Hennepin County Medical Center leverages Citrix mobility solution to improve patient care

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Kevin Murphy,
IT Director of Infrastructure

Hennepin County Medical Center (HCMC) is Minnesota's premier, Level-1 Adult Trauma Center and Level-1 Pediatric Trauma Center. It is also considered to be a safety-net hospital, providing care for the uninsured and low-income populations. A major employer and economic engine in Hennepin County, HCMC supports a main hospital in downtown Minneapolis and more than 20 remote clinics, including primary care as well as retail clinics.

Every year, for more than a decade, *U.S. News & World Report* has named HCMC one of America's Best Hospitals and its doctors rank among the top in the country. It is therefore no surprise that the IT department embraces innovation and excellence. At the same time, because the hospital is nonprofit, careful financial stewardship is a priority. This places a premium on efficiency even as it supports more than 4,000 users on nonstandard and often outdated equipment.

The challenge: meeting increasingly demanding healthcare and user requirements with limited resources

HCMC faced a major IT challenge in 2007 with the passage of the Physician Quality Reporting Initiative (PQRI), which requires the establishment of a quality health records reporting system. HCMC took their first step toward the PQRI compliance by choosing Epic, a comprehensive and integrated electronic health records (EHR) and information solution. On the heels of this EHR mandate, they also faced the necessity for extensive data protection required by the Health Insurance Portability and Accountability Act (HIPAA).

The IT group understood that a desktop virtualization offered a way to standardize their computing environment. The Citrix® desktop virtualization solution would offer employees and clinicians the ability to use any device, anywhere. In addition, it would centralize desktop application management, thereby increasing IT efficiency as well as ensuring the end-to-end security necessary to meet HIPAA requirements.

The solution: meeting the needs of front-line healthcare providers

The virtualization solution caught on very quickly at HCMC. According to Mark Lackner, Systems Analyst "It all started with the physicians who were using the EHR software, but once the word of the virtual desktop got out to other practices, they all started leveraging it–it went viral."

Lackner continued, "There are a lot of images such as X-rays and scans in the Epic software. Citrix XenDesktop® powers delivery of high-definition images and supports full functionality."

Doctors and technicians in the Cardiac catheterization (cath) and echocardiogram labs in particular wanted the ability to view full-fidelity videos of procedures to determine whether the cath lab needed to be activated for an emergency procedure. "Because of the Citrix technology, which delivers such a high-quality multimedia experience, they can—and do," said Lackner, referring to the Citrix HDX™ technology that enables a high-definition, high fidelity user experience and empowers delivery of crystal-clear voice, video and multi-media to any device, over any network.

Cardiologists using XenDesktop from home were able to quickly access their virtual desktop and view the patient's complete cardiac history with full-fidelity images. "Then all the cardiologists–even in the emergency room began using their virtual desktops to access all cardiac, cath, echo, and EKG data," said Kevin Murphy, IT Director of Infrastructure. "With the delivery of high-definition images to their own devices, our cardiologists can take advantage of all of these capabilities from home." They can provide life-saving diagnosis and accurate billing of EKGs from any location. "It's a great timesaver and lifestyle change for the physicians, but more importantly a lifesaver for the patients."

When the radiologists heard about the cardiologists, they took the initiative to download Receiver from the Apple App Store. This was something the IT department had been considering. Murphy said, "We're a teaching hospital, so we have a constant influx of new users. The ability of the radiologists to resolve this on their own took some of the planning and support burden off of the IT department. But in reality, it doesn't take long to get new doctors up and running. You can quickly provision ten users with ten instances of XenDesktop. In literally five minutes they're ready to go."

"We also use Citrix Provisioning Server, another component of XenDesktop, to centrally manage our desktop images and stream them on demand to create new virtual desktops. We are able to easily stream to hundreds of virtual desktops if needed. The care providers all love it," said Murphy.

The benefits: bring-your-own-device solution increases adoption rate

The IT team's focus from the beginning has been to support the most critical needs of its front-line healthcare providers. "We've tried to approach things from the perspective of physician workflow," said Lackner. "We want to know what IT services our users need, where and when," he said.

One of those needs was for transcription software. Care providers were required to walk around with scribes to whom they dictated information. HCMC built a virtual desktop image to deliver Windows 7 and installed the voice-recognition software, Dragon, directly on it. "Now, physicians can dictate directly into Dragon," said Murphy. "There's no need for a transcriber, so there are significant savings there."

In addition to enabling mobility, the Citrix solution has made it possible to offer doctors a choice of the devices they can use. Lackner said, "We found most of the doctors use smartphones and tablets. So we use Citrix Receiver™ with Citrix XenDesktop to deliver high-performance desktops, apps and enterprise data to any computing device."

"We have enabled the secure use of anyone's devices–doctors, lab technicians, executive personnel–from anywhere," said Murphy. "The marriage of components with XenDesktop made their workflow and therefore their acceptance of an EMR solution much easier. It's been a tremendous success."

Key Benefits
- Providing freedom of choice and flexibility for doctors
- Exceeding healthcare compliance requirements
- Gaining funding and savings

The use of the Citrix mobility solution also garnered HCMC an award by the nonprofit Healthcare Information and Management Systems Society (HIMSS). Out of 5,300 hospitals, HCMC gained Stage-6 certification in the EMR Adoption Model for the best use of information technology and management systems. "HIMSS considered us to be IT pioneers for our mobile healthcare solution," said Lackner.

HCMC has received significant funding based on the use of their Citrix virtualization solution, enabling them to attest for Stage 1 "meaningful use," awarded through the Health Information Technology for Economic and Clinical Health (HITECH) Act. This 2009 stimulus legislation supports bonus incentives to hospitals and physicians who demonstrate "meaningful use" of electronic medical records, which includes capabilities such as e-prescribing, chart sharing and quality-of-care measurements. According to Murphy, the Citrix solution not only helped them gain funding, but also reduced the need to acquire expensive equipment.

What's next? Pushing the boundaries of desktop virtualization

The resounding success and enthusiastic embrace of the Citrix mobility solution has energized HCMC's IT department. They're planning to move toward thin clients and zero clients to boot directly to XenDesktop.

Their vision also includes an upgrade in their transcription software. Murphy states, "We'll be able to link the voice recognition to enable physicians to order procedures and prescriptions through the same software and still meet HIPAA security standards. It will provide a quantum leap forward."

"Citrix products are basically a part of every employee's workflow here," said Murphy. Since the introduction of the Citrix mobility solution, HCMC has implemented more than 4,500 licenses of XenDesktop for all its users–administrators, nurses, doctors and emergency responders.

"We will definitely continue to leverage the use of the Citrix-Epic solution to improve patient care and workflow processes. And thanks to the Citrix side of the solution, HCMC is device agnostic–and the mobility that affords is priceless."

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