

# Solutions Applied



## A CASE STUDY

## Improve Referral Relations by Removing Barriers to Image Submission

Peninsula Regional Medical Center used McKesson Cardiology Imaging Referral to improve efficiency and strengthen its referral base.

Peninsula Regional Medical Center is a 358-bed facility serving the Delmarva Peninsula region of Delaware and the eastern shore of Maryland and Virginia. As the leading cardiovascular referral center in an increasingly competitive area, it gained an advantage by enabling cardiologists and referral facilities to send and receive DICOM images via the Internet. Using McKesson Cardiology Imaging Referral (MCIR) for Internet-based telecardiology, the tertiary care center strengthened its relationships with referring physicians and facilities, while streamlining the process for receiving images and speeding consultations. The result was better and faster diagnosis, and greater physician and patient satisfaction.

At Peninsula Regional's Guerrieri Heart and Vascular Institute, patients receive comprehensive interventional and surgical care. Each year, surgeons and physician specialists perform more than 400 open-heart surgeries and 3,000 cardiac catheterizations. The institute has the region's only two comprehensive electrophysiology labs for treatment of arrhythmias, and it houses the largest cardiovascular/pulmonary rehabilitation program in the mid-Atlantic area. Since 1974, its surgeons have performed more than 11,000 cardiac bypass surgeries.

As the leading cardiovascular referral center, outlying facilities frequently sent patients to the Guerrieri Heart and Vascular Institute for consultations and procedures. Typically, physicians would send CDs of DICOM-compliant images by delivery service or hand-carried by the patients themselves. Cardiologists or cardiovascular surgeons often did not see the studies in advance of consultations, slowing diagnostic analysis. Without quick access to comprehensive clinical information, workflow was less efficient, resulting in lower satisfaction for both physicians and patients.

"There was physician interaction taking place in advance of the referral, but it was not always with the benefit of having the ability to review those studies before they saw the patient," explained Ray Adkins, chief information officer at Peninsula Regional. "It was certainly not efficient — either from the physician perspective or that of the patient."



Using McKesson Cardiology Imaging Referral (MCIR) for Internet-based telecardiology, Peninsula Regional's Guerrieri Heart and Vascular Institute streamlined the process for receiving images and speeding consultations.

Once the sole referral center for the region, Peninsula Regional faced increased competition from hospitals and facilities offering similar services. While few possessed the same level of experience, the center's leadership wanted a system that could strengthen its relationship with physicians by offering an improved means for accepting and processing studies.

### The Challenge

Peninsula Regional Medical Center's leadership was familiar with other institutions, like Washington Hospital Center in Washington, D.C., that had shifted to the system's Internet-based transferal process. For several years, Peninsula Regional's cardiologists had been able to upload studies to physicians at another local tertiary care facility that had MCIR. They saw the benefits of this enhanced means of transfer and communication. "Our interest was to improve the process," said Adkins. "By utilizing the same technology as the referral center, we could better serve a number of outlying facilities from which we received patients."

## The Solution

Using this Web application, Peninsula Regional allows cardiologists, CV-surgeons and medical imaging specialists to send and receive DICOM images via the Web, without the need for proprietary connections or hardware. Using a small plug-in from a Peninsula Regional-branded Web site, physicians can upload, view and exchange images and reports directly from any personal computer using a secure password and a standard Web browser.

The HIPAA-compliant system provides users with administrative tools to set up and manage the queue of referral studies. Alerts ensure that no study is forgotten and that high-priority cases receive prompt attention.

The transition from handling CDs to Web-based digital images proved to be an easy process for both the hospital's physicians and their referring facilities. Over the past six months, referring physicians have accessed the system more than 80 times.

"The physicians really did not have any problems learning how to use the system," said Melissa Miller, C-PACS analyst at Peninsula Regional. "They were quickly able to maneuver through their images from the referring site."

## The Benefits

The imaging referral system has brought a new level of efficiency and heightened communication to both patients and their caregivers. These include easier review, comparison, storage, post-processing and sharing of studies, along with enhanced analysis and improved resolution.

During a cardiac catheterization procedure at a neighboring hospital, a cardiologist ran into an unexpected problem. While the patient was on the table, his physician was able to use the system to transmit study images to specialists at Peninsula Regional. "I watched as the cardiologist here viewed the studies and told them he could help them," recalled Paul Clappison, PACS administrator at Peninsula Regional. "By the time the patient arrived, the physician was prepared for the procedure."



Using the McKesson MCIR Web application, Peninsula Regional allows cardiologists, surgeons and medical imaging specialists to send and receive DICOM images via the Web, without the need for proprietary connections. The system has been used to send images from cath labs for a second opinion while the patient is still on the table.

The system has even extended Peninsula Regional's reach around the world. A staff cardiologist was able to monitor and advise a family member living in India by accessing local studies uploaded to the system.

A pediatric patient had undergone neurosurgery in Baltimore. The child returned home to the local area and Peninsula Regional continued to provide his surgeon with updated studies. Based on those images, the patient eventually returned to Baltimore for additional surgery, but in the meantime the patient was able to remain at home while being monitored.

"MCIR provides us with an effective means for strengthening our existing referral base," Adkins said. "It also has the potential to bring new patients to Peninsula Regional since new relationships are being forged with physicians in outlying facilities."