

Millennium Imaging Implements Always-Online Image Archiving Solution and Meets HIPAA Compliance

The Customer

Founded in 2000 by Dr. Camiar Ohadi, Millennium Imaging provides advanced multi-modality imaging services and superior patient care at locations in Montclair and Rancho Cucamonga, Calif. Millennium Imaging operates a total of four modalities including Open-MRI, CT, Ultrasound and Bone Density. Referring physicians depend on the practice to provide high-quality images and critical information they need to develop comprehensive treatment plans for their patients. Since opening its first location in Montclair, Millennium Imaging's average number of 5-10 studies per day has increased dramatically to more than 30 per day, and with the opening of its second location in Rancho Cucamonga, the practice is expecting additional growth.

The Challenge

For several years, Millennium Imaging maintained a CD-based digital image archival and retrieval system. The digital image archive, which consisted of more than 900 CDs, required significant manual intervention for proper maintenance and updating. Unfortunately, this solution also lacked the scalability features to keep pace with the practice's rapid growth and the opening of its second location. In addition, the replication of all medical images and studies for remote storage, as required by the Health Insurance Portability and Accountability Act (HIPAA), became a highly labor-intensive process resulting in significant additional costs.

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"Our technologists were routinely inspecting the archive and the CD-ROMs and comparing against the log records. It became an ongoing issue as we expanded our practice to not only find the time, but also additional onsite storage space for storing the CDs," said Camiar Ohadi, M.D., medical director of Millennium Imaging. "More importantly, accessing the digital image data from our archive for comparison studies or follow-up visits required a substantial time delay and effort to meet the needs of referring physicians."

Millennium Imaging was in need of a cost-effective, automated, rule-based solution to handle its remote replication and provide a reliable method for disaster recovery and protection.

The Solution

Millennium Imaging deployed the Candelis ImageGrid™ 1000 system at each location and quickly discovered that the solution exceeded all expectations.



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Dr. Camiar Ohadi, M.D, Medical Director

Locations

Montclair and Rancho Cucamonga, Calif.

Services

Open-MRI, CT, Ultrasound and Bone Density

Key Business Challenges

Reliable and cost-effective digital image archiving solution to accommodate growing patient needs

Unified image management capability between two different sites to optimize radiologist time and availability

Remote replication capability for compliance with HIPAA disaster recovery requirements

ImageGrid™ 1000 Key Benefits

Lower administrative and maintenance costs for image archiving

Increased radiologist productivity from faster retrieval and automated digital image routing between locations

Automated remote replication for HIPAA compliance

The 4.8-terabyte system was installed in just four hours with no interruptions to daily operations.

Today, all four modalities in each location send images directly to their respective local ImageGrid system and are available for immediate viewing by radiologists. As a DICOM-based storage server, ImageGrid is compatible with any DICOM viewing software, including Millennium Imaging's existing Merge eMed e-Film Workstations™. A Virtual Private Network (VPN) connection between the two locations provides a secure protocol for bi-directional replication of each imaging study.

"We no longer consider digital image storage and archiving to be an obstacle for future growth," said Dr. Ohadi. "The ImageGrid gives us a faster and more efficient solution for accessing and retrieving studies and for delivering reports more quickly to referring physicians. Transferring images between our two sites has become considerably less cumbersome - which is especially relevant for most data-intensive studies which can now be programmed for overnight delivery to save valuable network bandwidth during our busiest business hours."

The Results

Millennium Imaging has been able to improve productivity among radiologists through immediate and always-online access to its entire image library, as well as the routing of images to offsite users. The ImageGrid's full compatibility with all of Millennium Imaging's DICOM-standard modalities has lowered image management costs by eliminating a labor-intensive CD-based system. Equally important, errors resulting from the manual handling of CD-based images have been all but eliminated. Based on current usage patterns, the ImageGrid system is expected to provide Millennium Imaging with approximately four years of disk-based archiving.

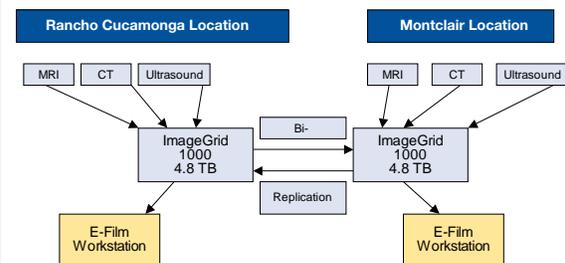
Millennium Imaging is also taking advantage of the ImageGrid-embedded PACS capabilities and features, such as image routing to referring physicians.

"Always-on access to images has enabled referring physicians to have their questions and requests addressed immediately, resulting in vastly improved satisfaction scores," added Dr. Ohadi. "The PACS feature has improved communication with referring physicians, which has in turn helped them provide superior, timely patient care."

In addition, the PACS capabilities enabled Millennium Imaging to avoid having to invest in more complex and costly PACS servers and hardware. According to Millennium Imaging, the ImageGrid helps reduce the company's image archiving cost to an impressive 50 cents per study.

The two ImageGrid 1000 systems also provide Millennium Imaging with a real-time disaster recovery capability through daily bi-directional replication, which protects patient data and complies with HIPAA data retention requirements. The system's proactive self-monitoring capability has allowed the practice to not only reduce its IT administrative costs, but also improve the uptime by operating continuously at 100 percent with virtually no administrative interaction.

Based on the success of the ImageGrid implementation, Millennium Imaging is now considering the addition of an advanced 64-slice, multi-detector CT. Despite the data management challenges of a 64-slice, multi-detector CT system, the practice is confident that the ImageGrid will be able to provide same level of data management and protection.



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