

Imaging Workflow Automation Enhances Cardiology Services and Clinical Outreach

Patient outreach is a big part of the services provided by Avera Heart Hospital, a 55 bed cardiac specialty hospital located in Sioux Falls, South Dakota. Avera Heart's core mission is to provide cardiology support services to the growing number of hospitals in the Avera Health network, as well as to surrounding healthcare facilities that service a wide swath of the rural upper Midwest. Avera Heart recently implemented a new Philips Xcelera cardiovascular information system (CVIS) to support centralized reading of all cardiology studies from all the facilities they support both inside and outside Avera Health.



On-Demand Archive Consolidation Strategy

Implementation of the new Xcelera CVIS necessitated that cardiology studies on the old CVIS be consolidated on a new vendor neutral archive (VNA) that will act as the long-term archive for the Xcelera system. Rather than approach this project as a conventional bulk migration that moves all the studies without considering whether they will ever be needed, a novel 'migrate on-demand' consolidation strategy was implemented. This strategy acknowledges that some older studies will never be needed again, whether because patients move away or because they simply do not show up at an Avera facility in the future. Therefore, studies will only be moved as they are needed to enhance ongoing patient care, and the reading of new studies.

To pursue this strategy the Avera Heart IT department implemented the Navigator™ Image Sharing and Retrieval Workflow Manager from Laurel Bridge Software, which uses the Xcelera modality worklist (MWL) to monitor the EMR worklist. When new cardiology exams are scheduled in their Meditech EMR and appear in the Xcelera MWL, Navigator is triggered to check the Xcelera archive and the VNA for historical priors that match the newly scheduled patient. If priors are found that don't already reside on Xcelera or the VNA, Navigator moves the seven most recent studies

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Dan Marnach
Director of Technology
Avera Heart Hospital

acquired within the last five years from their old CVIS to Xcelera, so they can be compared to the newly acquired studies when the case is read. Xcelera then stores all new and historical studies on the VNA. "With over 380,000 exams on our old CVIS, a bulk migration would have been very expensive and time consuming", says Dan Marnach, Director of Technology

at Avera Heart Hospital. "Not only does this migration on-demand strategy enable us to present our clinical team with only the studies they need to care for their patients, but it also eliminates financial waste and improves clinician productivity."

Multi-Site Cardiology Workflow

Because Avera Heart Hospital provides centralized cardiovascular services, their cardiologists read studies that originate from many different locations, inside and outside the Avera Health network. This requires that Avera Heart have a seamless mechanism for ensuring that these cardiology (and sometimes radiology) studies arrive on Xcelera in a timely manner and are matched with the historical priors that may have been pulled from the legacy CVIS. Cardiologists must be able to work on the Xcelera system, confident that they have access to the patient's primary study, as well as all relevant prior studies, regardless of where the prior exams were originally stored.

Compounding this multisite workflow is the fact that radiology studies often accompany these cardiology studies and must be viewed by the cardiologists on a specific subspecialty workstation, depending upon the type of modality. Ensuring all new cardiology and radiology studies are delivered to the proper reading workstation is facilitated by the Compass™ DICOM and HL7 Routing Workflow Manager, also from Laurel Bridge Software. Compass eliminates the need for cardiologists to randomly, and manually, search for studies on multiple workstations and ensures that the needed clinical information is available when and where it is needed. Nick Liesinger, PACS and Network Administrator, notes, "Every little improvement to a physician's workflow improves patient care in some way."

All Avera Health facilities use the same medical record number (MRN), which simplifies the priors fetching process; however, new cardiology studies that originate from facilities outside Avera Health use a different MRN scheme. In these cases, Compass will automatically pre-pend an Avera Health code to the non-Avera MRN to identify where the outside study originated, as well as map the outside MRN to an Avera Health MRN using the Avera Health Master Patient Index (MPI). This has enabled Avera Health to leverage their investment in their MPI and drive additional benefits from the Laurel Bridge solutions.

Solving their unique cardiology imaging workflow challenges has enabled Avera Heart to control costs by minimizing costly IT resources. One PACS Administrator at Avera Heart is now able to centrally manage the ingestion of all medical images from their many modalities and systems into their new CVIS. In addition, the cardiologists at Avera Heart have become more productive as all new and historical comparisons are delivered to a single workstation to review. Dan notes, "The Laurel Bridge portfolio of imaging workflow solutions has enabled the IT department at Avera Heart to significantly improve healthcare quality and reduce costs."

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