



## *The Importance of Neurocritical Care*

# Saving Lives and Enhancing Recovery in Central Texas

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“It happened so quickly. One moment she was perfectly fine, then the next, she stopped talking normally and slumped over,” said Cindy’s husband. “Will she ever be able to walk again? Will she be able to hold her children again?”

Neurointensivist Dr. Shahed Toossi explained to Cindy’s family that she had suffered an acute subarachnoid hemorrhage from a ruptured aneurysm in her brain. The aneurysm was repaired by an endovascular surgeon, providing the initial treatment to ensure there wasn’t ongoing bleeding.

As Cindy’s family looked relieved, Toossi continued to explain that the patient wasn’t fully out of the woods yet. The coming days and weeks would be spent in a dedicated neurocritical care unit where she would be getting specialized care from a multidisciplinary team with expertise in caring for patients suffering from neurologic emergencies.

Toossi explained that the woman would be receiving frequent neurologic assessments that may prompt rapid interventions to ensure she wouldn’t develop further neurological complications. Furthermore, Toossi warned that it may be a long road ahead, as recovery from neurologic emergencies often takes many weeks to months and would likely entail intensive rehabilitation. (Cindy is a pseudonym out of respect

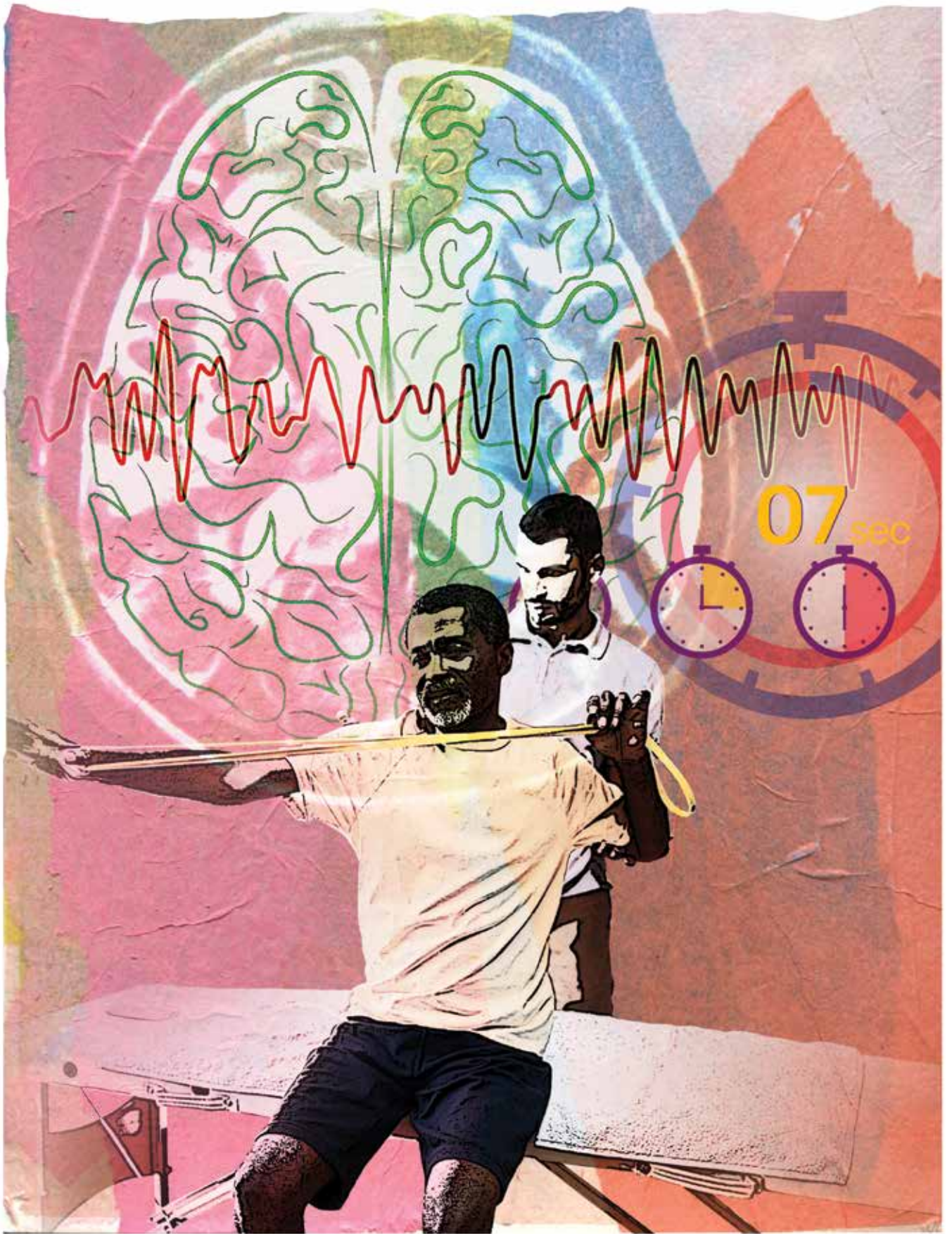
for her privacy.)

In the not-too-distant past, suffering from an acute neurological emergency such as a high-grade subarachnoid hemorrhage was often associated with severe disability or even death. With the rise of advances in emergency neurocritical care, this is no longer necessarily the case.

Neurocritical care is a specialized field of medicine focused on the management of severe, life-threatening illnesses that affect the central and peripheral nervous system. Some examples of disorders treated by neurocritical care experts include acute intracerebral hemorrhage, acute ischemic stroke, seizures, neuromuscular emergencies, traumatic brain injury and swelling in the brain. The goal of neurocritical care is to not only stabilize and treat the emergency, but to prevent secondary neurologic injury to improve both immediate and long-term outcomes.

### PROVIDING MULTIDISCIPLINARY CARE IN ONE SPACE

The first of its kind in Central Texas,<sup>1</sup> the neurocritical care unit at Dell Seton Medical Center





at The University of Texas, which expanded last year, provides advanced, multidisciplinary and compassionate care for patients with neurologic emergencies. The unit is part of Ascension Texas, which covers a 21-county primary service area in Austin and Waco and operates 11 adult acute care facilities and two pediatric acute care facilities.

According to many studies, one of which appeared in *Neurocritical Care*, patients who receive specialized neurocritical care have better outcomes, including improved survival rates and reduced disability.<sup>2</sup>

They are less likely to need long-term care, have shorter hospital stays and are more likely to return to their normal daily activities.

The presence of a neurocritical care unit in a community is crucial for several reasons:

- First, rapid access to specialized care improves survival rates and outcomes. When patients experience conditions like strokes, brain hemorrhages or traumatic brain injuries, every minute counts. A neurocritical care team is trained to quickly assess, diagnose and treat these life-threatening conditions, preventing further brain damage.

- Second, these units are equipped with state-of-the-art technology, such as intracranial pressure monitoring, continuous electroencephalogram (EEG) monitoring and advanced imaging, all of which are critical in diagnosing and managing neurological emergencies effectively.

- Additionally, neurocritical care units use a team-based approach that enhances patient care. These teams include neurointensivists, neurologists, neurosurgeons, critical care nurses, respiratory therapists and rehabilitation specialists who work together to create individualized care plans. This collaborative approach not only enhances patient outcomes but also provides crucial support to families navigating the uncertainties of neurological illness.

Over the coming weeks, Toossi watched Cindy's family at her bedside daily, holding her hand and speaking to her while she remained unre-

sponsive. Neurocritical care nurses, who have specialized education and training in caring for patients with acute brain injuries, checked on her frequently and alerted the medical team to the most subtle changes in Cindy's clinical condition.

These updates led to the rapid identification of neurologic decline from several pathologies. These included cerebral vasospasm, which is when blood vessels in the brain narrow abnormally and can occur following a subarachnoid hemorrhage. This narrowing of blood vessels can

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lead to ongoing, secondary brain injury. Cindy received medications and further procedures to treat these complications. She eventually woke up from her coma, engaged in physical therapy and ultimately returned home.

For patients like Cindy, a crucial aspect of neurocritical care is early rehabilitation. Patients who suffer from severe neurological conditions often face long recovery journeys, and beginning rehabilitation as early as possible significantly improves functional outcomes. Neurocritical care units integrate physical, occupational and speech therapy into patient care plans, even during the acute phase of illness. This early intervention can make the difference between a patient regaining their independence or facing long-term disability.

Beyond patient care, neurocritical care units serve as centers for medical research and education. They contribute to advancements in neurological treatments, ensuring that communities benefit from the latest innovations in stroke care, brain injury management and neuromonitoring techniques. These units also train future generations of neurologists, nurses and allied health care professionals, strengthening the overall health care infrastructure.



## ONLINE RESOURCE

# Health Progress Diversity and Health Equity Discussion Guide

*Health Progress'* Diversity and Health Equity Discussion Guide supports learning and dialogue to move toward a greater understanding of patients, care providers and ways to work together for improved diversity, equity and inclusion in Catholic health care settings.

### GUIDE INCLUDES

Introduction on how to use the materials.

*Health Progress* articles for reflection, discussion and as a call to action.

Opening and closing prayer from CHA's resources.

DOWNLOAD THE GUIDE AT  
[CHAUSA.ORG/EQUITYGUIDE](https://chausa.org/equityguide)  
OR SCAN THE QR CODE BELOW.



### EXPERT CARE WHEN SECONDS MATTER

Toossi received an update from Cindy's family recently. She was walking and laughing with her two young children, holding one of them up with her left arm. Her beautiful smile, although subtly different now given the mild facial weakness that only a trained neurologist may be able to detect, was the only outwardly visible sign of the incredible road to recovery that she undertook.

Cindy's outcome may have been different if she didn't have access to a dedicated neurocritical care unit and comprehensive stroke center, but fortunately, she did. And it made all the difference in the ultimate answer to her husband's initial questions: "Will she ever be able to walk again? Will she be able to hold her children again?" For Cindy, the answer to both those questions was a resounding "yes."

By ensuring that neurocritical care units are available within communities, we provide patients with the best possible chance of recovery and a return to normal life. These units are not just a luxury for large metropolitan hospitals — they are a necessity for every community, ensuring that when seconds matter, expert care is available to save lives and improve long-term outcomes.

The impact of neurocritical care extends far beyond hospital walls, touching families, workplaces and entire communities. It is an investment

in the health, resilience and well-being of society as a whole.

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### NOTES

1. Caroline McConnico, "UT's Dell Medical Center Expands Neurocritical Care Unit," *The Daily Texan*, August 4, 2024, <https://thedailytexan.com/2024/08/04/uts-dell-medical-center-expands-neurocritical-care-unit/>.
2. Owen Samuels et al., "Impact of a Dedicated Neurocritical Care Team in Treating Patients with Aneurysmal Subarachnoid Hemorrhage," *Neurocritical Care* 14, no. 3 (June 2011): <https://doi.org/10.1007/s12028-011-9505-z>; Dr. Katharina Maria Busl, Dr. Thomas Bleck, and Dr. Panayiotis Varelas, "Neurocritical Care Outcomes, Research, and Technology: A Review," *JAMA Neurology* 76, no. 5 (May 2019): <https://doi.org/10.1001/jamaneurol.2018.4407>.

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