ARKANSAS CHILDREN'S HOSPITAL
Building an IT service center with cloud to deliver improved patient data protection and access

OVERVIEW
Arkansas Children's Hospital (ACH) is the only pediatric medical center in Arkansas and one of the largest in the United States. The private, nonprofit healthcare facility has 370 beds with a staff of approximately 500 physicians.

BUSINESS CHALLENGES
With significant numbers of Medicare eligible patients, ACH faced growing pressure to comply with EMR meaningful use data availability and security requirements specified by the Health Information Technology (HITECH) Act. In addition, a state of Arkansas initiative to move toward a "patient-centered medical home" required ACH to accelerate deployment of computerized physician order entry (CPOE) as part of its MEDITECH electronic health record (EHR) system to enable more integrated care coordination.

After considering several vendors, ACH chose EMC to deliver a complete, trusted IT infrastructure and private cloud to optimize its clinical and administrative applications. Darrell Leonhardt, ACH's senior vice president and chief information officer, explains, "We looked for the best, most reliable storage, virtualization, and data protection technology that was certified for MEDITECH. EMC's integrated solutions combined with its close partnership with MEDITECH made EMC the right choice."

SOLUTIONS
ACH standardized on an EMC infrastructure to support all of the hospital's critical systems. As part of this strategy, ACH deployed EMC® VNX® unified storage configured with a FLASH 1st strategy. FLASH 1st utilizes the EMC FAST™ Suite, consisting of FAST Cache and FAST VP, along with flash and high-capacity disk drives to simultaneously address both active and inactive data cost effectively. Healthcare and business applications, including MEDITECH EHR, DR Systems PACS for radiology, Siemens cardiology PACS, and Kronos Time & Attendance are integrated with VNX and replicated to a second data center with EMC RecoverPoint® remote data protection.

The hospital also uses EMC VMAX® 20K enterprise storage with EMC FAST VP to support its MEDITECH data repository, as well as Microsoft Exchange and Microsoft SQL Server applications.

To optimize its mission-critical applications and provide agility to the environment, ACH is also virtualizing its server infrastructure running MEDITECH and other applications with VMware® vSphere™. In addition, ACH has rolled out 1,200 VMware Horizon View™ virtual desktops for mobile and computer on wheels (COWS) devices using desktop single sign-on provided by Imprivata.

ESSENTIALS
Industry
Healthcare

Company Size
4,400 employees

Business Challenges
- Increased demand for more integrated care coordination
- EMR meaningful use requiring stronger data security, protection, and availability

Solutions
- EMC VMAX 20K
- EMC VNX unified storage
- EMC FAST Suite
- EMC Avamar
- EMC Data Domain
- EMC NetWorker
- EMC Isilon scale-out storage
- EMC RecoverPoint
- VMware vSphere
- VMware Horizon View
- MEDITECH EMR, DR Systems Radiology PACS, Siemens Cardiology PACS, Microsoft Exchange, Microsoft SQL Server, Kronos Time & Attendance

CUSTOMER PROFILE
Results

- Improved MEDITECH availability and performance
- Reduced desktop login time from two minutes to 30 seconds
- Shrunk data backup times from 24 to eight hours
- Restored backup information for internal customers in less than 15 minutes
- Decreased time IT spends on break/fix operations

To protect its virtualized environment, ACH relies on EMC Avamar® deduplication software and system. ACH also backs up VMAX to EMC Data Domain® deduplication storage systems. Avamar and Data Domain are both replicated to the hospital’s second on-campus site. The hospital’s MEDITECH EMR data is being protected with EMC NetWorker® Module for MEDITECH and Data Domain.

ACH is migrating PACS images from its legacy EMC archives to EMC Isilon® scale-out storage, which also will serve as the main repository for Big Data.

STANDARDIZATION MAXIMIZES EFFICIENCY AND RELIABILITY

By standardizing on EMC, ACH has maximized efficiency through tight integration between hardware and software across the storage and data protection environments. Standardization also simplifies IT management and support.

Rod Smith, ACH’s vice president of Information Technology Operations, says, "Standardizing on EMC allows our staff to become experts on one set of systems and interfaces. If we need support, there's just one number to call and no finger pointing."

Leonhardt adds, "The integration between EMC products eliminates the interoperability problems that occur when using multiple vendors. So clinicians can count on MEDITECH delivering excellent response times and reliability day or night."

PRIVATE CLOUD FOR CRITICAL EHR APPLICATIONS

Another benefit is EMC and VMware integration, which enables ACH to build out a private cloud for securely sharing electronic records and improving coordination of care.

"The excellent integration between EMC and VMware products is helping accelerate virtualization across the hospital," notes Smith. "Through virtualization, we've reduced our data center footprint and lowered our power and cooling costs significantly."

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Darrell Leonhardt
Senior Vice President and Chief Information Officer at Arkansas Children's Hospital

"This well-run private cloud has optimized MEDITECH performance and allowed ACH's IT team to deliver advanced data services back to the business," Leonhardt remarks. "EMC has the expertise and close partnership with MEDITECH to help us adopt the latest private cloud technologies."

In addition, by converting from traditional computers on wheels (COWs) to zero clients and mobile devices running virtual desktops, physicians and nurses are able to login and access patient charts and medical records faster.

"Before, it took almost two minutes to log into a standard desktop," says Smith. "Now it takes 30 seconds or less. Clinicians also can move to another hospital and resume their session in less than ten seconds."

With 75 clinics across a large state that often uses helicopters to transport sick children to the main hospital, ACH is relying on initiatives like virtual desktops to help clinicians respond even more quickly in life-critical situations.
Smith adds, "My staff used to spend 70 to 80 percent of its time fixing PCs. With virtual desktops, we've seen a significant drop in trouble calls. And there's more time to concentrate on strategic projects for the hospital."

**DELIVERING TRUSTED IT FOR PATIENT INFORMATION**

With EMC, ACH has a trusted IT environment for MEDITECH and other patient care systems, which is essential to complying with HIPAA and HITECH regulations for security and data protection. One vital measure the hospital has taken is to encrypt all laptops to prevent unauthorized access to private data. EMC Consulting and EMC partner, Redspin, also are conducting a risk assessment to validate ACH’s HIPAA compliance status.

"The risk assessment will reveal any potential gaps in our security and data protection strategies so they can be addressed to ensure compliance," Leonhardt remarks.

EMC backup and recovery solutions have also strengthened data protection. For example, since moving from tape to Avamar and Data Domain systems, backup times have been reduced from 24 to eight hours. This allows for quick backup restoration for internal customers in less than 15 minutes, thanks to Data Domain and the NetWorker Module for MEDITECH.

"With tape, getting all the information backed up in a timely manner was difficult," notes Smith. "Now we complete backups with no issues and recover MEDITECH much more reliably, which is critical for compliance."

Looking forward, ACH is evaluating EMC VPLEX® to enable instant data center recovery and virtually eliminate the risk of MEDITECH downtime.