



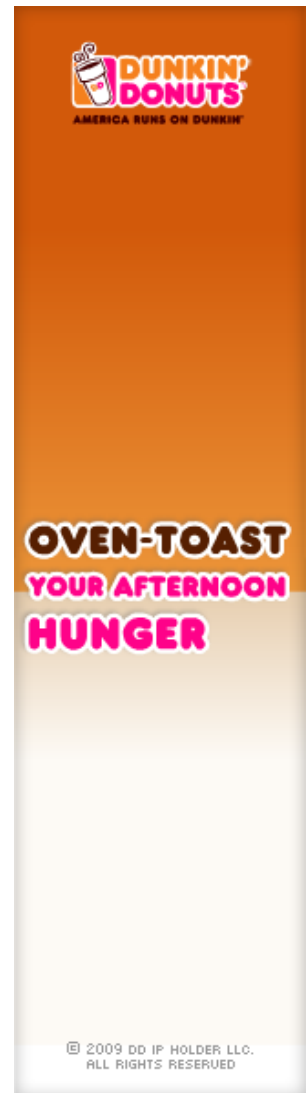
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Drs. Adnan Siddiqui, foreground, and Elad Levy use series of monitors showing real-time angiograms as they perform neurosurgery on patient with ruptured aneurism at Millard Fillmore Hospital stroke center.

Derek Gee / Buffalo News



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FOCUS: STROKE CARE

Telemedicine provides advanced treatment for more stroke victims

With prompt treatment of utmost importance, telemedicine from strokecenters can minimize brain damage for people stricken in outlying areas

By Henry L. Davis
NEWS MEDICAL REPORTER

Trisha Carney is fortunate that she had her stroke when she did.

A few years ago, the 39-year-old Olean woman wouldn't have received the specialized care she needed to minimize the damage the stroke did to her brain.

She could have been left severely paralyzed or brain-damaged, or even have died, because her local hospital, like many in outlying areas, can't provide highly specialized stroke care that must be administered within hours of a stroke.

But when she was wheeled into Olean General Hospital last year after waking up one morning and falling three times on her way to the bathroom, a neurosurgeon was immediately available to study a scan of her brain and chart a course of treatment.

The neurosurgeon wasn't in the room with her, though. He was 75 miles away, in Buffalo, connected to her doctors at Olean General via the Internet and television hookups.

Unable to send stroke specialists to every emergency room, a growing number of medical centers that specialize in stroke are bringing their expertise to patients through telemedicine.

"People who have strokes in isolated areas are pretty much dead in the water. You need to give them a lifeline to stroke centers," said Dr. L. Nelson Hopkins III, chief of neurosurgery at Kaleida Health and chairman of neurosurgery at the University at Buffalo.

Based at Millard Fillmore Hospital, Hopkins leads the most advanced stroke telemedicine system in New York State, with connections to 10 smaller hospitals in the region.

Telemedicine isn't new, but applying it to stroke is.

Early evidence from Buffalo and elsewhere suggests that telemedicine links improve the chances that patients will survive a stroke and avoid paralysis and other major problems.

Carney believes that the telemedicine link played a part in her getting treated quickly enough to avoid devastating brain damage.

"I was eventually able to walk out of the hospital and am still able to speak," said Carney, whose left arm remains paralyzed.

New York started a telemedicine initiative in 2006 to address the lack of neurologists and neurosurgeons in rural areas. The program is modeled after a system at the Medical College of Georgia that uses a technology called REACH, or Remote Evaluation of Acute Ischemic Stroke, to establish connections between hospitals and evaluate patients' risks.

"The technology gives smaller hospitals access to neurologists, and can be used for other services like psychiatry and trauma," said Dr. John Morley, medical director in the state's office of health systems management.

Millard Fillmore, a state-designated stroke center, acts like a hub to 10 spoke hospitals, including Niagara Falls

Memorial, Brooks Memorial in Dunkirk, Olean General, Medina Memorial and Wyoming County Memorial.

Other REACH systems in New York operate in Syracuse, Rochester and Cooperstown. In addition, the Catholic Health System last year established a telemedicine link between its stroke center hospitals and Mount St. Mary's Hospital in Lewiston.

"Telemedicine allows us to provide a higher level of care wherever the patients show up," said Holly C. Bowser, vice president of neurosciences at the Catholic Health System.

In many instances, patients who might have suffered a stroke first show up in smaller hospitals and then often get transferred to stroke centers too late to be treated with tPA, a clot-busting drug that stops the progression of a stroke. The drug must be given within three hours after symptoms start.

The faster a patient receives treatment the less chance that brain cells will die.

Carney, an assistant women's basketball coach at Geneseo State College at the time of her stroke last year, arrived at Olean General's emergency room in time to get tPA. But the drug, which does not work in every patient, didn't solve her problem.

Based on the telemedicine evaluation, she was quickly transferred to Millard Fillmore, which specializes in procedures to reopen blocked blood vessels. Doctors there inserted a tiny tubelike device called a stent in her brain to restore blood flow through a damaged artery.

"I'm a poster child for telemedicine," said Carney, who hopes to return to coaching if she regains movement in her arm with therapy. "There are so few stroke specialists in [Cattaraugus County]. It's really important to be able to get rapid access to that level of care."

Telemedicine for stroke remains a work in progress. It costs hospitals here about \$25,000 for a three-year contract with Millard Fillmore. That may seem like a relatively minor amount, but it is a challenge for smaller facilities that may question whether telemedicine is that much more valuable than having emergency room doctors consult with stroke specialists by phone.

There are no standard national guidelines yet for stroke telemedicine. There is little research on its effectiveness, although studies indicate that the technology is worth pursuing.

In addition, private health insurance companies have yet to create separate reimbursements for telemedicine that can cover the cost of equipment and technical support.

"We believe telemedicine is cost-effective for stroke, but we also need to do the research to show it. We see many more patients getting tPA, and that's more cost-effective than caring for people who've suffered a stroke," said Dr. Bart M. Demaerschalk, a Phoenix neurologist who reviewed the state of the field in a recent issue of Mayo Clinic Proceedings.

Hopkins said that one of the biggest benefits of the program is that it is increasing awareness among patients and emergency room personnel about stroke and its treatments.

But he also argues for a reevaluation of the state's stroke center designation, which New York has given to 114 hospitals, saying the current practice of taking suspected stroke patients to the nearest stroke center doesn't always make sense. Instead, he advocates a higher designation for hospitals that can provide newer, interventions round-the-clock to restore blood flow in the brain.

With growing awareness of stroke, Hopkins said, there are more patients who are candidates for the interventions, and those patients should be transferred to hospitals that can provide the latest therapies in a timely manner.

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