



Carolinas HealthCare System

The Neuro Report

Fall 2013

Carolinas HealthCare System Neurosciences Institute

STRATEGIC GUIDANCE AND VISION LEAD TO COMPREHENSIVE, INNOVATIVE CARE

A convergence of two critical sets of challenges – the need to provide leading-edge treatment for complex neurological and neurosurgical disorders, and the imperative to transform the delivery of healthcare services – was the impetus for Carolinas HealthCare System to leverage its size, scope and clinical expertise, culminating in the creation of Carolinas HealthCare System Neurosciences Institute.

TRANSFORMATIONAL CARE

The commitment of Carolinas HealthCare System to deliver advanced neurological and neurosurgical subspecialty care and lead the development of novel healthcare paradigms is evident in the system's investments in expert medical teams, support staff and technologies. "We are leading the way to advanced neuroscience care through a truly unique academic model," said Anthony L. Asher, MD, FACS, a neurosurgeon and co-medical director of Carolinas HealthCare System Neurosciences Institute. "The primary emphasis of our scientific efforts will be the enhancement of patient-centered care."

At the same time, strategic relationships are being formed with patients. They are being encouraged to take



(L to R) Robert Mitchell, MD, associate medical director, Carolinas HealthCare System Neurosciences Institute; Sanjay Iyer, MD, co-medical director, Carolinas HealthCare System Neurosciences Institute; and Anthony L. Asher, MD, FACS, co-medical director, Carolinas HealthCare System Neurosciences Institute

an active role in their own care. "We are committed to helping patients and their families navigate the current healthcare environment by providing education and awareness about the impact of neurological disorders," said Dr. Asher. "We acknowledge the challenges they face and help them understand the complexity of their care. This active engagement enables patients and their families to become better partners with us in meeting these challenges."

CONTINUED ON PAGE 6

Physician Leader
Advancing
National Quality
Initiative in
Neurosurgery

Specialized
Epilepsy Care
for the Region

Brooks: A Career
Devoted to
Patients With ALS

Neurosciences
Institute Spotlight:
A Leader in
Neurological Care
and Research

Carolinas HealthCare System Neurosciences Institute

PHYSICIAN LEADER ADVANCING NATIONAL QUALITY INITIATIVE IN NEUROSURGERY



Anthony L. Asher, MD, FACS, Neurosurgeon and Co-Medical Director, Carolinas HealthCare System Neurosciences Institute

During his tenure as president of the Congress of Neurological Surgeons, Anthony L. Asher, MD, FACS, a neurosurgeon and co-medical director of Carolinas HealthCare System Neurosciences Institute, was instrumental in the creation of a national system that measures patient outcomes in all neurosurgical subspecialty areas. The result was the National Neurosurgery Quality and Outcomes Database (N2QOD), which Dr. Asher directs.

DATA COLLECTION LEADS TO QUALITY BENCHMARKING

"We initiated the effort with disorders of the spine, because approximately 70 percent of neurosurgical procedures performed are related to these disorders," said Dr. Asher, who is co-medical director of Carolinas HealthCare System Neurosciences Institute. "A year and a half after launch, the National Neurosurgery registry has become the largest cooperative spine registry in North America."

A product of the NeuroPoint Alliance (NPA) – designed to meet the quality care and research needs of neurosurgeons and neurosurgical practices, national organizations, healthcare systems and others – the N2QOD's ability to track practice patterns and patient outcomes enhances Carolinas HealthCare System Neurosciences Institute's commitment to helping neuro-clinicians and clinician-scientists improve the quality, efficiency and, ultimately, the value of care.

PROVIDING CRITICAL LEADERSHIP

Dr. Asher's national leadership role with the National Neurosurgery clinical registry supports the Neurosciences Institute's goal of becoming a national leader in the study of neurosurgical conditions. The clinical registry is projected to include more than 10,000 patients by the end of the year.

The clinical registry is in the process of creating coordinated practice data collection platforms in every neuroscience



... THE NATIONAL NEUROSURGERY REGISTRY HAS BECOME THE LARGEST COOPERATIVE SPINE REGISTRY IN NORTH AMERICA.

— Anthony L. Asher, MD, FACS

A DISTINGUISHED CAREER

Anthony L. Asher, MD, FACS, is a national leader in neurosurgery, with special interests in neuro-oncology, skull base surgery, minimally invasive spine surgery and trigeminal neuralgia. His roles include:

- Founder and Director, National Neurosurgery Quality and Outcomes Database
- Past President, Congress of Neurological Surgeons
- Member, Board of Directors, American Association of Neurological Surgeons
- Director, American Board of Neurological Surgery

ACCESS THE REGISTRY

For more information about the National Neurosurgery Quality and Outcomes Database, visit CarolinasHealthCare.org/NeuroReport1.

subspecialty, including cerebrovascular surgery, spine surgery, brain injuries and brain tumors. The comprehensive information available through the clinical registry will be absolutely foundational for advancing quality and value in neurosurgical care delivery.

CLINICAL TRIALS AND RESEARCH

Healthcare providers and scientists at Carolinas HealthCare System Neurosciences Institute are also involved in a variety of early- to late-phase surgical and medical trials in brain tumor therapy. "We also perform significant spine research and are one of the busiest clinical spine centers in the United States," Dr. Asher said. "Many individuals on our team are doing fantastic, leading-edge research."

Specialized Epilepsy Care for the Region

Approximately 10,000 to 20,000 people in the southeast suffer from epilepsy – and about 30 percent of these patients don't have adequate control of their condition. In an effort to address the healthcare problems in this patient population, Carolinas HealthCare System Neurosciences Institute developed a two-pronged approach to epilepsy care that controls seizures and returns patients to a more normal way of life.

COORDINATED CARE

Carolinas Epilepsy Network offers advanced diagnostic tests as well as surgical and nonsurgical treatments for adults and children. This unified program allows for system-wide provider collaboration and provides a road map for referring physicians and hospitals to identify resources.

"It's important not to let seizures go on for years, because it becomes increasingly difficult to control them, and they can begin to affect other parts of the brain," said Bruce Mayes, MD, medical director of epilepsy and neurodiagnostic services at Carolinas Medical Center.

Without specialized care, patients continue to have seizures, and the disorder becomes increasingly difficult to control. "Patients with suspected seizures should be referred to an epileptologist as soon as possible so they can benefit from a host of treatment options," said Ilona Humes, MD, medical director of epilepsy and neurodiagnostic services at Carolinas Medical Center-NorthEast.

NATIONALLY RECOGNIZED EPILEPSY CARE

Carolinas HealthCare System Neurosciences Institute's Epilepsy Program has received Disease-Specific Care Certification in Inpatient Epilepsy by The Joint Commission. We provide specialized epilepsy care for adults and children at our Level III and Level IV centers, which operate in accordance with guidelines established by the National Association of Epilepsy Centers. For more information, visit CarolinasHealthCare.org/NeuroReport1.

STATE-OF-THE-ART SURGICAL OPTIONS

Patients who suffer from uncontrolled seizures may be candidates for various surgical procedures. Carolinas HealthCare System Neurosciences Institute offers appropriate multidisciplinary evaluation with audio-video EEG monitoring and advanced neuro-imaging modalities, including functional MRI, SPECT and PET scans. Wada testing and brain mapping through depth or subdural electrodes are often required to determine whether a patient may benefit from the following surgical options:

- Corpus callostomy
- Focal cortical excision
- Hemispherectomy
- Multilobar resection
- Multiple subpial transection
- Temporal or frontal lobectomy

"All the surgical expertise and latest techniques can be found here, which makes us unique to our region," said Michael Heafner, MD, lead neurosurgeon with Carolinas HealthCare System Neurosciences Institute's Epilepsy surgical program.

Neuro-imaging is also used extensively to tailor surgical procedures. "Our neurosurgeons have had great success with vagal nerve stimulation," Dr. Heafner said.

NONSURGICAL OPTIONS

When resective brain surgery isn't appropriate or safe, other approaches may be warranted, including:

- Vagal nerve stimulator implant (an operation to place a small pacemaker for the vagus nerve in the neck)
- Diet modification through a dedicated ketogenic diet clinic

EARLY INTERVENTION IS KEY

Since many patients have not been adequately evaluated, a major thrust of the program is to further define and encourage earlier referrals for patients who are on medication and still experiencing seizures. "Once a patient is referred to us – either through a primary care physician, neurologist or epileptologist – we perform diagnostic procedures and determine the most appropriate care," said Dr. Humes. "Epilepsy is an under-recognized condition, and physicians should seek early intervention and treatment."

CONNECT WITH OUR EXPERTS

Physicians who are interested in referring patients to Carolinas HealthCare System Neurosciences Institute's epilepsy services can call 704-512-5640.

A Career Devoted to Patients With ALS

BENJAMIN RIX BROOKS, MD, EARNS INTERNATIONAL ACCLAIM



Benjamin Rix Brooks, MD, Research Scientist, Carolinas HealthCare System Neurosciences Institute

Having devoted his entire career to amyotrophic lateral sclerosis (ALS) and its patients, Benjamin Rix Brooks, MD, is now exhorting his colleagues to prepare for an “end game” for this devastating disease.

Dr. Brooks’ wide and varied work – beginning at the National Institutes of Health in the mid-1970s

and including seminal research on the causes of ALS – has made him a national thought leader in the field. Most recently, his razor-sharp focus earned him the International Forbes Norris Award from the International Alliance of ALS/MND Associations and the World Federation of Neurology Research Group on Motor Neuron Diseases. The award is given annually to a physician recommended by peers in the ALS/MND community for exhibiting exceptional care and compassion in the study and management of ALS/MND.

“I was pleasantly surprised,” said Dr. Brooks, director of the Carolinas Neuromuscular/ALS-MDA Center, who was the 19th recipient of the award and only the 10th American to be so honored. “Forbes Norris was an amazing person and had some keen insights, as well as being very patient-oriented. That’s what the award is primarily for.”

GROUNDBREAKING RESEARCHER

Dr. Brooks was a lead investigator in a 2011 paper published in the journal *Nature* that, for the first time, identified a common cause of all forms of ALS – a defect in the protein degradation pathway in the neurons of the brain and spinal cord. “The hope, of course, is that it ultimately translates into further understanding of the mechanisms whereby abnormal proteins are cleared from the brain and spinal cord,” said Dr. Brooks, also an adjunct professor of neurology at the University of North Carolina School of Medicine-Charlotte campus.

In February 2013, Dr. Brooks represented Carolinas HealthCare System Neurosciences Institute at a national



Benjamin Rix Brooks, MD, discusses research findings with a medical school student.

NATIONALLY RECOGNIZED ALS CARE

Carolinas HealthCare System’s ALS program was the first and only one in the nation to receive Disease-Specific Care Certification by The Joint Commission. Carolinas HealthCare System Neurosciences Institute also is the first and only organization in the nation to receive this designation for Parkinson’s disease, multiple sclerosis and epilepsy. If you would like to refer a patient, call 704-512-5603.

FOLLOW THE CONVERSATION

For more information about Dr. Brooks’ ALS research, visit:
CarolinasHealthCare.org/NeuroReport1.

meeting of the Food and Drug Administration. There, he advocated that ALS patients on non-invasive ventilation, used at night to rest the diaphragm, be allowed to participate in clinical trials – an opportunity they’re typically not afforded because of their advanced disease.

“I keep talking to my colleagues, saying we have to establish the end game,” he said. “What we’ve been trying to do is maximize the treatment outcomes available to us.”

A Leader in Neurological Care and Research

CAROLINAS MEDICAL CENTER-NORTHEAST EFFORTS EARN NATIONAL RECOGNITION



Robert Mitchell, MD
Associate Medical
Director, Carolinas
HealthCare System
Neurosciences Institute

Carolinas Medical Center-NorthEast, a leading facility of Carolinas HealthCare System Neurosciences Institute, offers highly regarded stroke and epilepsy treatments as well as innovative Alzheimer's research. These inpatient and outpatient neuroscience programs continue to garner national recognition for outstanding care.

The hospital recently received multiple awards from the American Heart Association and the American Stroke Association for its advanced stroke services. The Joint Commission also designates the facility as a Primary Stroke Center.

"Our stroke program is recognized because we have a neurologist on staff who evaluates stroke patients immediately upon arrival, based on triage protocol," said Phyllis Wingate, president of CMC-NorthEast. "Our neurosciences program is set apart from others by the quality and commitment of our providers. They are the driving force that makes this program so successful."

COLLABORATION KEY TO LEADING-EDGE CARE

At NorthEast Neurology, a physician practice affiliated with Carolinas HealthCare System, an expert staff treats outpatients for a variety of conditions, including epilepsy, multiple sclerosis and Parkinson's disease. Neurologists closely collaborate with specialists in neurosurgery, neuropsychology and rehabilitation services to provide patients with a comprehensive care plan.

Neurologic science requires interdisciplinary care and NorthEast Neurology teammates share that mindset across the board. "Coordination and collaboration are key," said Robert Mitchell, MD, associate medical director of Carolinas HealthCare System Neurosciences Institute and lead physician at NorthEast Neurology.



BY CONNECTING THE VAST RESOURCES OF CAROLINAS HEALTHCARE SYSTEM, WE CAN PROVIDE HIGH-QUALITY AND INNOVATIVE NEUROLOGICAL CARE TO PATIENTS THROUGHOUT THE REGION.

— Robert Mitchell, MD

EXPERT CARE

For more information about the neurological services, research and clinical trials at Carolinas Medical Center-NorthEast, visit CarolinasHealthCare.org/neuroscience.

INNOVATIVE RESEARCH AND CLINICAL TRIALS

Both Wingate and Dr. Mitchell are enthusiastic about new, global clinical research focusing on Alzheimer's disease. Carolinas HealthCare System is one of 22 sites in the United States – and one of 50 worldwide – chosen to participate in a trial that will perform blood tests on healthy patients to estimate their risk for Alzheimer's disease and treat randomly chosen, high-risk subjects with a drug to test whether it can prevent the onset of Alzheimer's disease.

"Participation in this study will put us on the map in terms of research," said Wingate. "The scientific community recognizes our expert capabilities to study this marker."

Other important ongoing research initiatives include examining a genetic predisposition toward certain types of stroke and analyzing the risks of multiple sclerosis medications.

According to Dr. Mitchell, "By connecting the vast resources of Carolinas HealthCare System, we can provide high-quality and innovative neurological care to patients throughout the region."



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CONTINUED FROM PAGE 1

COMPREHENSIVE SERVICES, DELIVERED SEAMLESSLY

We are combining cross-disciplinary collaboration with innovative outreach programs, such as virtual care, to establish a versatile and comprehensive neurosciences program equipped to meet the needs of physicians and their patients throughout the region.

“Electronic health records will facilitate the dissemination of a clinical care pathway that’s pivotal to our innovative, patient-centered care model,” said Sanjay Iyer, MD, co-medical director of Carolinas HealthCare System Neurosciences Institute, chair of the Department of Neurology and director of the Center for Movement Disorders.

The goal is to create a seamless, integrated network with multiple access points. “We are working to ensure that all patients have full access to the continuum of care that’s available to them throughout the System,” said Dr. Iyer.

For example, we are looking into the efficacy of using an Internet-based program to keep in contact with patients who have mobility issues and can’t get into a physician’s office on a regular basis. “We are constantly collaborating to find ways to create value for our patients, including eliminating the need to travel to several locations for care,” Dr. Iyer said.

POISED FOR THE FUTURE

This inaugural issue of *The Neuro Report* is an introduction to the breadth and depth of the world-class care, and nationally and internationally renowned experts at Carolinas HealthCare System Neurosciences Institute. We look forward to providing you with important updates throughout the year and well into the future.



ELECTRONIC HEALTH RECORDS WILL FACILITATE THE DISSEMINATION OF A CLINICAL CARE PATHWAY THAT’S PIVOTAL TO OUR INNOVATIVE, PATIENT-CENTERED CARE MODEL.

— Sanjay Iyer, MD

COMPREHENSIVE SERVICES

Carolinas HealthCare System Neurosciences Institute provides comprehensive clinical care in the following areas:

- Cerebrovascular stroke
- Comprehensive dementia
- Epilepsy (adult/pediatric)
- Functional neurosurgery
- Movement disorders
- Multidisciplinary neuro-oncology
- Multiple sclerosis
- Neurocritical care
- Neuro-trauma
- Neuromuscular disease/ALS
- Neuro-rehabilitation
- Pediatric neurology and neurosurgery
- Skull base surgery
- Spine
- Peripheral nerve disorders
- Trigeminal neuralgia

INFORMATION FOR REFERRING PHYSICIANS

Visit CarolinasHealthCare.org/neuroscience if you would like more information about referring patients to the programs and services available at Carolinas HealthCare System Neurosciences Institute or call 704-512-5603.