



↑ Jina Youn, MD, is a neurologist in the Petznick Stroke Center and an assistant professor of neurology at Barrow Neurological Institute.

A stroke can happen to anyone at any time. In the United States, every 40 seconds someone has a stroke. Every four minutes, someone dies of a stroke.

The Petznick Stroke Center at Barrow Neurological Institute, led by Michael Waters, MD, PhD, is one of the most comprehensive stroke centers in the country. The expert team of vascular neurologists is committed to providing unsurpassed patient care, informing the community about stroke prevention, and conducting innovative research to find new ways of treating and preventing stroke.



10

active clinical trials



20 MINUTES

average time from entering mobile unit to tPA administration



15

telestroke sites across Arizona

BARROW NEUROLOGICAL INSTITUTE BY THE NUMBERS



CLINICAL IMPACT

77,600+

total number of patients
seen at Barrow annually

22,200+

telemedicine visits

5,700+

brain and spine surgeries



GLOBAL IMPACT

11

research fellows and
visiting scholars from
Brazil, Columbia, India,
Ireland, Pakistan, Russia,
Thailand, and Turkey

PROGRAM ACCOMPLISHMENTS

The Petznick Stroke Center has expanded significantly over the last several years, and has gained a national reputation for excellence in stroke care. In July 2021, the Petznick Stroke Center was certified as a Comprehensive Stroke Center (CSC) by The Joint Commission. This certification 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 most critical element of stroke treatment is time—because time is brain. Last year, the Petznick Stroke Center was able to order a second Barrow Emergency Stroke Treatment Unit, allowing them to bring rapid emergency room stroke care directly to patients throughout the Valley. A study presented at the 2021 American Stroke Association International Stroke Conference found that stroke patients treated in a mobile stroke unit received the clot-busting

medication tPA more quickly and more often than those taken to the emergency room via ambulance, leading to significantly better recoveries. On average, it takes about 20 minutes from when a patient enters the Barrow mobile stroke unit until tPA administration, less than half the time that is considered the gold standard for emergency room care.

The Petznick Stroke Center has expanded its Telestroke program to 15 different healthcare sites throughout Arizona. Telestroke connects Barrow vascular neurologists with community hospitals in real time to ensure stroke patients get the best treatment, regardless of their location. Barrow vascular neurologists are able to examine and evaluate patients, review brain images, initiate treatment, and determine if a patient should be transferred to Barrow for higher level care, all virtually. The Petznick Stroke Center recently welcomed a Telestroke Project Manager to support their efforts at the 15 different telestroke sites and identify and bring on additional sites. This will enable them to continue expanding their footprint of cutting-edge stroke care.



RESEARCH ADVANCES

Over the past year, the Petznick Stroke Center has continued to grow its research portfolio in basic, translational, and clinical science. One of Dr. Waters' colleagues, Andrew Ducruet, MD, an endovascular neurosurgeon, has been working to develop successful neuro-inflammation therapies that have the potential to improve clinical outcomes in patients with



stroke. Neuroprotective therapeutics help save neurons in the brain from irreversible damage, thus reducing the impact of stroke and improving functional recovery. Dr. Ducruet is currently building off his preclinical data supporting the translational efficacy of the novel C3aR antagonism in treating ischemic stroke. This has never been tested in stroke before and will bring Dr. Ducruet and his team one step closer to a clinical translation of this promising therapeutic.

Clinical trials in the Petznick Stroke Center continue to increase, with 10 active studies and four additional studies opening soon. Additionally, Barrow is one of only 30 sites in the nation to be selected to participate in the NIH-funded DISCOVERY trial, which is a first-in-kind study designed to measure the cognitive impact of stroke. This groundbreaking research will pave the way to treatments aimed at mitigating deficits seen in stroke, such as memory, language, and behavior.

ON THE HORIZON

The Petznick Stroke Center is currently developing and implementing a full-service neurosonology lab to capitalize on underutilized ultrasound technology as a tool for the evaluation and treatment of stroke. Transcranial Doppler (TCD) ultrasonography is a non-invasive procedure that uses sound waves to measure blood circulation in the brain, sparing the patient irradiation and contrast agents. TCD ultrasound can be used to detect ischemic stroke, which occurs when a blood clot forms in a blood vessel in the brain. While Barrow has some TCD ultrasound technology, it has yet to be fully utilized in the neurovascular area. Dr. Waters would like to use this technology to not only diagnose strokes, but also as a preventative tool. He plans to hire another full-time team member to help implement TCD ultrasound in both the inpatient and outpatient setting, making Barrow the first medical facility in Phoenix to do so.

The Petznick Stroke Center is committed to training the next generation of vascular specialists. Barrow has a dedicated ACGME-accredited vascular neurology fellowship program. Traditionally, there are two vascular fellows each year, but as the Petznick Stroke Center continues to grow and expand, it has set the goal of adding a third fellow each year.

BARROW NEUROLOGICAL INSTITUTE BY THE NUMBERS



RESEARCH

320+

active research studies

791

patients enrolled in clinical trials

\$11.7 MILLION

in federal research grant support



DONOR IMPACT

\$28 MILLION

total distributed to Barrow Neurological Institute, including:

\$21 MILLION

designated to specific centers/programs

\$5 MILLION

for basic, clinical, and translational research

\$1.7 MILLION

for endowed research chairs



↑ Michael Waters, MD, PhD, director of the Petznick Stroke Center, visits with patient LaVon Medina, who credits the Barrow mobile stroke unit with saving her life.

THANK YOU FOR YOUR SUPPORT

The generous support of donors like you allows the Petznick Stroke Center to continue its pursuit of fulfilling the philosophy that every person who has a stroke, or suspects that they may be having a stroke, deserves to be evaluated by a vascular neurology stroke expert. Philanthropy is the cornerstone of our ability to provide the best in patient care today, while conducting groundbreaking research for the stroke treatments of tomorrow. On behalf of the entire team in the Petznick Stroke Center, we thank you for your generosity and dedication.

With gratitude,
Michael F. Waters, MD, PhD
Dorrance Chair of Vascular Neurology
Chief, Division of Vascular Neurology and Stroke Program Director
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.