

Virginia Medical Center Adopts Immersive Video



University of Virginia Health System uses TelePresence to improve access to healthcare statewide.

Executive Summary

University of Virginia Health System Center for Telehealth

- **Industry:** Academic Medical Center
- **Location:** Charlottesville, Virginia

CHALLENGE

- Need to increase and support practitioners in rural areas
- Need to reach Virginia residents with health issues in remote locations
- Desire to decrease travel and costs associated with healthcare

SOLUTION

- Developed statewide video network to better support health services
- Created TeleStroke program to better reach stroke patients
- Created direct line of communication between rural patients, physicians, and specialists

RESULTS

- Launched more than 120-site telehealth network that logged more than 33,000 patient encounters
- Saved patients 8.7 million miles of travel
- Supported thousands of hours of distance learning for patients and healthcare professionals

Challenge

Historically, doctors in the state of Virginia have faced many challenges in urgent, rural medical care. In many instances, they have been forced to drive to see patients in remote locations where services are not available. Due to schedule issues, a remote patient can be without a doctor's hands-on attention for up to 29 days out of each month. As a point of comparison, parts of southwest Virginia are as far away from the top of the state as Detroit, Michigan. Due to the scarcity of practitioners in rural areas, if a patient needs specialty or urgent care, relocation is necessary.

Recruiting and retaining remote practitioners in Virginia has also been difficult; if the practitioners do not receive continued support in their area, they leave at their earliest convenience. In parts of Virginia, the closest hospitals with specialists can be a two- to four-hour drive away. In addition to the hundreds of miles, many state residents work by wage. A full day of travel equates to a lost day's wages for these workers.

Due to these barriers preventing both primary and specialty care, many patients in Virginia make the decision to delay treatment until the arrival of a doctor, which began to create a quality-of-care issue. This issue is exacerbated by the disruption of traveling for care and arriving at a hospital with a limited number of beds.

To combat the state's access to care issue, state and federal partners began telehealth programs in southwest Virginia to deliver health-related services and information via technology. These partners introduced The University of Virginia Health System's (UVA) Center for Telehealth to community providers. The Center for Telehealth is a multidisciplinary unit that supports UVA Health System's missions of clinical care, teaching, research and innovation, and public service.

For UVA, the most critical component of technology within telehealth was high-definition video. "With HD technologies, we are able to evaluate a patient at the right time, when care is needed, with high-quality video that eliminates the barrier of distance," says Dr. Karen Rheuban, a professor of pediatrics, associate dean for continuing medical education and the director of UVA's Center for Telehealth.

With a foundation in place and a bright future, UVA needed to find the right video solution to enhance telehealth across Virginia. The technology had to allow unique applications to increase access to care and provide more types of specialty care to rural patients, no matter their age or condition.

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Solution

Care without boundaries

In 1995, UVA's Office of Telemedicine launched with two hospitals and experienced its first remote encounter with a patient. Thanks to growing strides in technology, the current Center for Telehealth now has more than 120 sites across Virginia and provides 40 sub-specialties, including mental health services.

To support the Center for Telehealth in its mission to deliver quality care to rural Virginia, UVA deployed a broad range of Cisco® video-teleconferencing units. These interactive, high-definition, and real-time video solutions enable effective, scalable, and easy-to-manage video conferencing deployments anywhere, on any device or hospital cart. Relying on Cisco TelePresence® infrastructure, UVA used video to create a web of care across Virginia.

“Broadband availability has increased throughout Virginia, while the cost has decreased,” says Dr. Katharine Wibberly, director of the Mid-Atlantic Telehealth Resource Center, UVA Center for Telehealth. “As a result, patient encounters have continued to grow steadily.”

With Cisco TelePresence, UVA has created an environment where both doctors and patients look to telehealth to improve access and increase outcomes in their communities. TelePresence also allows the Center for Telehealth to perform remote provider education, support assistance, and peer-to-peer consult, helping to grow the skills and expertise of practitioners across the state.

Video and stroke patients

Nearly 800,000 Americans have a stroke every year, and 87 percent of these episodes are related to a closed vessel stroke. The best treatment to combat closed vessel stroke is a clot-dispersing drug called tissue plasminogen activator (TPA), which must be administered within three hours from the onset of symptoms. In the past, the administration of TPA was limited to primary stroke centers with specialists. Small hospitals housed a scarce percentage of specialists needed to read the computerized tomography (CT) scan and assess the patient using the NIH Stroke Scale (NIHSS).

With the adoption of Cisco TelePresence, UVA piloted the TeleStroke program in 2010 at a critical access hospital in Bath, Virginia. Utilizing high-definition (HD) videoconferencing, UVA was able to provide access to stroke neurology services for patients in one of the most rural regions of Virginia. That effort led to an expansion of TeleStroke services throughout the Commonwealth. “When you’re in a small rural community, you face a number of challenges,” says Dr. Wibberly. “For instance, if you are a patient who is not well-versed about the symptoms of stroke, you’ll wait longer to seek help.”

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In rural areas, EMS often takes longer to respond, and at times it can be several hours before a patient reaches a larger hospital with stroke specialists. By that time, the patient has frequently surpassed the opportunity for receiving TPA. “Adding TeleStroke allows a small rural hospital to become as effective as a primary stroke center in its rate of TPA administration,” says Dr. Wibberly. “This is very significant in terms of morbidity and quality of life.”

At TeleStroke hospitals, medical staff also use hospital carts with TelePresence end-points, which are ready 24 hours a day for potential stroke victims. Neurologists from the Center for Telehealth are equipped with end-points in their homes, as well as their medical centers. This technology enables the neurologists to administer life-saving assessments in a fraction of the time that would be needed to transport a patient to a primary stroke center.

Interaction on-the-go

The Center for Telehealth is also using Cisco Jabber™, an interactive tool for presence, instant messaging, voice, video, voice messaging, desktop sharing, and conferencing, to connect to remote hospitals and care facilities that cannot afford large end-points, but still have the ability to use a webcam.

“We now use Jabber to check on administrative activities, and the university has also used the tool to complete memorial services for staff who have passed away,” says Dr. Wibberly. “We are also in the process of using Jabber as a direct line of communication from a physician’s office to a clinic.”

Results

Supported by immersive video, the Center for Telehealth currently has an over 120-site network in Virginia and has conducted more than 33,000 patient encounters in more than 40 sub-specialties of medicine, saving patients roughly 8.7 million miles of travel in healthcare support. In addition, the Center for Telehealth has supported thousands of hours of distance learning for patients and healthcare professionals.

“What’s been most remarkable about the telehealth program is our ability to serve the mission of UVA’s health system: clinical care, research, teaching, and public service. Telehealth allows us to meet each of those missions,” says Dr. Rheuban. “Another goal is to build for sustainability and to keep innovating by finding new champions. We use TelePresence during training for our students, and we see the telehealth program as part of a solution to the workforce shortage.”

Clinical services provided through TelePresence span the continuum from fetal care to high-acuity consultations, as well as post-acute care and chronic disease management; mental telehealth services are also provided in a community setting. In addition, the Center for Telehealth has launched a remote patient monitoring center to mitigate chronic disease and reduce emergency room visits and hospital readmissions.

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“Advances in technology have helped telemedicine to progress,” says David Cattell-Gordon, director of the Office of Telemedicine, of Rural Network Development, and co-director of the Healthy Appalachia Institute. “People used to look at the screen, see pixilation, and be hesitant. Now we have a sense that technology is another tool in the physician’s bag; when it’s working and the quality is good, the relationship is the only factor that exists.”

The Center for Telehealth has also achieved strides in high-risk obstetrics projects due to immersive video technology. “Patients who are high-risk have to be transported to a maternal field center or be seen by a specialist, so UVA launched a remote pilot project with the Harrisonburg Community Health Center,” says Dr. Wibberly. “In one year, missed appointments were decreased from 11 percent to 4.5 percent, and the health center’s rate of pre-term births decreased from 16.5 to 12.5 percent, which is a great cost savings for both low income-families and the state Medicaid program.”

TelePresence has also helped UVA combat the national diabetes epidemic. The Center for Telehealth allows individuals and families to connect over video and gives them sophisticated, professional levels of diabetes education, which is supported by the Virginia Department of Health. Telehealth has also led to strides in cystic fibrosis care, giving access to such care at rural clinics that do not always have the expertise. Enabled by technology, partnerships have been formed between physicians and nurse practitioners, making telemedicine an inter-professional practice and bringing people together across video to care for patients.

The Center for Telehealth has also used Cisco Jabber to keep critical-care patients connected to their homes and their families. One patient arrived two days before her son’s wedding and remained hospitalized the day of the event. “This patient wanted to forgo treatment and attend this important event in her life,” says Richard Rose II, IT systems specialist at UVA. Rose used Jabber to digitally transport the patient from the UVA Medical Center to the wedding in Roanoke. A laptop was used at the wedding, and a liquid-crystal display (LCD) was placed in the patient’s room. “Using a Jabber client on a cart, UVA was able to bring this patient to her son’s wedding, and she was able to see and participate in the milestone.”

In April, Cisco honored the Center for Telehealth as the first member of the Cisco Healthcare Center of Excellence program, due to UVA’s outstanding work in the field of healthcare worldwide. Designed to foster collaboration by recognizing institutions that use Cisco technologies and solutions to transform healthcare, the Cisco Healthcare Center of Excellence program aims to stimulate innovation by aligning health IT

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Product List

Video

- Cisco TelePresence
- Cisco Jabber

investments with clinical and business processes to extend access, improve outcomes, and reduce costs.

“One thing is clear,” says Dr. Rheuban. “We couldn’t do this work without the technology that enables the effort.”

Next Steps

Over the next several years, UVA will be working with Human Resources for Health (HRH), which is a joint initiative of the United States and Rwanda to build a strong, independent healthcare delivery system over a period of seven years. HRH is a part of the Clinton Global Initiative established in 2005 by former President Bill Clinton. UVA is supporting HRH in the areas of anesthesiology and surgery, sending physicians to train residents, who will provide healthcare and train future residents.

In December 2012, UVA participated in the first-ever teleconference with anesthesiologists of the National University of Rwanda, thanks to Cisco TelePresence, and began the process of collaborating with the Clinton Global Initiative to promote positive changes in healthcare around the world. From the teleconference room at UVA’s Medical Center, anesthesiologists in Charlottesville will sit down with their counterparts in Kigali the last Friday of every month for case presentations.

Nationally, the Center for Telehealth is working on iTreat, which will provide ambulatory care for stroke patients, connecting them with neurologists before they arrive at the hospital. Doctors will not only be able to talk to patients immediately following their symptoms, but also perform assessments and prepare for tests that they need to do once the patient arrives at the primary stroke center.

“UVA recognizes that mobile capability will be a part of the future,” says Dr. Rheuban. “Over time, and with strides in technology, we have enhanced our capabilities to not only improve our quality of care, but the quality of life in Virginia.”

For More Information

To find out more about the Cisco TelePresence, go to:
<http://www.cisco.com/go/telepresence>.

To find out more about the Cisco Jabber, go to: <http://www.cisco.com/go/jabber>.

