

ADVERTORIAL

AMICAS, INC.

Providing Web-based Solutions for Image Management Systems

Imagine if diagnostic medical images were as readily available inside a computer network as people's driving records.

Well, imagine no more. By harnessing computer technology and the Internet, AMICAS, Inc., the Newton, MA-based provider of Web-based image management solutions, has made medical images universally available in just such a way.

"People have been talking about something like this for 10 years," says company president and CEO Hamid Tabatabaie. "Well, it's finally here. There is no reason why a patient's images can't be available this way, now that images have become the document people rely on for diagnosis."

If you've watched only a smattering of "cop shows" on television, you know the drill: Let's say someone is pulled over in Florida for a speeding violation. It's an easy matter for the state trooper to find out—right there on the spot—if the driver has any outstanding warrants in other states. Law enforcement agencies have implemented a computer system that is effective and efficient.

That kind of capability is now available to the healthcare field. But the analogy to law enforcement shouldn't suggest that medical information can be accessed for some vaguely Orwellian purpose (the Health Insurance Portability and Accountability Act was designed to prevent that). Rather, as Tabatabaie points out, images would be accessed in a way that ultimately enhances patient care. He offers an example. "If I am going from Chicago to Florida for the winter, my doctor in Florida could have easy access to the images," he points out. "I wouldn't have to have another MRI taken."

Essentially, the service AMICAS, Inc. provides is a techno-evolutionary step beyond the Picture Archiving and Communication System (PACS). "Companies selling PACS had figured out how to automate the radiology business inside the radiology department," says Tabatabaie, "but no one had figured out how to get images outside the department, inexpensively and effectively, to the specialists and referring physicians. AMICAS was born to address that problem."

What AMICAS did was develop an Internet-based medical image management system that integrates teleradiology, PACS and electronic records. This system supplies several advantages:

- It helps facilities convert to a film-less archiving system
- It connects the radiology department to desktop computers throughout a facility, making access to images quick and convenient

- It enables images to be sent over the Internet, securely and inexpensively, to sites located anywhere in the world.

Within seconds, medical images are available to physicians and authorized users anywhere over the Internet, on a standard desktop PC and through a standard Web browser. No fancy equipment is needed.

The company's comprehensive suite of Web-based medical image management solutions enhances the capture, display, integration, routing and storage of diagnostic images. A patient being treated in a local clinic can have their diagnoses confirmed by another radiologist or a specialist anywhere and anytime. It also frees physicians from having to run down to the radiology department every time they need to view an image.

Combining Internet technology with radiology, AMICAS has serviced medical centers, university hospitals, imaging centers and other institutions worldwide for the past five years. Larger institutions especially gravitate toward the technology. Clients include Cornell University, Columbia University, Boston Medical Center, Massachusetts General Hospital and Kaiser Permanente.

"AMICAS' compression software allows you to send images over phone lines or T1 lines or faster lines," says Francis Hussey, Jr., MD, Chairman and CEO of MRI Centers of New England, an AMICAS customer for the past two years. "We can send images to be read in digital format to workstations at Massachusetts General Hospital or Children's Hospital or Boston University."

According to Tabatabaie, AMICAS offers two different products: a Web distribution product and a full, Web-based image management set. The first provides the ability for an existing PACS to distribute images over the Internet to browsers on regular PCs, allowing PACS-equipped facilities to send images outside of the radiology department. (The system also integrates images with the facilities' electronic patient records so users can access images from their current applications.) Tabatabaie describes the second set as, essentially, a Web-based PACS that provides radiology workstations, teleradiology, archiving, voice dictation, integration of reports with images, and distribution of images over the Web. It also provides something he calls "after-hour" coverage from home. This enables radiologists to view images at home on their PC.

The AMICAS system is very cost-efficient because of the Internet's capability of storing and distributing information and because the system uses the hospital's existing computer hardware, like desktop PCs. "There is a lot of cost efficiency built into it," says Hussey. "We don't have to use a courier service to send film out. We don't have to print the film, which is expensive, and we don't have to store the film, which is also very expensive."

"The images are securely stored and are immediately accessible to any authorized referring physician with access to the Internet," says Tabatabaie. "In follow-up cases, if you need to see any old films, you can go onto a Web site and pull up the study relatively quickly."

The system's cost-effectiveness results in substantial savings. "Studies show that the cost of manual traditional images is anywhere from \$15 to \$20 a case—for the film, the chemicals, storage and delivery," says Tabatabaie. "When you calculate the cost of the AMICAS service, it comes down to less than five dollars per case inclusive of the infrastructure costs."

The system is time efficient as well. "Hospitals using AMICAS say they have gone from 30 minutes to five minutes from the time patients are scanned to the time that images are available for viewing," says Tabatabaie.

Of course, time often is a critical element in patient care, especially in environments like the emergency room, where an attending physician orders x-rays for a referring physician who might be located across town. That means the emergency room has to produce the film, package it and then send it out. With the AMICAS system, standard computer equipment can cut out the extra steps and allow the cross-town physician to see the images instantly. "A referring doctor can look at his patient's films from his office PC by just knowing the Web site, the Web address, and the security code," says Hussey.

He cites an example of one critical situation where the advantage of easy access came into play. "In Springfield [MA], we had a case where gangrene was setting in," he recalls. "There was a question whether the patient's leg had to be amputated. We did an MRI and the physician wasn't an expert in reading MRIs of the lower extremities. So we sent the digital information to Boston, where it was interpreted, and we had a report in about an hour's time. Based on the report, we opted for vascular surgery as opposed to amputation. The patient's leg was saved."

Hussey reports that there have been many similar situations where the system provided a rapid consultation and immediate reading.

Tabatabaie says the technology is not so complex that the average hospital wouldn't be able to afford it, and he envisions a time when there will be an ATM network of images.