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Advanced TeraMedica Division Technology Helps SUNY Upstate Medical University (Syracuse) Prove an Image is Worth 1,000 Words

CASE STUDY

At SUNY Upstate Medical University (Syracuse), physicians know that a picture is worth a thousand words – and they drove the adoption of an expansive new archiving technology and image viewer based on that belief. Today these new solutions are beginning to realize significant hospital-wide benefits that extend well beyond the imaging realm.

A Demand for Multi-Specialty Image Archiving

Several years ago, specialists in pathology and ophthalmology at the prestigious multi-site medical center were convinced that the addition of photographs to their patient records would provide exponentially more information about medical conditions than mere charting notes. And they knew this information would be valuable to physicians working throughout the continuum of care.

However, the IT department, responsible for digital image archiving, also knew that managing this non-radiology data in the existing PACS – or in other clinical systems – would create exponentially more stress on an already overburdened IT infrastructure. It would also create yet another digital information silo, and the situation would be made even more challenging due to exceptionally large pathology image file size.

A Need for Enterprise-Wide Image Access

Simultaneously, Upstate was also grappling with the longstanding problem of enabling access beyond the local department to DICOM radiology and cardiology data stored in its FUJIFILM Synapse® PACS. Further, physicians involved in wound care and certain emergency cases wanted to archive their JPEG images and make them available to other medical professionals as needed. But, the current IT system did not support this. In short, Upstate was paddling upstream against a long list of IT challenges.

At that time, the hospital also was installing a new enterprise-wide Epic electronic medical record (EMR) system. The obvious answer to providing images hospital-wide was to image-enable its EMR – and not only with DICOM data but also with the variety of image formats used by the other departments wishing to store and share information. This included JPEG, MPEG, TIFF, PDF and others to share data with all who needed it.

While on the surface, the strategy seemed simple, accomplishing it was not. It called for sophisticated technology carefully deployed to meet the full range of Upstate's goals.

The TeraMedica Division's Synapse VNA Fits the Bill

As the hospital began EMR installation, it launched a search for a comprehensive archiving and image distribution solution that would accomplish all these goals. The TeraMedica Division of FUJIFILM's Vendor Neutral Archive (VNA), in combination with its lightweight enterprise image viewer, provided a comprehensive, affordable answer. The enterprise viewer is a downloadable, zero-footprint viewer that integrates with an EMR to bring images to desktops across the enterprise.

The TeraMedica VNA is able to aggregate images in a full range of formats, whether DICOM or non-DICOM, from across the enterprise into a single archive. It enables retrieval of files as an enterprise-wide, patient-centric record.

At the same time, the zero-footprint viewer enables review of all images from within the EMR, complete with basic viewing tools such as window/level and zoom. With an Image Connect link from the viewer from the TeraMedica Division, physicians can directly access radiology images in the FUJIFILM Synapse PACS – without even realizing they have left the EMR. In short, the IT tide is turning.

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A Staged Transition

To streamline the implementation from both a user and IT perspective, Upstate elected to implement a staged transition to its new TeraMedica technology, with Phase I completed in September of 2012. Phase II was launched in October of that year and completed shortly thereafter.

Phase I was initiated with the archiving of new radiology and cardiology data, image viewer links in the EMR, HL7 interfaces and the Image Connect EMR link to the FUJIFILM Synapse PACS. Approximately 75TB of radiology and cardiology data also was migrated to the Synapse VNA.

As part of the initial phase, new studies were sent to the VNA through a Forward and Forget profile on the hospital FUJIFILM Synapse PACS. This will also enable a Forward and Remember profile responsible for migrating historical study data. Also implemented were inbound HL7 interfaces for ADT and orders as well as outbound ORU messages, which provide the viewer URL links to post in the EMR. The ability to upload non-DICOM files into the Synapse VNA through the EMR was also put into place. This process began in the Education Communications department and was later rolled out to other departments.

As part of Phase II, SUNY integrated into the VNA data from Community General Hospital (CGH), an organization purchased by SUNY in 2011. Approximately 350,000 Philips PACS studies were also migrated into VNA storage using the automated TeraMedica Division DICOM Data Migrator (DDM).

The project at SUNY Upstate University Hospital will culminate by enabling a full range of departments, such as pathology, ophthalmology and wound care, to store and distribute non-DICOM data, meeting the needs of specialists who had helped to drive the project from the start.

Multiple Benefits

Through the TeraMedica Division of FUJIFILM implementation and beyond, SUNY Upstate Medical University will realize greater control over storage costs and a significant reduction in the costs of archive ownership. The organization will also receive all the benefits of a universally available holistic patient record, complete with images from a full range of disciplines in a wide variety of formats.

A Staged Approach

SUNY has implemented its TeraMedica Division of FUJIFILM technology in three phases:

PHASE I - completed

- Archived Radiology and Cardiology images from FUJIFILM Synapse PACS to Synapse VNA.
- Image-enabled Epic EMR though TeraMedica Division enterprise viewer.
- Linked FUJIFILM Synapse PACS to EMR through Image Connect from the viewer to implement non-DICOM upload tool in the Epic EMR.
- Implemented HL7 Interfaces: Inbound ADT and Orders, Outbound ORU (URL link to the enterprise viewer from Epic).
- Completed study data migration from FUJIFILM Synapse PACS (approximately 75TB data).
- All new studies being archived from FUJIFILM Synapse PACS.

PHASE II - completed

- CGH (Community General Hospital) data integration completed, including script creation to add a prefix to MRN and accession number, auto routing studies to FUJIFILM Synapse PACS and migration of CGH data from Philips PACS to Synapse.
- 1.5 million studies were migrated via the DDM tool to Synapse VNA and exchanged to/from PACS.

PHASE III - next steps

- Migration of Philips Xcelera echo data to FUJIFILM Synapse VNA.
- Currently implementing FUJIFILM Synapse VNA Connext.

For more information, please visit: www.FujifilmSynapseVNA.com

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