

Stroke Program



Barrow stroke patient Carole Westling is grateful for the expertise of her doctor, Jina Youn, MD.

→ **EVERY 40 SECONDS**, someone in the United States has a stroke. Every four minutes, someone dies of a stroke. In addition to being the fifth leading cause of death in the United States, stroke also is a leading cause of long-term disability. The most critical element in caring for people who have had a stroke is time – time is brain. Put into perspective, by the time you finish reading this, an American will have suffered a stroke!

A stroke needs to be recognized and treated as soon as possible to minimize brain damage. Quick treatment is the key to saving stroke victims; the likelihood of a good outcome falls 10 percent for every 30 minutes that blood flow to the brain is blocked. Untreated for over an hour, your brain ages more than four years due to the loss of neurons.

Barrow has one of the most experienced programs in the country and cares for more stroke patients than any other care center in the southwest.



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EVERY 4 MINTUES
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Stroke is the
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ABOUT BARROW
NEUROLOGICAL INSTITUTE



#1 IN ARIZONA
#11 IN THE UNITED STATES
for neurology and neurosurgery



CLINICAL IMPACT

92,515

BNI Clinic visits

3,135

number of neurosurgeries

1,578

number of spine surgeries

\$2.8 MILLION

amount of charity care



GLOBAL IMPACT

54

visiting scholars, research fellows and observers from Mexico, India, Egypt, Pakistan, UK, Russia, China, Chile, Spain, Brazil, Japan, France, Italy, Kingdom of Saudi Arabia, Indonesia, Turkey, Germany, Poland, Colombia, Philippines, Israel, Argentina and Thailand.

PROGRAM ACCOMPLISHMENTS

Under the leadership of Michael Waters, MD, PhD, Barrow's Stroke Program doubled its volume in the last two years and has gained a national reputation for exceptional clinical care and innovative translational science and clinical research programs.

The Barrow Emergency Stroke Treatment Unit (BESTU), is a state-of-the-art mobile emergency room focused on treating stroke victims. Stroke clinicians in the field are able to communicate with doctors at Barrow via telemedicine and get patients the expert care they need before they even arrive at the hospital, providing the fastest, best treatment possible. The mobile stroke unit is currently one of just 12 in the nation and is the first to operate around the clock in a city with a population of greater than one million.



Michael Waters, MD, PhD

In FY2019, the BESTU was called to the homes of more than a thousand people believed to be having a stroke. This unit has revolutionized the treatment of stroke in the field, in one case administering the clot-busting drug tPA within *SIX* minutes of arrival. The speed with which patients receive treatment improves outcomes by minimizing brain damage.

Phoenix Fire Department and Barrow Neurological Institute won the 2019 CFSI / Masimo Excellence in Fire Serviced-Based EMS Award for their work with the BESTU. Established in 2010, the Congressional Fire Services Institute (CFSI) created the awards to honor fire departments for innovations in the delivery of pre-hospital emergency care.

Barrow vascular neurologists have increased remote coverage for acute stroke to include all Dignity Health facilities in Arizona. With this tele-presence, a vascular neurologist will be able to examine and evaluate patients in real time, review brain images, and initiate treatment- getting the right patient, to the right place, at the right time is the goal.

In addition to treating stroke patients with the BESTU and telemedicine, Barrow utilizes leading-edge diagnostic tools. Transcranial Doppler can be used to monitor the progression of some brain conditions and help determine more accurately patients who may benefit from neurosurgery. Physicians are also examining whether a small MRI-compatible recorder can monitor patients around the clock for cardiac arrhythmia that can lead to a stroke. This strategy helps identify the appropriate preventative treatment for stroke.



“There are angels all around us. I was truly blessed with a team of them who saved and touched my life that night and throughout my entire recovery. Thank you.”

MYRNA (JODY) JOHNSON, BARROW PATIENT

*Barrow stroke patient Jody Johnson ↑
thanks Richard Hernandez, a member of
the BESTU crew that saved her life.*

RESEARCH ADVANCES

Last year, Barrow’s Stroke Program joined a select group of academic research centers as part of the NIH-funded StrokeNet consortium. This group of elite stroke centers is leading the way in recruiting and enrolling patients in critical research focused on prevention, acute treatment, and recovery.

ON THE HORIZON

In addition to sharing Barrow’s expertise to the benefit of today’s stroke patients, we are leading the way in better treatments for tomorrow. Barrow’s Stroke Program would expand its reach even further and serve even more stroke patients with the addition of another mobile unit. Currently, the BESTU answers calls within a 20-minute radius of its location. Another unit would allow Barrow to double its coverage area bringing expert care to many more people.

Current basic and translational research focuses on developing new drugs to reduce the damage of a stroke. One drug is for neuroprotection, putting a wall around the stroke’s core in order to protect healthy brain tissue. The other is for neuroplasticity, increasing the brain’s ability to recover after a stroke. Barrow researchers are also investigating the genetic mechanisms of stroke to discover if there are ways to prevent strokes from occurring in people who may be genetically predisposed.



RESEARCH

320

active research studies

839

patients enrolled in
clinical trials

\$9 MILLION

in federal research
grant support



DONOR IMPACT

\$3.98 MILLION

for basic and
translational research

\$3.65 MILLION

for strategic initiatives
including Barrow
Aneurysm & AVM Research
Center, Barrow Artificial
Intelligence Center,
neuroimaging and stroke

\$1.26 MILLION

for education and
fellowship programs

\$2.52 MILLION

for community
outreach programs



THANK YOU FOR HELPING US SAVE LIVES

The philanthropic support of Barrow donors is instrumental in improving the lives of stroke patients. Without your partnership, we would not be able to bring timely, life-saving treatments into the community. You have also provided critical funding to test our ideas leading to grants from other sources. Your support has the potential to bring even better care to stroke survivors around the world. I cannot thank you enough.

With Gratitude.

Dr. Michael Waters

↑ *LaVon Medina, shown with Dr. Michael Waters, is thankful for the Barrow Emergency Stroke Treatment Unit, which saved her life on Thanksgiving Day.*

Barrow Neurological Foundation raises awareness and funding for patient care, medical education, community outreach and research offered at Barrow Neurological Institute. Barrow is an internationally-recognized leader in neurology, neurosurgery and neuroscience research, treating patients with a wide range of conditions, including brain and spinal tumors, concussion and brain and spinal traumas, neuromuscular diseases, stroke, cleft and craniofacial disorders, and cerebrovascular disorders. It is home to several centers of excellence, including the Ivy Brain Tumor Center, Muhammad Ali Parkinson Center and Gregory W. Fulton ALS and Neuromuscular Disease Center. www.SupportBarrow.org



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