MHP's Centralized Storage Archive for Cardiology and PACS Designed to Serve Seven Hospitals

CARESTREAM EIM Software Also Delivers Disaster Recovery/Business Continuity

Mercy Health Partners (MHP) system of Toledo, Ohio, has built a new centralized storage architecture that will soon serve all seven hospitals in its network. Mercy Health's CIO Jim Albin and Bill Borer, Director of Technical Services, had two primary goals: to replace independent clinical storage systems with a cost-effective, productive architecture and establish enhanced disaster recovery/business continuity.

The healthcare system's central archive currently manages 450,000 imaging studies from cardiology and PACS (picture archiving and communications) systems at its four Toledo-area hospitals. In the next few months, the healthcare system will integrate imaging studies from PACS at its three remote hospitals into the central archive, which operates on a storage area network (SAN). The healthcare system plans to integrate pathology results from its Toledo-area hospitals in the coming year as well.

Fast, Reliable Access Even During a Disaster

Albin says this ambitious plan is the only way Mercy Health Partners' IT staff can efficiently manage a burgeoning number of imaging exams. "We know we are facing continuous growth in imaging studies, both in terms of study volumes and storage space per study. So we wanted to architect a solution that would equip our clinicians and staff with fast, reliable access while delivering a disaster recovery plan that provides access even during a network outage or natural event," notes Albin.

Albin and Borer found the management tools they were looking for within KODAK CARESTREAM Enterprise Information Management, offered by Carestream Health, Inc. "Like every other major healthcare institution, we have disparate clinical systems with their own storage solutions that are from different vendors and of varying ages. CARESTREAM EIM manages our new consolidated archiving solution and will enable us to achieve a centralized archive for imaging studies captured at all seven of our hospitals."

EIM storage architecture provides intelligent management of DICOM and non-DICOM information and can manage a variety of existing storage platforms through industry-standard interfaces. It is highly scalable, and can be expanded from supporting one or two facilities or applications to managing multiple imaging and information applications at a dozen or more institutions. It can also perform data migration from outdated or unwanted storage platforms. In this case, CARESTREAM EIM was used to move cardiology data from CD/DVD storage devices to the main EMC Centera-based archive.

Mercy Health Partner's primary regional data center is based at St. Vincent Mercy Medical Center, a regional referral and teaching institution in Toledo. EIM software stores all imaging studies in both the main data center and simultaneously mirrors that data at a secondary data center at St. Charles Mercy Hospital, which is 13 miles away in Oregon, Ohio. Data is communicated over a fiber optic network.

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The healthcare system achieves business continuity with a cold PACS server at St. Charles that can be activated if the primary server is lost. "Health records have to be sustained, and the only way to do that is to have both the information and the processing power available to serve these records to staff and clinicians. Our configuration is designed to do just that," Albin explains. "Most PACS installations do not provide adequate disaster recovery. Our system will help guarantee access to medical imaging records—both to meet HIPAA regulations and to satisfy the needs of our patients and physicians."

Mercy Health currently stores data in its primary and secondary data centers for 18-24 months, and then retains information for the length of time required for each type of study, according to Borer. The staff soon plans to take advantage of EIM's clinical information lifecycle management capabilities, in which user-defined storage plans are applied to each type of information.

Software Delivers Automated Management

EIM software can read dozens of different DICOM fields and apply storage plans that prescribe the storage location and length of retention based on clinical need and cost of storage media. A Mercy Health multi-disciplinary committee is currently meeting to create storage plans for each type of exam. These instructions are very specific and can include different rules for pediatric, general radiography, cardiology, oncology, mammography and other types of exams. When these storage plans are finalized, EIM software will apply the new requirements to existing and future imaging studies.

"Automated management simultaneously eliminates manual, time-consuming processes by our IT staff. It also ensures that data and images are maintained on-line during periods of peak use and transferred to near-line or off-line storage during periods when access is unlikely," notes Borer.

Albin adds that the Carestream Health project management team worked closely with his in-house staff to design and implement this large configuration. "I was extremely pleased with the Carestream Health project manager. His experience at other institutions was invaluable in helping us design and implement a storage architecture that would support multiple applications and facilities and allow ample scalability for future growth."

By the end of the summer of 2007, Mercy Health Partners will be operating a regional PACS network that includes three rural hospitals as well as its four Toledo-area hospitals. At the rural sites, data will be written to local storage for two years and also transmitted to the primary data center as well.

This regional PACS will allow the healthcare system to offer after-hours radiology reads at its main facilities and facilitate nighthawk services for the remote sites. Physicians and radiologists at the rural hospitals can also seek consultations with specialists and review the imaging studies immediately and simultaneously.

"We are very excited about the benefits of bringing all our hospitals online with PACS and supporting our data storage needs with CARESTREAM EIM," Albin reports. "Our institution benefits from more efficient use of both personnel and equipment resources, clinicians benefit from faster and more reliable information access and patients benefit from the ability for specialists to view their imaging exams and help make a diagnosis or recommend appropriate treatment. It's a winning combination for all the audiences that we serve."

More Information

To learn more about KODAK CARESTREAM Information Management Solutions, contact your Carestream Health representative or call 1-877-865-6325, ext. 655.

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