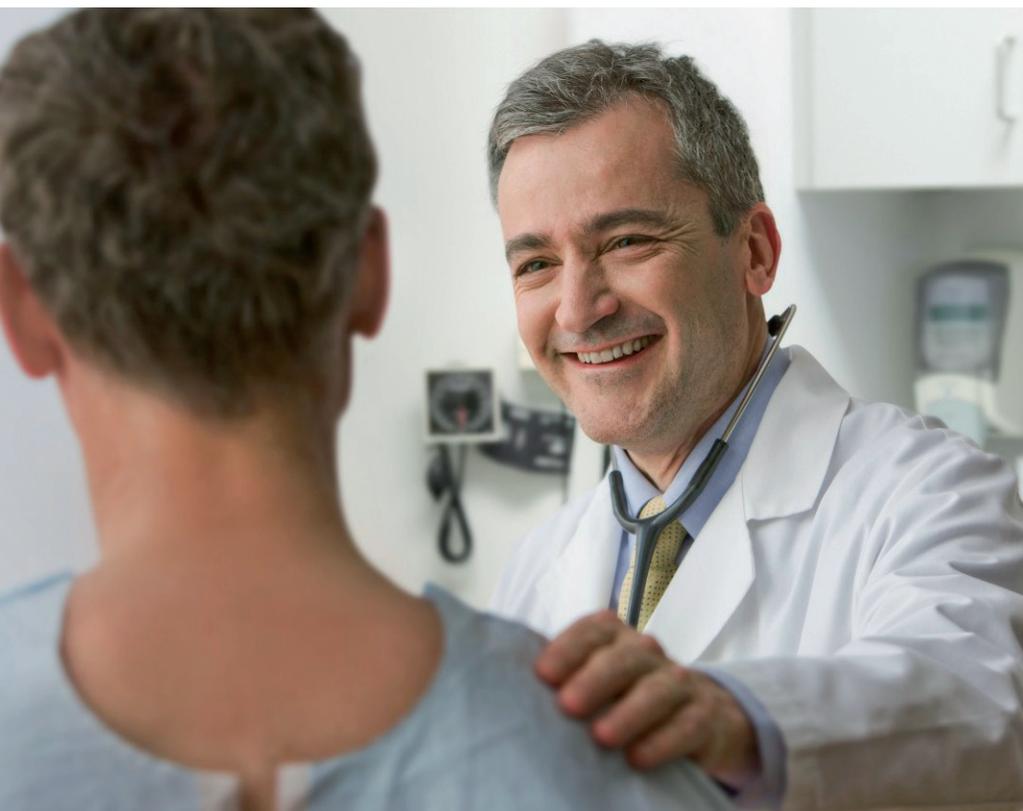




Providing better healthcare with simplified data access

Centegra Health System migrates disparate files to a central archive to achieve increased uptime, free itself from proprietary file restrictions and eliminate forklift upgrades



“Once we worked through the security component and established redundancy to ensure high availability, we embraced the web-based Dell Unified Clinical Archive. It’s the wave of the future because it offers lower cost.”

David Tomlinson, Chief Information Officer, Centegra Health System

Customer profile



Company	Centegra Health System
Industry	Healthcare
Country	United States
Employees	3,700
Website	www.centegra.org

Business need

To boost patient care, avoid cyclical data migrations, achieve disaster recovery, and gain agility, Centegra sought a highly flexible and scalable solution for data management and archiving.

Solution

Centegra is implementing a unified archive based on Dell™ solutions and services. It gives unlimited scalability and includes an application-neutral onsite archive that replicates data to the cloud.

Benefits

- Centegra boosts patient care, service levels and efficiency by simplifying data access
- Staff can view patient information with high reliability
- Organization saves money by avoiding data migrations and forklift upgrades
- Centegra increases agility by breaking free of proprietary file constraints
- Hospital enjoys seamless transition to new data archive

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Centegra Health System is recognized by Thomson Reuters, Healthgrades and Modern Healthcare magazine as one of the nation's best healthcare systems. Delivering award-winning care requires cutting-edge diagnostic equipment and reliably fast, round-the-clock data access. To meet these challenges, Centegra desired to update its storage solution to improve agility, simplify file access, provide disaster recovery and contain costs at its two hospitals in northwest Illinois.

"We gain control over storage costs and avoid future data migration costs by centralizing our data in the cloud with the Dell Unified Clinical Archive."

David Tomlinson, Chief Information Officer, Centegra Health System

Managing 50 terabytes of disparate information had become a significant challenge for Centegra because storage requirements and proprietary file formats were hindering efficiency and driving up costs. The hospital performs 225,000 diagnostic studies each year using multiple picture archiving and communication systems (PACS). PENRAD mammography images are routed through a DR Systems Unity PACS solution. In addition, clinicians use the GE Cardiovascular Information System. While some of Centegra's PACS store images (or patient studies) in the Digital Imaging and Communications in Medicine format, others use proprietary files. In addition, the hospital's health information system, which records patient data, stores information in yet another format known as Health Level 7.

To handle file variations, Centegra used numerous standalone storage solutions. This meant that medical staff had to spend extra time using multiple systems to access different types of patient data. Clinicians also had to frequently share information using paper, CD-ROMs and film — which slowed efficiency. Centegra's agility was also limited because it could not easily adopt emerging diagnostic tools or switch solutions. Changes to medical systems would involve new file formats and require costly and time-consuming data migration and integration processes.

Hospital's modern storage arrays could not keep pace with growth and change

The hospital's image repository kept expanding at rapid, unpredictable rates,

and IT personnel devoted significant time managing data availability. To minimize issues, Centegra always purchased more storage than it needed but data was expanding so rapidly that IT staff did not always have the space to replicate or back up files. John Heinrich, Director of Diagnostic and Oncology Services at Centegra Health System, says, "We previously used a mirrored archive solution with two storage arrays at separate locations. Within a short time we were running out of space and had to stop mirroring and backups just so we had room for the primary files. This put us at risk of losing data access in the event of a hardware failure or a disaster."

Centegra could not easily add storage since the older technology was not scalable and periodically required a major forklift upgrade and associated data migration. David Tomlinson, Chief Information Officer at Centegra Health System, says, "Our storage model required us to keep buying, upgrading and replacing new boxes about every five years as our systems evolved

Technology at work

Services

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Software

[Dell Cloud Clinical Archive software](#)



and grew. We decided to adopt an expandable model so we could buy only the storage that we required today versus sizing arrays to meet our projected needs tomorrow.”

IT staff minimize costs by avoiding data migrations and forklift upgrades

To keep more time and money available for medical innovation, Centegra turned to Dell for help as a trusted advisor to overcome the limitations of its disparate tools, enhance agility and manage the IT infrastructure including the help desk. Dell Managed Services consultants worked with Centegra to redesign its storage infrastructure using the Dell™ Unified Clinical Archive. The solution is based on the Dell Cloud Clinical Archive, the industry’s largest vendor-neutral hybrid cloud solution for medical imaging, which has supported customers for more than 12 years. “We evaluated our options objectively and developed the best solution plan by working with Dell Managed Services,” Tomlinson says. “We gain control over storage costs and avoid future data migrations by centralizing our data in the cloud with the Dell Unified Clinical Archive.” Centegra now pays a one-time fee to store each study. Dell Managed Services updates the underlying architecture as necessary to meet changing requirements. As a result, Centegra gains unlimited data scalability, makes storage costs more predictable and eliminates forklift hardware replacements.

Customized slightly for each customer, the Dell Unified Clinical Archive framework that Centegra uses includes a vendor-neutral hybrid cloud with an on-site cache and offsite storage using the Dell Cloud Clinical Archive. The on-site cache standardizes and stores images from the past three years on a Dell managed infrastructure including servers, storage and network switches. The infrastructure provides high availability for recently created and frequently accessed patient studies. Two copies of every image are also stored in the Dell

Cloud Clinical Archive and are accessible from the on-premises cache as needed. Historical images are being migrated to the cloud at a one-time expense that includes converting data into an application-neutral format and archiving it for life.

Centegra increases agility by breaking free of proprietary file constraints

Today, hospital executives can shift their focus away from IT concerns and concentrate on how to provide the best patient care. “Having a consolidated database of our clinical images puts us in a very good position to easily adapt to change and remain agile,” says Tomlinson. “The Dell Unified Clinical Archive gives us that flexibility to share information when appropriate and within our strategy.” One reason Centegra chose the Dell Unified Clinical Archive is that it offers a demonstrated track record of managing disparate medical formats. The solution protects billions of images from diverse modalities for millions of patients in a secured cloud archive. The solution’s agility was also important, says Heinrich, “If we ever want to change our PACS solution, we now have the flexibility to do so with the Dell Unified Clinical Archive. It offers true vendor neutrality.”

Staff can access patient data with high reliability

To provide excellent services, healthcare providers need access to patients’ files at any time, regardless of power outages or IT issues. By engaging Dell Managed Services and using the Dell Unified Clinical Archive, Centegra achieves mission-critical availability and disaster recovery. Tomlinson explains that it took some time before the organization was ready to replace its in-house storage with an outsourced cloud solution. “Our first concern with using the cloud was security and our second was about backups. How would we access information if our connections went down? Once we worked through the security component and established redundancy to ensure high availability,

“If we ever want to change our PACS solution, we now have the flexibility to do so with the Dell Unified Clinical Archive.”

John Heinrich, Director of Diagnostic and Oncology Services, Centegra Health System



we embraced the Dell Unified Clinical Archive. It's the wave of the future because it offers lower cost points and lower total cost of ownership." A copy of each study resides in two physically distant data centers. In addition, these data centers are ISO13485:2003 certified and are continuously monitored by Dell SecureWorks advanced security and monitoring services.

Centegra boosts care, service levels and efficiency by simplifying data access

Clinicians can now spend more time focusing on patients because accessing images takes less effort. Authorized employees and clinical applications simply view data stored in the Dell Unified Clinical Archive through the Dell Intelligent Management Gateway.

By streamlining data access, the hospital can also increase collaboration with partners and boost service levels by phasing out data-sharing processes that involve paper, CD-ROMs and film. Tomlinson explains, "We're building a foundation with the Dell Unified Clinical Archive so that we can easily share health information globally. This includes tying into health information exchanges and meeting international regulatory requirements." For example, the Dell solution addresses HIPAA regulations and facilitates image integration with other clinical applications such as electronic health records (EHR), as mandated under Stage 2 of the Medicare EHR Meaningful Use requirements.

IT personnel also have more time to devote to implementing other innovative solutions that can help boost employee efficiency. For example, clinicians will

soon be able to view data from any location using mobile devices so that they can more easily consult with other employees and patients. "We gain a lot of flexibility with the Dell Unified Clinical Archive because our data becomes device-agnostic, making it possible for clinicians and patients to eventually access images with any mobile device," says Tomlinson. "We're still establishing our strategy on a bring-your-own-device policy, but with the help of Dell solutions and services we are well positioned to move forward with it."

Hospital enjoys seamless transition to the new managed data archive

To migrate 50 terabytes of disparate studies to the cloud without disrupting patient care or hindering employee efficiency, Centegra engaged Dell Managed Services. Tomlinson says, "We're migrating all of the data over our network and it's planned appropriately so there's no interruption to our day-to-day operations or network performance. The whole process is going so well, I have to remind myself to follow up with our consultants and ask how it's going." He also values having Dell as a strategic partner. "We have a very open, collaborative relationship with our consultants, which is why we consider Dell a trusted advisor in reaching our long-term goals. We also now have peace of mind in knowing that we have the flexible infrastructure needed to meet the daily needs of our organization. By depending on Dell Managed Services, Centegra employees can focus on our core mission of providing the highest quality services for our patients, our staff and the community."

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David Tomlinson, Chief Information Officer, Centegra Health System

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