Harris Health System delivers critical value to patients

IBM System Storage and software solutions provide a smarter approach to managing rapidly growing data

Overview

The need

Harris Health System needed to improve patient care with better access to data and applications and faster storage performance for its critical healthcare environments.

The solution

Harris Health System deployed the IBM® Storwize® V7000 storage system, IBM System Storage® Easy Tier® technology and IBM Power Systems™ servers.

The benefit

Harris Health System achieved a 25 to 30 percent performance improvement at the end-user level, enabling staff to spend less time on computers and more time caring for patients.

Established in 1965, Harris Health System serves the county-wide metropolitan area of Houston, Texas with some 50 locations that include three hospitals with approximately 1,000 beds, Level 1 and Level 3 trauma centers, clinics, and community health centers. With 1.7 million ambulatory visits a year and the majority of its patients uninsured, Harris Health System is especially cost and efficiency conscious in an effort to maximize the availability of healthcare services funded by the taxpayers of Harris County.

With its size and volume, Harris Health System was struggling to be flexible in meeting the needs of its patients first and foremost, but also in addressing regulatory changes and other operational functions. By upgrading its storage system, Harris Health System can now provide universal, cost-effective, efficient and extremely fast access to applications, data and medical records. This has been revolutionary for its 3,400 physicians and 5,000 clinical and administrative users. “We’ve taken a journey from probably worst to first,” says Tim Tindle, Harris Health System executive vice president and chief information officer, describing the role technology played in improving patient care and hospital operations.

Meeting the challenges of growing data

The hospital began its modernization in 2004 with the addition of an enterprise resource planning (ERP) system to handle financial operations, supply chain, human resources and other administrative functions. Harris Health System immediately began seeing benefits. The supply chain’s procure-to-pay cycle, for example, shrank from 140 days to 34 hours, winning the Hospitals & Health Networks Innovation Award and putting Harris Health System on the path to ongoing technical advancement.

"Everyone is spending less time with the computer and more time with our patients."

—Tim Tindle, executive vice president/chief information officer, Harris Health System

The subsequent adoption of the Epic Systems, Inc. suite of products—which handles inpatient and ambulatory electronic medical records as well as scheduling, patient accounting, and management of operating rooms, laboratories and radiology—led to an integrated clinical and administrative management approach. This approach contributed to Harris Health System twice receiving the Most Wired Award from Hospitals & Health Networks magazine.

However, the technology adopted to that point had not been a cure-all—for while the use of electronic records and other digital functions increased, the growing number of users and transaction volumes created poor system performance. Harris Health System ambulatory pharmacies were experiencing slow transaction processing, adding an estimated 30 seconds to the time it took to fill a prescription. "With 16 pharmacies across the county filling more than 2.5 million prescriptions annually, the wait times in our pharmacies became unacceptable," says Tindle.

Relieving bottlenecks with tiered storage

The answer lay in IBM storage solutions implemented with the help of IBM and IBM Business Partner Mark 3 Systems of Houston—and in the storage tiering strategy and performance improvements the IBM solutions made possible. With data increasing at an estimated 50 percent annually, and data and applications mixed almost randomly on storage with little regard to usage needs, access times were becoming increasingly slow.

To relieve bottlenecks, Harris Health System now leverages a Storwize V7000 with SSD drives. Response times, noted Will Aymond, Harris Health System IT lead, architecture and systems, immediately dropped from an average of more than 30 ms to less than 1 ms. "Those don't sound like big numbers," he explains, "but in the context of 700,000 operations per second, several milliseconds can make a huge difference."

It wasn't long, in fact, before people did notice—and IT began receiving notes like this one from a clinical coding reimbursement compliance manager: "Doggone if these ad-hoc account query reports run fast in Epic now. I may have died and gone to heaven. Many thanks to whoever did this."

Solution components

Hardware
- IBM® Storwize® V7000
- IBM Power Systems™

Software
- IBM System Storage® Easy Tier®

IBM Business Partner
- Mark 3 Systems

Improving patient care with IT performance

The implementation, which featured the Storwize V7000 storage system and Power Systems servers, produced tangible benefits for both IT and end users.

"We have seen between a 25 and 30 percent performance improvement at the user level," explains Tindle, "and we've seen backups that used to take 12 hours reduced to 30 to 40 minutes. Also, our night production runs—which extract out production data into other databases—previously took 10 or 11 hours, but now take less than an hour." And those pharmacy transaction times? The new system has reduced the 30-second transaction times down to just five seconds per transaction—a significant difference.

In healthcare environments, it's nearly impossible to separate IT and end-user benefits. The Storwize V7000 allows continuous data and application availability for clinical functions. In a hospital system such as Harris Health System, with high levels of critically ill and injured patients requiring services such as portable x-rays in the emergency room or split-second decision making and immediate transport to the operating room, availability is of the essence. "These systems have become critical for life safety," says Tindle.

"What it means is that from the time patients hit the door until the time they leave, there are people and computer systems that track where they are and provide and capture critical data in order to save lives. Now everyone is spending less time with the computer and more time with our patients."

Moving ahead with still greater benefits

Improvement is an ongoing process for the healthcare industry. In moving to a smarter storage approach, the next planned step for Harris Health System is to add System Storage Easy Tier technology to continue improving disk response and availability. Harris Health System is also sharing its technology base across the Houston community—exchanging medical records with other institutions, including Federally Qualified Health Centers, county mental health facilities, jails and other providers.

As for Harris Health System itself, Tindle sums up the results for an equally wide-ranging community: "Every single nurse, doctor, registration person, respiratory therapist, radiologist, radiology tech, laboratory specialist—every single person attached to the clinical, administrative or diagnostic role in this organization—has benefitted."

For more information

Contact your IBM representative or IBM Business Partner, or visit us at: **ibm.com**/storage

For more information about IBM Premier Business Partner Mark 3 Systems, visit: markiiisys.com

For more information about Harris Health System, visit: harrishealth.org

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