiving format, the medical imaging IT standard created to support system interoperability. Proprietary versions of DICOM, however, keep information isolated and bind users to their PACS vendor." As a result, until implementing Univision, Meriter was dealing with isolated silos of image information.

What's more, the simple inconvenience of image access, which was available only through the PACS, created other significant problems. Wayne comments, "With our proprietary format, streamlining image access would have meant purchasing additional extremely costly PACS workstations. These workstations display large diagnostic quality files that

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doctors other than radiologists really don't require. And even with these additional workstations, our imaging data would have remained isolated.”

Noting that lack of data interoperability is endemic to healthcare IT, where departmental solutions traditionally have developed independently, Wayne says the repercussions are often significant. “When doctors fail to get a comprehensive picture of a patient through various hospital information systems, their decision-making is often similarly limited. Traditional healthcare IT offers few choices. But, TeraMedica gave us a better option.”

The Better Way

Through the Univision™ module and its related suite of Evercore® products, TeraMedica is helping to usher in a new paradigm in healthcare IT compatibility at Meriter and hospitals across the country. In essence, the Univision module converts all DICOM data to vendor-neutral JPG images, which can be accessed on any PC without a specialized viewer. On Meriter's busy clinical workstations, a hyperlink directly interfaces Univision to the EMR. “There is no separate login. Images are available in seconds, and physicians often think the images are part of the EMR record,” says Rick Bankers, Network Analyst for Meriter Hospital.

“The application runs on any PC through a simple plug-in, and downloads from a central hospital server, making it easy to maintain. TeraMedica has given us control of our data and helped cut image management costs overall, while allowing us to leverage our existing PACS technology to better meet our needs.”

Solving Wide-Ranging Problems

Prior to implementing Univision, the difficulty of image access had wide ranging implications. Workflow was disrupted as physicians moved to alternate locations for image viewing, logged into a stand-alone PACS application and then opened files—often for patients whose information they had just finished viewing elsewhere in the hospital. Multiple physicians waiting to use a single PACS workstation created significant bottlenecks and frustration for doctors pressed for time. Because images were not available offsite, not only did physicians have to make evening trips to the hospital for non-emergent patient cases, they also were limited to working onsite during regular hours to maintain image access.

Naturally, patient care consultations and second opinions with offsite physicians were also difficult and slow, requiring image printing and transportation by courier. Likewise, communicating with offsite referring physicians was complex. In short, the situation was extremely difficult and was expected to worsen as the volume of isolated imaging data expanded.

Compounding the problems, according to Wayne, was the hospital's PACS application itself. “Unlike some solutions, our PACS does not offer a lightweight solution for non-diagnostic image viewing. If this functionality had been available, it would have eliminated the need for dedicated workstations by making non-diagnostic quality files available on PCs,” she adds. “But even with such a viewer, physicians would still have to log into a separate imaging application as part of their daily workflow.”



In an example of an EMR screen shot, the image is shown here expanded from the main EMR screen.

As a result, doctors who desired image access at home purchased their own full PACS workstations that the hospital IT department supported offsite.

Searching for a Solution

In May 2006, Meriter's IT department heard about how another nearby hospital was solving a similar problem. A small search team, comprising the hospital CIO, Wayne, the PACS administrator, the IS clinic systems manager and others, conducted a visit to the site. "We were all very impressed with Univision™, which had opened up image access across the hospital and significantly streamlined workflow. Our CIO, in particular, felt he had found an answer to our image access dilemma," says Wayne.

Coincidentally, Meriter had much in common with the existing TeraMedica site, increasing the hospital's confidence that the solution would be equally effective in-house. Both hospitals, for example, deploy their EMRs on a CITRIX platform, which provides an open architecture and supports remote access over the Internet, meaning that once linked to the EMR, the images would also be available anywhere online.

TeraMedica—the Can-Do Company

Meriter's forward-thinking IT department also had a comprehensive list of IT specifications TeraMedica would have to meet to implement the solution. They sat down with the company to explore the possibilities.

"TeraMedica's attitude can be summed up as yes we can. The company agreed to work with us to deploy the solution exactly as needed," says Wayne. "These requirements included interfacing the solution with the hospital's existing SQL database standard. It also meant deploying it on state-of-the-art space-saving blade servers, which pare down maintenance costs through minimal heating and cooling requirements. Finally, it called for implementation through a high-availability clustered server configuration to provide a failover solution if the primary archive failed.

"We made the decision to utilize the solution, and TeraMedica had it up and running in eight weeks. This even involved minor enhancements to the program in some areas to add specialized functionality. The physicians loved it from day one," says Bankers. "The company went over and beyond what was needed to make the installation a success."

"About a week after Univision went live, we had to take it down temporarily, and the doctors were extremely upset. It was a major impediment to their workflow," he adds, noting that Univision has worked flawlessly since it was installed. "Univision instruction was provided as part of our EMR training. The two applications are that tightly integrated."

Univision requires little maintenance and intervention from the hospital IT department. "TeraMedica created rules and set the permissions. Sometimes, I don't touch the application for up to two months—there's just no need," notes Bankers. "In short, it just works."

"TeraMedica provided IT department training, which was completed in less than two hours, and monitors the program remotely to head off any difficulties before they have an impact," he continues. "They upgrade the application on the server as needed, and changes automatically download to individual users' PCs."



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Meriter Hospital**



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Clinicians Hail the Benefits

The impact on clinicians has been enormous. According to Cate Ranheim, M.D., a hospitalist in Meriter's Hospitalist Program, which focuses on delivery of high-quality in-patient care, "In my position, efficient multi-tasking is critical. With Univision, I am now able to view radiology images in real-time while I am admitting, consulting and rounding on patients. I no longer need to visit the radiology suite or find an imaging workstation, which saves a significant amount of time. In addition, the busy workload of the medical imaging department may lead to delays in exam dictation or transcription. In that case, Univision allows me to review imaging studies myself. This has dramatically increased my ability to act on results and move quickly to the next best step for patients during their hospital stays."

The application also has enhanced the speed of communications with offsite referring and consulting physicians, who are able to log on remotely to the EMR system as authorized users.

The easily accessible images also are used to enhance patient education. Physicians often print images in full HIPAA compliance as patient take-aways.

"Now doctors have lots of imaging options—and that's what it is about," says Wayne.

New Possibilities for the Future

Both Wayne and Bankers agree that not only did TeraMedica clearly solve a set of difficult problems, it also opened the door to a world of new possibilities in image management and accessibility. Meriter also is now considering utilizing TeraMedica's Evercore SmartStore™ module, a more robust DICOM archiving capabilities to store diagnostic quality images in a vendor neutral system. Currently, the hospital has six distinct image repositories. Utilizing Smartstore, it plans to migrate all this information to a single, efficient, integrated archive that can be easily interfaced to a wide range of healthcare IT applications.

Furthermore, Smartstore offers a digital image lifecycle management feature. As data ages and is less likely to be accessed, it is automatically migrated to less costly archiving media of the hospital's choice and eventually eliminated altogether. The IT department sets its own rules for the flexible feature. Shortly after implementing Univision, the hospital was so satisfied with the results, it began considering the lifecycle management functionality.

"TeraMedica is open to new technologies and will work with a site to accommodate their changing needs amid the evolving footprint of healthcare information technology," says Wayne. "TeraMedica is truly a partner for today and the future."

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