

UCH, Memorial launch virtual stroke consult, with more to come

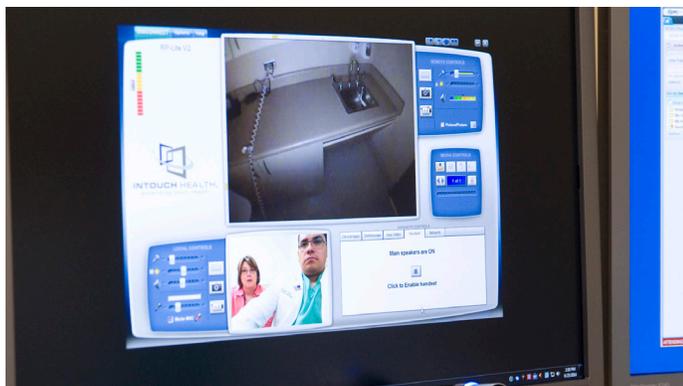
UCHealth Launches Telestroke Program

By Todd Neff

University of Colorado Health has taken a big first step into telehealth, launching its telestroke service on Monday, July 7.

Rather than driving the 70 miles between Denver and Colorado Springs, School of Medicine and UCHealth doctors will log into the Telestroke system and, via enhanced “robot” videoconferencing technology, consult with onsite nurses and physicians to review or make a diagnosis for stroke patients.

The telestroke service, in the works since last fall, has a rotation of six board-certified University of Colorado Hospital stroke specialists handling 140 hours of 5 p.m. – 7 a.m. calls per month at Memorial Hospital’s central campus.



“I think it’s pretty user-friendly,” says neurologist Luis Cava, MD, training on the hospital’s telestroke system with Christina Denton, RN, MSN, and Kathy Deanda, RN, MSN (not pictured).

Stroke is the fourth-leading cause of death and the top cause of adult disability in the United States. Telestroke emphasizes speed. Because “time is brain” and brain is life, there is roughly a three-hour window from the time of first stroke symptoms until the window closes on administering tPA (tissue plasminogen activator),

the best hope for busting the clots that otherwise can lead to permanent brain damage.

By the time a patient arrives at Memorial, providers assume they have an hour to act, said Stephanie Schlenger, RN, stroke coordinator for UCHealth South (Memorial’s two hospitals).

I, Robot. It works like this, said Christina Denton, RN, MSN, UCHealth’s Telestroke coordinator. A patient with stroke symptoms arrives at a Memorial Emergency Department at, say, 3 a.m. The ED team confirms the stroke symptoms. If it’s a telestroke night, the ED doctor or nurse calls the UCHealth Access Center, which pages the on-call telestroke physician. At Memorial, a nurse rolls the robot – formally, an InTouch RP-Lite – to the foot of the patient’s bed.

The vascular neurologist connects remotely to the robot via software on a workstation, a personal laptop, or even an iPad. The physician can pan, zoom, and tilt the robot’s camera to the extent of checking the patient’s pupils. With headphones on, he or she can listen to the patient’s heart and lungs via a stethoscope on the robot, and talk to the patient. The patient, who sees the off-site neurologist’s face on a screen atop the robot, can answer. The doctor can guide the on-site ED staff as it works through physical tests involved in stroke diagnosis. The telestroke neurologist and the on-site team both have access to the patient’s Epic electronic health record, which the neurologist updates. The neurologist makes a recommendation – for tPA, perhaps. The ED physician then has the final say, according to Denton.

While Denton and the UCH access center have worked hard to enable speedy transfers for more complex cases, as the program expands the transfers could be to community hospitals close to the patient’s home and family. For example, future telestroke

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patients at UCHealth’s Iverson Memorial Hospital in Laramie, Wyo., could go to Poudre Valley Hospital in Fort Collins or elsewhere, depending on what’s best for the patient.

Long road. Setting all this up took time, including six months of “Telestroke Tuesdays” (four-hour meetings involving managers, IT specialists, physicians and others) and more, Schlenger said.

From the UCHealth IT perspective, establishing the telehealth infrastructure involved “basic stuff,” Deanda said. It was far from simple, though. The team had to ensure good Wi-Fi connections at both Memorial and at UCH and see that the UCH neurologists downloaded the InTouch software to their PCs and that those PCs’ operating systems were up to snuff. They set up a mobile cart near the neurohospitalists’ offices on the fourth floor of the Leprino Building and bought two iPad Air tablets with Verizon Wireless connectivity. Not least, preparation included setting up a dual-monitor control station in a converted storage closet around the corner from the Neuro-ICU on the second floor of the Anschutz Inpatient Pavilion 2.

The Epic team chipped in with an easily clickable (or, on an iPad, tappable) form enabling the quick entry of patient history, symptoms, neurological exam results, and other pertinent patient information. When complete, it all feeds into the patient’s Epic consult note, which outlines the consulting physicians’ recommendations for treatment, Deanda said. There was also input from HIM, ADT, finance, purchasing, and many other resources to bring all this together, she said.

“You don’t realize all the moving parts until you start digging into it,” Deanda said.

Politics. The real challenges involved the regulatory and clinical aspects, said Denton, who took her newly created telestroke-coordinator position in January. There were questions surrounding reimbursement and billing specifics. The law says physicians must be licensed and privileged where the patient is. It took until May to get UCH’s neurologists approved at Memorial, she said.

Getting all the physicians to work together took some time, too.

“Everyone’s fairly territorial – ‘This is my little niche. This is how I’ve done it,’” Schlenger said.

UCH Neurology Program Manager Kimberly Meyers has devoted many hours to marshalling resources, assuaging concerns, and paving administrative pathways for the new service. Denton and Deanda have spent many of their Fridays at Memorial Hospital, she said, “Just to show we’re on the same team, making friends, and talking about how we can help,” Denton said.

But Schlenger said stroke care was ripe for system-wide collaboration, too – with UCHealth-wide order sets and neurologists who have worked together in the past. Memorial is a Primary Stroke Center and has, of late, had 100 cases a month, about triple UCH’s recent average monthly volume.



With InTouch Health’s RP-Lite “robot,” the doctor is in – even when he’s not.

Practicalities. [William Jones, MD](#), the UCH Stroke Program’s medical director, said Telestroke will have its own call schedule. They couldn’t just assume that the physician already on stroke call would handle Telestroke, too.

“If we have a Telestroke call at the same time as we have a stroke call in our own hospital, the same person would have to be able to cope with both simultaneously,” Jones said.

Jones has been thinking about telestroke for five years, but some key precedents – the establishment UCH as a Comprehensive Stroke Center and the UCHealth-wide rollout, which streamlines and simplifies telemedicine – needed focus first.

Now that telestroke is launched, it might take some getting used to among stroke doctors, Jones said. It will take time for the technology to evolve from a distraction to something closer to background noise, he said.

"I'm emphasizing to the team: You're still doing what you know how to do really well, and that is to evaluate patients," he said. "If you need to get back to scribbling in a notepad, do that – learn as you're doing it, but don't let it distract you."

The UCH neurology team is not alone in the world of telestroke. [Dozens](#) of hospitals across the country are doing it, to the point that it's "now part of mainstream clinical stroke practice in North America and internationally. Telestroke reliability, validity, efficacy, safety, clinical, and cost-effectiveness studies reflect maturity in the field," according to one recent [report](#).

User-friendly. In late June, UCH neurologist [Luis Cava, MD](#), sat before the AIP2 Telestroke control station's dual 24-inch monitors. The right side displayed the patient's Epic medical record; the left, the InTouch Telestroke interface. Cava was the last of the six UCH physicians Denton and Deanda trained individually. They had already done group sessions with about 30 Access Center staff as well as many of Memorial Hospital's Emergency Department nursing staff.

On the main Telestroke screen was a video window, in this case displaying a Memorial Hospital sink (which appeared to be in good health) and a smaller video window showing Cava and Denton looking at the monitors. This was the image the patient and onsite caregivers would see, captured from a camera mounted just below the left-hand monitor.

"I think it's pretty user-friendly," Cava said, adding that he likes the fact that a notebook PC or an iPad can allow remote access. "It allows you to assess the patient at a distance and collect the proper data to be able to diagnose and recommend treatment."

There will be more to come. Meyers is talking Telestroke with other community hospitals in Colorado and beyond, and it's only the beginning for telehealth at UCH and UCHealth (*see related story, this issue*).

"I think telehealth is a key strategy – not only for UCH, but for the health system in general," said John Harney, UCH's President and CEO.