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BUILDING CARDIOLOGY CENTERS OF EXCELLENCE



Allen Memorial Hospital Deploys Integrated Cardiovascular Information System to Support Local and Enterprise-wide Initiatives

Iowa Health System Affiliate Implements Cardiology PACS and Structured Reporting, Delivers Remote Access for Physicians, Integrates with EHR and HIS



Allen Memorial Hospital

“This system helps give us the whole picture of cardiac and vascular services because it encompasses everything from data to inventory to images to procedure reports.”

—Paula Geise, RN
Director, Cardiac
and Vascular Services
Allen Memorial Hospital

Highlights

CVIS Implemented in Anticipation of Stark Law Changes. To prepare for Stark Law changes, Allen Memorial Hospital Heart and Vascular Center, Iowa Health System IT and LUMEDX collaborated on an accelerated CVIS implementation that included cardiology PACS, physician structured reporting and a sophisticated integration component.

Customized Reporting to Meet the Needs of Medical Director. The Medical Director and Heart and Vascular Center physicians were involved in ensuring the structured reporting solution corresponded to the clinical workflow. As a result, resistance to adopting a new system was minimal.

Remote Access to Imaging and Structured Reporting Solutions. Physicians can view images and finish reports remotely, thus reducing turnaround time for patient reports.

“Paperless” Cath and Echo Reports. Allen has made report production virtually paperless by using dual monitors to launch studies in CardioPACS from CardioDoc, e-signature to finalize the report, and interfaces to send results to enterprise systems.

Integration with EHR and Hospital Information System. A cold feed interface from Apollo to McKesson Horizon Patient Record and Cath Results Reporting to IDX Carecast result in easily accessible, more comprehensive patient records across the care continuum.

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Allen Memorial Hospital, an Iowa Health System (IHS) affiliate, is a 228-bed, not-for-profit community hospital serving 10 counties in Northeast Iowa. Allen Hospital's Heart and Vascular Center offers a full range of diagnostic, interventional and rehabilitative services, and is the premier provider of cardiovascular (CV) care in the area. In order to develop a centralized, enterprise-wide cardiovascular image and data-management system that meets all clinical and business objectives, Iowa Health System is currently deploying LUMEDX cardiovascular information and imaging solutions at all affiliate medical centers delivering cardiac and vascular care. Allen Memorial Hospital faced a unique set of circumstances—changes to Stark Law regulations that would directly impact imaging workflow—that required they develop an accelerated CVIS implementation plan.

CVIS Implemented in Anticipation of Stark Law Changes

For several years, a private cardiology group had performed echocardiography studies off-campus from the hospital. This cardiology group owned the echo carts. When it became clear that this arrangement might violate upcoming Stark Law changes, Allen purchased the echo carts.

Says Allen's Director of Cardiac and Vascular Services, Paula Geise, RN, "Because of the Stark regulation changes, we needed to move echo and vascular from the off-site setting over to the hospital setting again. To do that we needed our own storage area for images and a methodology for the physicians to do reporting because it no longer could be done on [the private cardiology group's] system. So that was a major issue for our facility in terms of the CVIS implementation—and it was a little different here at Allen than at the other Iowa Health affiliates. So during our IHS conference calls and meetings regarding timelines for implementation, we were always very up-front that our timeline had to work with getting echo back to the hospital quickly."

Iowa Health affiliates' CVIS design varies, but hospitals with larger CV service lines typically install: the Apollo clinical data repository, Clinical Documentation, CardioDoc structured reporting solution, CardioPACS image management system, Modality Worklist, as well as other assorted LUMEDX applications and integration tools. Allen had been using Apollo successfully for registry participation for a number of years; the Stark Law change date determined the CardioPACS installation schedule, with CardioDoc Echo and then Cath following shortly thereafter.

Customized Reporting to Meet the Needs of Medical Director

The Iowa Health approach to LUMEDX implementations—well-planned and well-executed system deployments that include significant local participation—helps ensure minimal disruptions and high user adoption.

At Allen, participation of the medical staff was crucial. "We involved the physicians and echo techs, using their feedback to help work through some of the issues of the project. We needed to determine what the flow would be, how the worklist would show up, and that sort of thing. We wanted to involve them because

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ultimately it would be their workflow, and we had to make sure it made sense to them,” says Paula. LUMEDX customized filters, SmartNotes and the final report based on requests from the Medical Director; these minor adjustments, which took just two days to make, made a big difference in the system’s ease of use.

Involving medical staff in workflow design resulted in a smooth implementation and minimal user resistance. Allen cardiologists and technicians learned how to use the new system quickly. “I believe we have a fairly tech-savvy group of physicians and clinicians here,” Paula says. “And although CardioPACS and CardioDoc were entirely new for them, most everyone was using them right away because the system itself is intuitive.” In fact, after CardioDoc Echo went live, the Medical Director was so enthusiastic that his primary question was how soon they could implement cath. Allen went live CardioDoc Cath just five weeks later.

Remote Access, Paperless Reports

Now that CardioDoc and Cardio PACS are fully implemented, all Allen cardiac echo and cath reports are completed online, electronically signed, and finalized. CardioDoc is linked to CardioPACS, and staff is using the application with dual monitors to read echos and caths at the hospital as well as at the private cardiology office off-campus. A pediatric cardiology

office across town also has access to CardioPACS and CardioDoc via the Web, enabling the pediatric physician to read images and complete reports without making a trip to the hospital or waiting for faxes. Remote access saves time for the physicians and techs, and yields timely, robust reports. The new system also enables virtually paperless report production and distribution.

Integration with Enterprise Systems

A suite of integration tools—including ADT, Orders, Witt Hemodynamic, Echo Measurement, Vascular Measurement and Results Reporting interfaces—automatically import and export critical patient data to and

THE ALLEN HOSPITAL HEART AND VASCULAR CENTER AT A GLANCE

- Two cath labs & dedicated space for a third
 - ◆ Average volume: 1,500/year
- Three echo labs
 - ◆ Average volume: 3,600/year
- Four peripheral vascular labs
 - ◆ Average volume: 900/year
- One EP lab
 - ◆ Average volume: 400/year
- Two nuclear medicine suites
- One interventional procedures lab
- Two stress-testing suites
- Full cardiac rehab facilities
- 24 inpatient rooms
- Space for conferences, staff training and patient overnight visits

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from disparate devices and systems, including the EHR and HIS. Integration makes comprehensive clinical information easily and quickly accessible across the continuum of care. Because the report is automatically exported to McKesson HPR and Carecast, referring and other physicians can easily see a patient's echo or cath results in the EHR almost immediately.

Next Steps

The Heart and Vascular Center continues to introduce innovative technology to the service line. They are currently training their vascular technicians on CardioDoc and are deploying the application for diagnostic cath. Later this year they will implement the EP module, add CardioInventory to automate inventory management, and implement Clinical Manager so they can easily review and analyze data for quality and operational improvement purposes.

"The reason LUMEDX works well for us is that it offers a wide variety of applications and modules for many modalities. This system helps give us the whole picture of cardiac and vascular services because it encompasses everything from data to inventory to images to procedure reports," Paula says. "And it supports our goal, which is to have all our data and images together in one system."

KEY LUMEDX SOLUTIONS AT ALLEN MEMORIAL HOSPITAL

- Apollo Clinical Data Repository
- CardioDoc Physician Structured Reporting for Cath and Echo
- CardioPACS Image Management for Cath, Echo and Peripheral Vascular Diagnostic (PVD)
- Clinical Documentation – Cath
- Witt Hemodynamic Interface
- Results Reporting to Carecast (HIS) and Cold Feed to McKesson HPR (EHR)
- Electronic Signature
- Orders Interface
- Modality Worklist
- ACC-NCDR® CathPCI Registry®
- STS Adult Cardiac Surgery Database

About LUMEDX: With over 600 heart center clients worldwide, LUMEDX is the market leader in fully integrated cardiovascular information and imaging systems and the No. 1 independent integrator of cardiology information solutions. LUMEDX offers the most proven, comprehensive package of clinical information tools, cardiovascular products, and services to help medical institutions enhance quality of patient care, reduce costs, streamline workflow, increase patient volume, and grow revenue.



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