

# Rolling to cut stroke

Mobile units aim to quickly deliver vital treatment

BY DELTHIA RICKS  
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Stony Brook University Hospital plans to launch two mobile units in the spring — rolling emergency rooms — designed to reach stroke patients within the critical moments when intravenous brain-sparing medications can dramatically impact survival.

Doctors at Stony Brook's Comprehensive Stroke Center expect the units, which will operate in Suffolk County, to help reduce stroke disability and improve survival rates. The hospital is investing \$2.2 million in the units, which will be first-of-their-kind emergency vehicles in the region. They will be stationed at Long Island Expressway exits, program organizers said.

"These are mobile units that are equipped with a CT scanner that will allow us to determine if a patient has a blocked vessel or bleeding in the brain," said Dr. David Fiorella, a neurointerventionist at Stony Brook and director of the cerebrovascular program at the university's Cerebrovascular & Comprehensive Stroke Center.

The rolling emergency rooms will hit the road in March and carry a crew of stroke first responders in vehicles containing state-of-the-art brain imaging equipment and pharmaceuticals. Each unit will have a critical care nurse, paramedic, emergency medical technician and CT technologist, said Eric Niegelberg, administrative director for Emergency Medicine Services at Stony Brook and director of the mobile stroke unit program.

For decades, doctors have touted impressive tools — including clot-busting drugs — to save lives and prevent stroke-related disability. In many instances, patients receive that treatment too late, state and federal health studies have found.

"We will be able to give patients the same medication at their homes that they would receive in an emergency department," Fiorella said, explaining



Dr. David Fiorella, left, and Eric Niegelberg outside the emergency department of Stony Brook University Hospital.

that the crew in the units will be trained to initiate time-sensitive stroke treatments in the field before whisking patients to Stony Brook for additional care.

Crew members in the units will work under the direction of cerebrovascular specialists at the hospital's stroke center, who will advise them via remote telemedicine technology.

Specialized stroke-response units are rolling in several other municipalities throughout the country — including parts of the so-called Stroke Belt — a swath that includes the Deep South and portions of the Midwest. Studies in those parts of the country have shown the units, which have been on the road for about four years, are helping lower stroke disability and death.

"Categorically, this is the

best way to handle patients with acute stroke. There is no better way to do it. It achieves all the major goals in managing patients having a stroke," said Dr. Peter Rasmussen, medical director of distance health for the Cleveland Clinic in Ohio, which initiated one of the nation's first mobile stroke unit programs.

He said 4G broadband cellular technology has made it possible for cerebrovascular specialists at a hospital to diagnose and direct the care of stroke patients treated in a mobile unit. Telemedicine is revolutionizing emergency response to stroke, Rasmussen said.

The Cleveland program has treated 1,600 patients since 2014 with a single unit and plans to add a second one next year, he said.

The units also have helped Cleveland Clinic doctors better triage patients, said Rasmussen, who added that some patients do not require expensive, comprehensive stroke center care after reaching the hospital.

The New York State Department of Health has been part of an 11-state program to improve "door-to-needle time," the moment of stroke recognition to the moment of care. The Stony Brook program, which is not part of the state effort, could help improve door-to-needle time in Suffolk, experts said.

Niegelberg said he and Fiorella are working with emergency medical service agencies in Suffolk to coordinate dispatching and response.

"When we developed the program, we wanted to ensure that our various partners felt the

same way we did," Niegelberg said, referring to a need for specialized and rapid stroke response.

He said the mobile units are stroke-specific because the CT scanner has a small ring capable of imaging only the head. Conventional ambulances already have electrocardiogram instrumentation onboard and are equipped to handle heart attacks and other emergencies. Stroke, by contrast, requires special equipment to diagnose the extent of brain injury.

Because of each unit's telemedicine capacity, CT images can be instantly relayed to the hospital. Fiorella said he and his team hope to launch a third mobile vehicle in the not-too-distant future.

Stroke constitutes a major public health concern nation-

# disability



An image provided by Stony Brook University Hospital shows what the interior of one of the mobile units would look like.

## STROKE NUMBERS

**6,000**

People in New York who annually die from strokes

**795,000**

People nationwide who are affected by strokes each year

**129,000**

People across the country who die annually from strokes

**\$34B**

Nationwide medical and rehabilitation costs of strokes

Source: New York State Department of Health

wide. Every 40 seconds someone in the United States suffers a stroke and every four minutes someone dies of it, according to data from the American Heart Association.

Less common symptoms may seem so vague that patients may dismiss them as something other than stroke: sudden dizziness and generalized weakness, for example, or sudden trouble with eyesight. More often, symptoms are dramatic: The face droops on one side, an arm has weakness and speech is slurred.

Demographically, stroke is marked by stark disparities: Older people are more often afflicted than younger ones, and black patients more frequently than white. But statistics are not rules, doctors said, and people as young as their 20s and

those of all ethnicities have been stricken and encumbered by strokes.

The two types of stroke are known as ischemic and hemorrhagic. Either can be severely debilitating — or deadly. Ischemic stroke, the most common, affects about 87 percent of stroke sufferers and occurs when blood flow to the brain is blocked by a clot, Fiorella said.

The other type of stroke, hemorrhagic, Fiorella added, refers to a burst blood vessel.

A key objective behind the stroke mobile units, Fiorella explained, is reducing the amount of time from the report of a stroke to the moment when intravenous tPA — tissue plasminogen activator, a clot-busting drug — is administered for ischemic strokes. Coagulating agents can stanch the flow of blood in hemorrhagic strokes, he said.

“We know the therapy works better if they get it earlier,” Fiorella said of administering drug therapy.

“Time is brain,” he noted, using a phrase widely repeated by stroke specialists. The longer a patient goes untreated, the more brain tissue that is irrevocably lost and the greater the risk of long-term disability.

Many people who could benefit from tPA don't arrive by ambulance, but are brought into hospital emergency departments by family members. Some with mild symptoms arrive as walk-ins, said Dr. Jonathan Berkowitz, medical director of Northwell Health's

Center for Emergency Medical Services.

Northwell hopes to add a mobile stroke unit to its emergency services, Berkowitz said.

“We absolutely are evaluating the prospect of a mobile stroke unit,” Berkowitz said. “We are very curious to see the active studies that will shed a lot of light on the use of them.”

In the heart of the nation's Stroke Belt, Dr. Andrei V. Alexandrov, director of the Mobile Stroke Unit program at the University of Tennessee in Memphis, said patients had been ushered to care faster because emergency stroke care — intravenous tPA — had aided them in the field. The medical center's program began in 2016.

About 60 percent of the 420 cases treated in the program have been actual strokes; 38 percent are “stroke mimics,” such as severe migraines, Alexandrov said. He called the program “very successful.” A unit can arrive at a patient's home in as few as seven minutes, Alexandrov said.

“Patients are getting tPA sooner,” said Alexandrov, who blamed high stroke rates in the South on “fried foods, barbecue and sweet tea.”

“There is a golden hour in treating the patient. That's 60 minutes,” Alexandrov said. “This brings stroke technology to the patient.”

Niegelberg, meanwhile, said Stony Brook's mobile units were almost ready for delivery, and he and his team knew where each would be stationed.

“The first unit will arrive around January 15, and the next 30 days afterward,” Niegelberg said.

“The CT scanners have to be installed locally to make sure that they are functioning 100 percent properly. We have already started to hire the staff for this, but some of the training can only happen with the actual unit,” he said.

One unit will be stationed at the LIE's Exit 57 in Islandia, and the other at Exit 68 in Shirley. The locations are strategic, Niegelberg said, because they provide rapid North-South and East-West access.

The program is working with Suffolk County EMS agencies to determine the geographic coverage, he added.

## After theft of family vehicle, a ‘fairy tale’ gift

BY NICOLE FULLER

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A local car dealership played Santa on Sunday, giving away a shiny SUV to the Coram single mother whose vehicle, with her severely disabled son's wheelchair inside, was stolen last month.

Roxanne Drayton had been left devastated by the theft and without a way to transport her son Todd, 28, who has Down syndrome and cerebral palsy and requires constant care, to medical appointments. On Sunday, she walked into the Generation Kia car dealership in Bohemia and picked out a sangria-colored 2011 Kia Sorento EX to take home. “It was a fairy tale,” said Drayton, 60. “It was so nice. It was so, so nice.”

Joe Catalanotto, owner of Generation Kia, said he reached out to Drayton with the offer of a free SUV from his dealership after reading about the theft in Newsday. “I just wanted to make sure she was taken care of, on the car front,” he said. “She really needed an SUV. Whenever we have the opportunity to help someone like that, to change their lives if we can, we always want to do that.”

Drayton's 2002 Ford Explorer was stolen from her Coram driveway Nov. 8, after she left the car running while preparing to pick up her son from Stony Brook University Hospital. Inside was her son's specialty wheelchair, worth about \$8,000.

A Suffolk police spokesman

on Sunday said by email: “There have been no arrests and the vehicle and wheelchair have not been recovered.”

Drayton, who called the offer of a free vehicle “surreal,” said she “wasn't really sure” if Catalanotto was serious at first.

But Catalanotto presented Drayton, who came to the dealership with Todd and her other son Darell, 25, with the choice of three vehicles, each adorned with a red or green bow. The Sorento won out because, Drayton said, it had heated leather seats, a navigation system and, more consequentially, plenty of room for Todd's wheelchair.

Catalanotto said there are no strings attached. Drayton is set to pick up the car Wednesday night. “Totally free. No taxes. We're charging her zero for the vehicle. She just has to get insurance,” Catalanotto said.

Drayton's story also touched many others, who have donated to an online fundraiser in excess of \$18,000 to pay for a new wheelchair for Todd, who is using a borrowed one.

Drayton, who said she sometimes feels “shunned” when out in public with her son, said she hoped the community rallying around her and her son also would have another effect: a more welcoming attitude to people with disabilities. “These kids, we love them like normal people love their children,” she said. “If nobody else in the whole world loves him, I do. If nobody else in the world thinks he's the greatest, he's my hero.”



Darell Drayton helps his brother Todd as Generation Kia owner Joe Catalanotto assists their mother, Roxanne Drayton.