

University of Chicago Hospitals and Health System



EMC storage solutions help improve patient safety and care while reducing operational costs

Considered one of the top 15 healthcare organizations in the U.S., The University of Chicago Hospitals and Health System (UCHHS) has been at the forefront of medicine for more than 75 years—delivering extraordinary care to patients from all parts of the world.

UCHHS is the primary affiliate of the nationally renowned University of Chicago Pritzker School of Medicine. The Hospitals and Health System is anchored by four facilities in the historic Hyde Park neighborhood of Chicago: Bernard A. Mitchell Hospital, Chicago Lying-in Hospital, a maternity and women's healthcare facility, the University of Chicago Comer Children's Hospital, and the Duchossois Center for Advanced Medicine. These serve as vital community resources as well as local, national, and international referral destinations. The system also includes physicians' offices in several Chicago locations, the south suburbs, and northwestern Indiana; three dialysis centers; and affiliations with hospitals including a teaching relationship with MacNeal Hospital and close ties to LaRabida Children's Hospital.

Having undertaken a year-long planning process, the healthcare system wanted to fundamentally change how its doctors and nurses managed health care information and costs. One strategy identified to support this transformation was focused on managing the healthcare system's data resources. The strategy included an upgrade of UCHHS' direct-attached storage-to-server environment to make data highly available, yet protected and easier to manage.

A powerful EMC® tiered storage infrastructure complemented by advanced EMC business continuity and management software was chosen by UCHHS to help achieve its goals.

“Our clinical staff’s time must be used efficiently,” says Dr. Jonathan Silverstein director of UCHHS’ Center for Clinical Information and Assistant Professor of Surgery at the University. “Nurses, in particular, are in short supply, and we have to make their work as efficient as possible. With effective, reliable IT deployments, our staff can communicate much better and access information from one source, which saves a lot of time.”

“By employing a tiered storage model using lower-cost equipment where we need less performance, versus having everything on very expensive high-speed disk, we now have a more cost-effective way of managing data. By pooling and aggregating our storage, we have been able to benefit from very high utilization.”

Eric Yablonka

Vice President and Chief Information Officer

EMC’s programs fit well with the IT organization’s philosophy in building long-standing relationships with a few key vendors capable of providing comprehensive, proven solution portfolios that drive IT value. EMC offers UCHHS a full line of industry best-practice integrated information management solutions to help enable improved patient safety, provide better quality of care, and attract the best nurses and physicians in the country with highly efficient, state-of-the-art clinical systems.

“It’s not just selling technology for technology’s sake,” says Todd Hollowell, UCHHS director of Information Technology. “EMC came to our table knowing our business and understanding our mission and our vision. They have helped us implement solutions that enable our clinicians to access information anytime and anywhere at much faster speeds than they could in the past.”

Tiered storage addresses differing needs, reduces costs

UCHHS’ tiered storage infrastructure, which includes EMC Symmetrix® DMX, EMC CLARiiON® CX, and EMC Centera™ content-addressed storage systems, consistently and cost-efficiently meets a variety of application service-level requirements. It has also enabled UCHHS to better manage its costs and resources by supporting data management based on factors such as business value, age, and volume.

High-end Symmetrix DMX™ storage addresses the needs of the organization’s mission-critical applications in high-volume environments that require the best possible I/O throughput and non-stop information accessibility. Applications supported by Symmetrix DMX include those for pharmacy, radiology, Oracle, and Microsoft Exchange. Information generated by a new clinical system from Epic Systems Corporation, which is currently being installed, will also reside on Symmetrix DMX, as will Human Resources and self-service applications.

EMC ControlCenter® products, StorageScope™ and Symmetrix Optimizer, play key roles in streamlining storage resource and device management within UCHHS’ Symmetrix DMX environment. Providing centralized monitoring and reporting functionality, StorageScope allows UCHHS to easily track its storage resources to understand how they are being used and by whom. With this information, UCHHS can optimize storage utilization and more accurately plan for future needs. Symmetrix Optimizer’s automated device management functionalities enable UCHHS to optimize Symmetrix DMX performance through non-disruptive tuning and data placement based on UCHHS-specified parameters.

“ControlCenter lets us drill down and look at things in one picture. It’s nice to have it all under one roof,” says Cameron Molloy, Manager of Technical Services. “I also like that you can just turn on Symmetrix Optimizer and it will move data around to non-hot disks by itself without any problems.”

UCHHS’ mid-tier platform, EMC CLARiiON CX storage, is used to store echocardiogram and GI images and video as well as data for various business applications for easy online access. EMC CLARiiON storage is ideal for meeting the service-level requirements of these applications while helping UCHHS lower operating costs through the use of a cost-efficient platform. EMC Navisphere® software is used within the EMC CLARiiON environment to support streamlined management.

A welcome replacement for optical archives, EMC Centera provides economical online storage and easy access to information that needs to be retained long term. This includes images from UCHHS’ Philips echocardiogram application and Microsoft Exchange e-mail. With EMC Centera, making multiple copies of opticals and storing them offsite is now a thing of the past, and so is the worry that vital data could be lost through mislaid or damaged opticals.

Supported by EMC DiskXtender®, which uses UCHHS-specified parameters to automatically move data to the platform after a period of time, EMC Centera allows for better availability than a juke box because archives are easily accessed online.

Previously, if a physician wanted to see a study, and the optical disk containing the study was not in the jukebox because of the limit in size, it would be necessary to track down the date that the study was put into the juke box to find that particular file for the physician. The retrieval process often took a long time. With EMC Centera, a simple query now delivers an almost immediate result.

EMC Documentum® technology will soon be deployed to augment EMC Centera archives and allow for even better records management and patient care. Using Documentum functionality, UCHHS plans to create bar codes to ensure that new information on a patient always goes into the correct file. It will also be used to support auditing functionality to ensure information access is on a need-to-know basis to comply with HIPAA regulations. In addition, plans are being made to integrate Documentum with both the enterprise clinical system and revenue cycle systems. This will allow physicians better access to the information they need to make decisions about care and staff to improve revenue cycle results.

“We want to provide doctors with a single query tool that they can use to quickly and accurately access all of a patient’s information, and we are trying to make it as precise as possible,” says Molloy.

An EMC tiered storage infrastructure with its high-performance disk storage, online archives, and resulting time and money savings has changed how UCHHS manages and operates its IT business for the better.

“By employing a tiered storage model using lower-cost equipment where we need less performance, versus having everything on very expensive high-speed disk, we now have a more cost-effective way of managing data,” says Eric Yablonka, vice president and chief information officer. “By pooling and aggregating our storage, we have been able to benefit from very high utilization.”

Targeting 99.999 availability

Within its EMC tiered storage environment, UCHHS is employing EMC TimeFinder® and EMC Legato® backup solutions, as well as EMC Symmetrix Remote Data Facility/Asynchronous (SRDF®/A) recovery software, to help meet its goal of five-nines availability. In addition to ensuring that data is highly accessible to UCHHS clinicians, these solutions are also helping to reduce backup and recovery costs.

“We are working with EMC to engineer our infrastructure such that we can back up our data to disk and have quick recovery times, while also leveraging our two data centers to provide rapid disaster recovery capabilities if necessary,” says Yablonka. “We’re very excited about our ability to make that happen.”

Replacing multiple tape-based backup solutions, EMC TimeFinder, along with EMC Legato software, now provides a standardized backup-to-disk solution that can be managed by one or two people. Through this advanced solution, point-in-time copies of mission-critical data residing within EMC Symmetrix DMX storage are created and stored on economical EMC CLARiiON-based ATA drives. Retrieval, if required, is a quick and easy process.

“Our staff’s productivity has gone up—they can now do things faster,” says Hollowell.

“We’ve found this solution to be much easier than trying to learn a new set of tools for different servers. And in terms of backup times, the improvements are incredible compared with what we were doing with tape backups.”

Quick recoverability in the case of disaster is supported by SRDF/A software, which allows UCHHS to perform asynchronous replication between a small data center on site and its primary data center 35 miles away—without disruption to users.

“We have looked at the level of recovery that we need for the clinical system and we believe that it can’t be more than a few minutes,” says Yablonka. “On the ERP side, we believe that we can sustain a slightly longer recovery time, but we also know that we cannot order medical supplies with a minimal inventory position if we have a very time-consuming manual backup process. So recoverability is very important to us.”

The best patient care possible

It is critical to patient care that all information—from laboratory to cardiology—is continuously and rapidly accessible. For UCHHS, the value of immediate access to all hospital information cannot be overstated in safe patient-care decision making.

By replacing disparate silo solutions with a common infrastructure between two data centers, UCHHS is better positioned to provide clinicians with the necessary information to deliver the best care possible.

“As a surgeon, I’ve experienced a number of situations in which timely information is critical,” says Silverstein. “For example, in an emergency, in order to make a decision on what type of anesthesia a patient’s heart can tolerate, there’s no better tool than the ability to compare an old EKG to a new one. In such an instance, the ability to quickly access a stored document can have a profound impact on our decision making. EMC solutions have allowed us to store essentially unlimited quantities of information and have it available on an immediate basis.”



EMC Corporation
Hopkinton
Massachusetts
01748-9103
1-508-435-1000
In North America 1-866-464-7381

EMC², EMC, EMC ControlCenter, CLARiiON, DiskXtender, Documentum, Legato, Navisphere, SRDF, Symmetrix, TimeFinder, and where information lives are registered trademarks and Centera, StorageScope, and Symmetrix DMX are trademarks of EMC Corporation. All other trademarks used herein are the property of their respective owners.

© Copyright 2005 EMC Corporation.
All rights reserved. Produced in the USA. 7/05

Customer Profile
H1748