Barrow Neurological Foundation

FISCAL YEAR 2022 STEWARDSHIP REPORT

Petznick Stroke Center

A **STROKE CAN OCCUR** at any time, in any place, and at any age. Many people associate strokes with devastating, lifelong effects, such as paralysis on one side of the body, difficulty talking and swallowing, aphasia, and memory loss. However, suffering a stroke doesn't have to lead to severe or permanent disability. The key to improving stroke outcomes is time, because time is brain. A stroke needs to be recognized and treated as quickly as possible to minimize life-altering and potentially fatal brain damage.

The Petznick Stroke Center at Barrow Neurological Institute, led by Michael Waters, MD, PhD, is certified as a Comprehensive Stroke Center (CSC) by The Joint Commission. This is the most demanding and highest possible designation in the stroke field, awarded only to hospitals that have specific abilities to receive and treat complex stroke cases. The Barrow stroke team is dedicated to carrying out the philosophy that every patient who has a stroke, or suspects that they may be having a stroke, deserves to be evaluated by a vascular neurology specialist.

976
outpatient clinic visits

12
active clinical trials

16
Telestroke sites across Arizona

BARROW NEUROLOGICAL INSTITUTE BY THE NUMBERS

CLINICAL IMPACT

91,800+
total number of patient visits

20,900+
telemedicine visits

5,500+
brain and spine surgeries

GLOBAL IMPACT

78
international research fellows and visiting scholars

PROGRAM ACCOMPLISHMENTS

In 2022, the Petznick Stroke Center once again earned the prestigious *Get With The Guidelines – Stroke Gold Plus Achievement Award* and *Target: Stroke Honor Roll–Elite Award* from the American Heart Association. The stroke team also welcomed Daniel Gonzalez, MD, as an attending vascular neurologist. Dr. Gonzalez was the 2022 Woodlyn T. Kendrick Fellow at Barrow and began his new role in the Stroke Center upon graduating from the fellowship program.

The Stroke Center implemented a full-service neurosonology lab, which utilizes transcranial Doppler (TCD) ultrasonography for the evaluation and treatment of stroke. TCD ultrasound is a non-invasive procedure that measures blood circulation in the brain with sound waves. Barrow is the first medical facility in Phoenix to provide TCD ultrasound technology for stroke in both an inpatient and outpatient setting, averaging more than 140 appointments per month.

To provide patients with expert stroke care as quickly as possible, the Stroke Center has expanded services outside of the physical clinic space. The second Barrow Emergency Stroke Treatment Unit was delivered in spring 2022. The mobile unit is outfitted with the latest stroke treatment technology, allowing the team to bring emergency room care curbside to more stroke victims throughout the Valley. The Telestroke program connects Barrow vascular neurologists with other community hospitals and free-standing emergency rooms virtually in real time to evaluate patients, review brain images, and initiate treatment. The Telestroke program also supports sites with ongoing education, including onsite training, stroke consult simulations, and educational packets. There are currently 16 Telestroke sites across Arizona.

RESEARCH ADVANCEMENTS

The Petznick Stroke Center has 12 active studies, five of which are being funded by the National Institutes of Health (NIH). In 2021, Barrow was selected as one of only 30 sites in the nation to participate in the NIH-funded DISCOVERY trial, a novel study that aims to pave the way for treatments to mitigate cognitive deficits seen in stroke. To date, Barrow has one of the highest participant enrollments out of all participating study sites.

The Stroke Center is involved in four NIH-funded StrokeNet studies, one of which investigates whether using adjusting continuous positive airway pressure (aCPAP) therapy will help promote healing after a stroke

occurs. The other studies look at certain cholesterol medications that could be linked to the occurrence of a hemorrhagic stroke, as well as the effectiveness of a blood-clot medication in preventing secondary strokes. In addition, the Stroke Center is participating in two international studies that aim to standardize diagnostic criteria for TCD ultrasound and reduce the frequency of invasive diagnostic procedures.

Andrew Ducruet, MD, an endovascular neurosurgeon, focuses his research on developing successful neuroprotection therapies to improve stroke outcomes. The complement C3a receptor, a part of the body's immune response, plays a central role in ischemic stroke by triggering neuro-inflammation. Dr. Ducruet and his team have been working on a preclinical translation of a novel C3a receptor antagonist for the treatment of ischemic stroke. They are now expanding the study to include an investigation of the C3a receptor's role in vascular-induced dementia.

ON THE HORIZON

Barrow has a dedicated ACGME-accredited vascular neurology fellowship program, which traditionally supports two fellows each year. In July 2022, the Petznick Stroke Center welcomed two new vascular neurology fellows, Cynthia Dickerson, DO, and Zain Ashary, MD. As the Stroke Center continues to expand, the team would like to add a third vascular neurology fellow each year.

The neurosonology lab will continue to expand services with the addition of two new pieces of diagnostic equipment. The equipment combines traditional TCD ultrasound and duplex ultrasound, allowing the team to evaluate blood flow in the brain "live" without having to expose patients to radiation or contrast. It also provides real-time information rather than static information seen in other imaging modalities.

BARROW NEUROLOGICAL INSTITUTE BY THE NUMBERS

RESEARCH

397
active research studies

791
patients enrolled in clinical trials

$14 MILLION
in federal research grant support

DONOR IMPACT

$20 MILLION
total distributed to Barrow Neurological Institute, including:

$3.5 MILLION
designated to specific centers/programs

$15.4 MILLION
for basic, clinical, and translational research

$1.5 MILLION
in endowments

Michael Waters, MD, PhD, is the director of the Petznick Stroke Center and the Dorrance Chair of Vascular Neurology.

THANK YOU FOR YOUR SUPPORT

The generous support of donors like you allows the Petznick Stroke Center to continue carrying out its philosophy that every person who has a stroke deserves to be evaluated by a vascular neurology expert. We have been able to expand our footprint of vascular neurology expertise to provide even more stroke patients with life-saving care through the Telestroke program and our two mobile stroke units. This would not be possible without your support.

We have also expanded our research program with 12 active clinical trials and translational research efforts, in addition to educating the next generation of leading vascular neurologists. Philanthropy is the cornerstone of our ability to be successful in all of these endeavors. On behalf of the entire Barrow stroke team, thank you for your generosity and dedication.

With gratitude,

Michael F. Waters, MD, PhD
Dorrance Chair of Vascular Neurology
Director, Petznick Stroke Center
Chief, Division of Vascular Neurology, Barrow Neurological Institute

The mission of Barrow Neurological Foundation is simple: to be the catalyst of our donors' passion for transformation by providing the resources for Barrow Neurological Institute to achieve its mission of saving human lives through innovative treatment, groundbreaking research, and by educating the next generation of the world's leading neuroclinicians.

Barrow
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