



About Cincinnati Children's Hospital Medical Center

- A Nonprofit, 600 bed academic medical center
- 1.2 million patients
- Established in 1883; One of the oldest and most distinguished pediatric hospitals in the US
- Provides comprehensive clinical services, from treatment of rare and complex conditions to well-child care

Challenges

Limited long-term image storage for contingency system

No true disaster recovery process for full-fidelity images

No documentation for ultrasound studies, preventing billing for imaging procedure

Success

Long term image storage beyond radiology, including cardiology

Allows referring providers to submit images through the intelligent DICOM pathway to be automatically archived

True business continuance with disaster recovery

Smooth integration with other vendors' systems

Leading children's hospital shares its recipe for an enterprise imaging strategy

Cincinnati Children's Hospital Medical Center, Cincinnati, OH

Over the last few years, Cincinnati Children's Hospital Medical Center's (CCHMC) enterprise imaging strategy has been simmering. After starting with radiology and cardiology, the hospital is preparing to add images from across all 'ologies and fully bring its enterprise archive to a boil.

It's been a deliberate process, but Jay Moskovitz, technical specialist and PACS administrator at CCHMC, says that's because such complicated change takes time to get right. "We'd rather get it right than have it out there and have images going to the wrong place or not accessible."

The strategy at CCHMC centers on the vendor neutral archive, IBM iConnect® Enterprise Archive. A Merge PACS™ user since 2010, CCHMC has a long working history with Watson Health Imaging, even before its 2008 PACS purchase.

Moskovitz explains there were several goals the hospital had in mind when launching this process.

True disaster recovery

Prior to going live with IBM iConnect Enterprise Archive, CCHMC had long-term storage for images, but the storage was limited in terms of serving as a contingency system. “We really had no redundancy at all for images,” says Moskovitz, explaining that all the studies were online, but saved with lossy compression, not a true disaster recovery process for full-fidelity images.

Now, the hospital has replicated hardware at an off-site disaster recovery data center. The data center has the same hardware configuration as the production environment. “If something happened to one of the redundant nodes, there’s one off-site to take over for it,” says Moskovitz.

Everything on the production enterprise archive is automatically reconciled with the disaster recovery site, offering true business continuance in exceptional situations. Merge PACS offers an integrated mode that communicates exclusively with the enterprise archive for images. Whenever the hospital switches over to the contingency server, the exact full dataset of studies will be replicated.

“What’s cool about the Merge PACS system is that all the statuses or anything you do to the study can be sent from the production PACS out to the contingency PACS,” says Moskovitz.

Leveraging an F5 content switch in front of the PACS, the hospital can easily switch traffic out to the contingency PACS server without the end user even knowing, a handy solution when IT wants to apply monthly security patches.

Beyond radiology

The enterprise archive began in radiology, and within the last year has taken over long-term storage for cardiology too. But CCHMC isn’t stopping there. The hospital is starting to use the archive for point-of-care ultrasound studies from rheumatology and anesthesia, and will look to expand the archive even further as staff get a better handle on workflows.

Alex J. Towbin, MD, CCHMC radiologist and the Neil D. Johnson chair of radiology informatics, underscores the importance of an enterprise imaging strategy that allows providers to see all of the images obtained for a patient, no matter where the images originated.

“This means that for the first time, all providers can see what is ailing their patients and apply their specialized knowledge to providing care in a more holistic manner,” says Towbin.

It’s no coincidence that the first step outside of radiology was cardiology. “DICOM is just easier to manage,” says Moskovitz. “There’s a much better workflow structure to DICOM, making sure you have all the right data elements... Our place is very conscious about workflow and what makes sense in integrating with the EMR to make everything work well for the end users.”

Since point-of-care ultrasounds are not order-driven, prior to the enterprise archive, these studies couldn’t be billed for as there was no documentation for the imaging. Now, however, instead of sitting on a local system, the studies are sent to the enterprise archive where the procedure can be documented and billed.

Next ‘ology on the list? CCHMC is in the planning stage to bring in dermatology and other departments using standard photography, such as surgical images. The software and tools are all there, though Moskovitz says the hospital is working closely with Watson Health Imaging to navigate the challenging process.

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Cincinnati Children’s Hospital Medical Center

So far, there have been no major issues integrating with other vendors’ systems, such as cardiology. For non-DICOM images, the hospital is opting for a strategy that leverages a DICOM-wrapper for jpegs and other image formats, thus allowing the PACS viewer to see those images.

Excellence in pediatric care

CCHMC has high standards for care that are clearly reflected in its choice of technology. The hospital is consistently ranked among the best, landing on the Honor Roll in the latest U.S. News & World Report survey of children’s hospitals. CCHMC attracts patients from all 50 states and across the world, and also has a dedication to clinical research.

One special consideration for a leading children’s hospital is regulation on storing records for extended periods. Moskovitz says CCHMC follows the rule of holding on to images for seven years after the patient turns 21, though in reality, the hospital has not yet had the need to do a controlled delete of old studies to clear up space, says Moskovitz. With IBM iConnect Enterprise Archive, CCHMC has the ability to conduct policy-based deletion of images.

CCHMC’s status as a leader in care means that more than 30,000 studies are imported from outside centers each year. While previously this meant the patients themselves brought

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images in on CD, the hospital is now using the IBM iConnect® Access image sharing solution. This intelligent DICOM pathway allows referrers to submit images, which are then automatically archived.

Plans for the future

Looking ahead, Moskovitz says CCHMC plans to extend the IBM iConnect Access viewer, which is live in radiology, across the enterprise. This zero-footprint viewer requires no client to be installed, a major relief at a facility with some 14,000 computers that would need to be upgraded with any software updates. The beauty of IBM iConnect Access is the ability to run the system on anything, including mobile devices, which was important to us,” says Moskovitz.

As far as advice for other sites that might have a similar project in their future, Moskovitz recommends working with a vendor using a standards-based approach and technology that’s open and adaptable to future change. Open dialogue with technology partners is essential, and CCHMC holds biweekly calls with the enterprise archive team and Watson Health Imaging.

“Implementing an enterprise imaging strategy has a lot of moving parts, and it’s not easy to get it right. Merge has been an invaluable partner in this process. We couldn’t have done it without them.” says Moskovitz.

**These solutions are not FDA cleared for diagnostic use on mobile devices.*

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Solution components

IBM iConnect® Enterprise Archive

IBM iConnect® Access

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About Watson Health Imaging
Watson Health Imaging, a segment of IBM Watson Health, is a leading provider of innovative artificial intelligence, enterprise imaging and interoperability solutions that seek to advance healthcare. Its Merge branded enterprise imaging solutions facilitate the management, sharing and storage of billions of patient medical images.

With solutions that have been used by providers for more than 25 years, Watson Health Imaging is helping to reduce costs, improve efficiencies and enhance the quality of healthcare worldwide.

