



Spring 2015

Touchpoints

Rhode Island's Only Comprehensive Stroke Center Saves Lives

It was late on February 4 as Mary and Jackie helped their mother, Catherine Murphy, get ready for bed. The three had just finished spending the evening together over dinner, reminiscing about years gone by and discussing current events.

Suddenly, the night took a terrifying turn. As Mary asked her mom a question, Catherine responded with slurred speech. Mary hurried to her mother's side, immediately noticing the left side of her face was drooping. Catherine, a mother of 13, was having a stroke, unable to move her left arm or leg.

A nurse by training, Mary leapt to action. She helped her mother lay down and Jackie dialed 911. Within ten minutes, Catherine was in an ambulance being rushed to the Comprehensive Stroke Center at Rhode Island Hospital, her daughters by her side. Another daughter, Jean, also a nurse, quickly joined them.

"I'll never forget how worried I was," recalls Mary. "We were all scared that this was going to be devastating."

Equipped with specially trained staff and the most advanced treatments available, Rhode Island Hospital is the only hospital in the state designated as a Comprehensive Stroke Center by The Joint Commission. It was awarded certification in November 2014. *"We are the only hospital in Rhode Island that has the capability of delivering life-saving catheter-based therapies such as mechanical thrombectomy,"* says Brian Silver, MD, Director of the

Comprehensive Stroke Center at Rhode Island Hospital. *"This procedure, which manually removes large vessel clots, along with the availability of clot-busting medication delivered through the vein, increases the likelihood of a good outcome for patients suffering from a severe non-bleeding stroke."*



Stroke patient Catherine Murphy, age 93

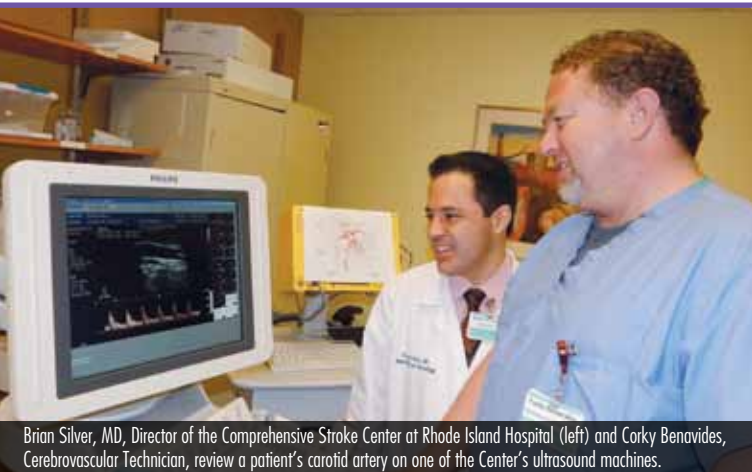
To be awarded advanced certification as a Comprehensive Stroke Center, Rhode Island Hospital voluntarily submitted to a rigorous onsite review by the Joint Commission. The hospital's performance was measured against the Commission's Comprehensive Stroke Center standards and requirements, including a dedicated neurointensive care unit, advanced imaging capabilities, uninterrupted availability of specialized treatments, coordination of post-hospital patient care, research participation, and staff having the special education required to care for complex stroke patients.

Preparation for the Joint Commission review required the collaboration of hundreds of hospital staff across different departments. To create a more streamlined environment for stroke patients, a 10-bed dedicated stroke unit was established, along with a 2-bed TIA (trans-ischemic attack) unit in the emergency department. Rhode Island Hospital's TIA unit is among less than a handful in the United States.

Because a TIA represents a high risk of impending stroke, the new TIA unit allows for rapid evaluation of patients in the ED, including an MRI. The unit has helped more than 80 percent of the patients it sees avoid hospitalization. Previously, patients were in the hospital for two to three days receiving this same evaluation and



American Heart Association
American Stroke Association
CERTIFIED
Meets standards for
Primary Stroke Center



Brian Silver, MD, Director of the Comprehensive Stroke Center at Rhode Island Hospital (left) and Corky Benavides, Cerebrovascular Technician, review a patient's carotid artery on one of the Center's ultrasound machines.

treatment. Other changes included the creation of a 13-bed rehabilitation unit and the expansion of staff coverage in the neurointensive care unit and neurointerventional suites.

"Of the 5,000 hospitals in the United States, thus far, only 85 have earned the designation of a Comprehensive Stroke Center," says Dr. Silver. "Having such a center in Rhode Island provides the highest level of care to our community."

As soon as Catherine arrived at Rhode Island Hospital, less than an hour after the onset of her stroke, physicians whisked her away to administer tPA, a clot-busting medication delivered into the vein. Able only to be administered within the first four-and-a-half hours of a patient's stroke, tPA offers the best outcomes when delivered as quickly as possible. Shortly after receiving tPA, Catherine underwent a CT scan, revealing a clot in her middle cerebral artery, the major vessel that supplies blood to the right side of the brain. A mechanical thrombectomy procedure removed the clot in its entirety. Our Comprehensive Stroke Center is the only place in Rhode Island certified to perform this procedure.

"I could feel myself becoming calmer the moment we arrived at Rhode Island Hospital," recalls Mary.

Following a patient's procedure and a few hours for recovery, they are transferred to a private room in the stroke unit on the hospital's sixth floor. There, patients are evaluated by a personal nurse assigned to their care, including frequent neurological assessments and vitals.

Once patients are cleared for the next phase of their recovery, many benefit from the Center's newly renovated neurorehabilitation

Rhode Island's Only Comprehensive Stroke Center Saves Lives *Continued from cover*

unit, where they receive expert care from a physiatrist, occupational therapist, physical therapist, and speech language pathologist. An inpatient program, patients typically spend two weeks in the unit, working with therapists on their ability to perform day-to-day tasks and regain function.

In December 2014, the Vigneron Memorial Fund awarded the Comprehensive Stroke Center at Rhode Island Hospital a \$12,500 grant to purchase equipment for the neurorehabilitation unit. The funding is allowing our hospital to acquire a Lite Gait, which will help patients unable to bear

their own weight to safely stand and begin relearning crucial motor movements.

"Along with the requirements of the Joint Commission, our brand-new rehabilitation unit was an important piece of becoming a Comprehensive Stroke Center," adds Dr. Silver. "Our goal is to get as many patients as possible back to their home environment."

Less than 36 hours after her procedure and while recovering in the stroke unit, Catherine was freely moving her left arm and leg, regaining near complete control with each passing hour and the asymmetry of her mouth resolved almost immediately. Physical and occupational therapists soon began working with Catherine in her room, focusing on strength and squeeze tests for her limbs before graduating to assisted walking and introducing exercises she'd be able to continue at home.

"I can't stress how impressed I am with everyone who cared for my mother. Every question we had was answered so clearly, and because of how large our family is, there were a lot of questions," says Mary. "We're so grateful that she was treated at Rhode Island Hospital."

When asked how she feels about the care she received, Catherine's eyes light up. *"I know my care was incredible because of my complete recovery; everyone's compassion and expertise was just amazing," she says. "Nothing has really changed since my stroke. I still do everything today that I did before—I feel normal and raring to go."*



Neurointerventional Suite at The Comprehensive Stroke Center at RIH

SYMPTOMS OF STROKE AND TIA

TIA symptoms can be fleeting, but are often a warning sign of a more serious stroke to come. Experts recommend heading to the emergency room or calling 911 if you have any of the following symptoms:

- Sudden numbness or weakness of face, arm or leg, especially on one side of the body
- Sudden confusion or trouble speaking
- Sudden trouble seeing in one or both eyes
- Sudden trouble walking, dizziness, loss of balance
- Sudden, severe headache with no known cause

Source: American Stroke Association

EMS AND RHODE ISLAND HOSPITAL: IMPROVING COMMUNICATION AND STROKE PATIENT OUTCOMES

As paramedics stabilized Catherine Murphy, preparing to rush her to Rhode Island Hospital's emergency department, an accompanying EMS responder was placing a call to the hospital that would have a profound impact on Catherine's care.

Suffering a stroke, each passing second was critical to Catherine. Every minute a stroke goes untreated, as many as 1.9 million neurons—the cells in the brain that process and transmit information throughout the body—die.

The EMS responder's call was to notify the hospital that a stroke patient was en route. The call stems from a recent change in Rhode Island Hospital's stroke protocols, implemented following a specialized research study, which showed significant improvement in EMS pre-notification rates. In Catherine's case, the pre-notification immediately prompted a 'code stroke' in the emergency department, mobilizing physicians to swiftly begin treatment the moment she arrived.

Caryn Amedee, BSN, RN, Assistant Clinical Manager at the Comprehensive Stroke Center is overseeing the research, which will soon enter the second part of a study that began two years ago. The first phase analyzed ten areas of EMS run report documentation, including when a patient was last known to be well, whether EMS obtained a blood sugar level, and if the hospital was notified of the patient's impending arrival. Caryn and her team then provided feedback to EMS to enhance documentation.

"Most EMS providers fill out reports differently, so we wanted to identify ways to improve and standardize their documentation, which we were successful with," says Amedee. "We don't have the luxury of time with these patients—it's so important to have detailed reports." The second phase of the study will focus on the impact of pre-notification on patient outcomes. *"Pre-notification is a big deal. It's an EMS intervention that can lead to shorter door-to-treatment times, and we know that can lead to better patient outcomes,"* says Amedee.

Data from the study's first phase is helping to drive the current study, particularly around EMS stroke recognition and assessment. Using the Cincinnati Stroke Scale, EMTs need to identify just one of three criteria—weakness on one side, slurred speech, or facial droop—to recognize a stroke and pre-notify the hospital. Calls from EMS are received by a paramedic in the hospital's MedComm Center, who then triggers the 'code stroke' in the emergency department.

"The MedComm Center has tremendously improved communication with inbound EMS responders," adds Amedee. "Our emergency department is one of the busiest in the country, so knowing a patient with a time-sensitive condition is en route can make a big difference."



John Potvin, EMS Director for the East Providence Fire Department, reviews the patient tracking system aboard one of the department's ambulances with Caryn Amedee of the Comprehensive Stroke Center at Rhode Island Hospital. The computer program is used as part of EMS' pre-notification to the hospital when bringing in patients.

Now anticipating the arrival of stroke patients via EMS, emergency department personnel can activate 'EMS Direct to CT,' a new program developed to improve door-to-treatment times without a patient being first

examined in a critical care room. The quicker a patient undergoes a CT scan to determine if the stroke is caused by a clot or a bleed, the faster they're able to receive treatment.

"When someone is having a stroke and an area of their brain is not getting oxygen, there's also a surrounding area of brain tissue getting limited oxygen and is at-risk of compounding the potential for permanent damage," says Amedee. "This surrounding tissue is what we're trying to save when we give tPA or a mechanical thrombectomy, so the faster we're able to prepare for and administer intervention, the greater the likelihood a patient has a good outcome."

"Pre-notification is a big deal. It's an EMS intervention that can lead to shorter door-to-treatment times, and we know that can lead to better patient outcomes."

— Caryn Amedee

Before implementing feedback to EMS with a focus on improving patient documentation, Amedee says the hospital

Continued on page 4

was pre-notified of incoming stroke patients approximately 16 percent of the time. Today, that number stands at nearly 60 percent and climbing. Another positive outcome of the study has been EMS' interest in having Amedee provide educational trainings. Since the study's first phase, she has conducted more than 20 classes for nearly 300 EMS personnel, helping them better understand the advanced patient information and health history the hospital needs, as well as the different ways a stroke can present. In March, she provided training for the Providence Fire Department's EMS Division, the largest in the state.

"The biggest focus of these trainings is helping EMS recognize the broad spectrum of stroke patients to pre-notify for; no one thinks the 20 year-old is having a stroke, but it certainly happens," says Amedee.

Earlier this year, Amedee presented her findings on EMS feedback at the International Stroke Conference. There was a lot of interest among centers around the country to adopt feedback as part of their routine practices with EMS, and Amedee has sent her feedback form to other programs for implementation.

"This research is all about streamlining the process to make sure stroke patients are treated as quickly as possible," adds Amedee. "EMS is learning that their efforts, particularly pre-notification, can make a huge difference in a patient's outcome, and that's everyone's goal."



Catherine Murphy with her daughter Mary

The First of its Kind Locally, Stroke Camp Offers Survivors a Healing Experience



Following a stroke and the often difficult road to recovery, many survivors find they encounter another challenge: social isolation. It's an issue that can also affect caregivers due to the demands of helping a loved one. And left unattended, it, in turn, can lead to depression.

Through a unique program developed specifically for stroke survivors, Rhode Island Hospital is providing a unique opportunity to experience a day of activities designed to strengthen the body *and the mind*. And it's done in a group setting with people who all have the shared experience of living through a stroke. *"Stroke Camp is a program that gives satisfaction to many of us who have cared for patients*

in the hospital and provides an opportunity to experience life post-stroke with them," says Brian Silver, MD, Director of the Comprehensive Stroke Center at Rhode Island Hospital. *"It's also a wonderful time that allows people to be with others who have gone through what they've gone through, and that is incredibly healing."*

The concept of Stroke Camp first emerged in Michigan 20 years ago and was the stimulus for the creation of such a camp in Rhode Island. In 2014, Rhode Island Hospital launched the Ocean State's first Stroke Summer Day Camp with a team of physicians, nurses and other caregivers volunteering their time to lead the way. Consisting of music, entertainers, games, group discussions during meals, and educational offerings, the inaugural Stroke Camp in 2014 was held at the Gerry House on Rhode Island Hospital's campus and was extremely well-received by its 26 attendees. So much so that plans are being finalized to hold this year's Stroke Camp at Save the Bay's Providence Bay Center in the summer, allowing more space for participants, expanded activities and breakout sessions. *"We really want our participants to be relaxed and get the most out of this therapeutic opportunity,"* adds Dr. Silver. *"People leave Stroke Camp feeling integrated in a community again and I see this program becoming a long-standing tradition of what our hospital provides."*

If you have questions about giving to Rhode Island Hospital or any of its programs, please contact 401-444-6758 or RIHgiving@lifespan.org.

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