Today, the Health System has 36 full-time attending and voluntary neurosurgeons, and cerebrovascular and endovascular surgeons, as well as more than 200 full- and part-time attending and voluntary neurologists.

The combination of our outstanding departments is gaining national recognition. Kravis Children’s Hospital at Mount Sinai has been ranked, for the first time, in pediatric neurology & neurosurgery by U.S. News & World Report in its 2014-2015 “Best Children’s Hospitals” guidebook. We are also pleased that Susan B. Bressman, MD, Executive Vice Chair of Neurology for the Mount Sinai Health System, was named a “National Physician of the Year” for clinical excellence by Castle Connolly Medical Ltd., publisher of the annual America’s Top Doctors guides. We also congratulate the 31 neurosurgery and neurology physicians throughout the Health System named in the 2014 Top Doctors: New York Metro Area edition.

As the Health System becomes more fully integrated, we see only continued opportunities to advance innovation in medicine and research, expand training for our more than 2,000 residents, and improve patient care and outcomes.

COMPLEX CASES

Treating a Pediatric Arteriovenous Malformation and Dilated Vein of Galen

In May 2013, a 4-year-old girl born with multiple growing cutaneous vascular lesions from vascular malformations, and a history of gastrointestinal bleeding from gastrointestinal vascular lesions, was evaluated at Mount Sinai Roosevelt. After a comprehensive work-up, a high-flow arteriovenous malformation and/or fistulization in the parasagittal region on the left hemisphere—with a markedly dilated vein of Galen—was found.

Alejandro Berenstein, MD, Director, Pediatric Neuroendovascular Surgery Program, proceeded with a cerebral angiogram and treatment, with occlusion of a large AV fistula with Cyanoacrylate. Following the procedure, the child was brought to the PICU awake and responsive. Upon exam, she was not moving the right upper and lower extremity. After an urgent CT scan, an intraparenchymal hemorrhage was diagnosed. Saadi Ghatan, MD, Director, Pediatric Neurosurgery, Mount Sinai Health System, placed an intraventricular drain. Seven days after surgery, the patient was discharged home where she remained on a course of steroids and she continued clinical progress. Follow-up treatment between July 2013 and March 2014 included angiograms, embolization with the use of a detachable tip microcatheter, and microsurgical resection to treat residual malformations. The patient is fully recovered and neurologically normal.

1) Lateral view by MR imaging shows big fistula (white arrow). 2) Lateral view of left vertebral artery shows one of the big fistulas (black arrow). 3) Lateral view of superselective injection prior to closing fistula (black arrow points to tip of catheter). 4) Lateral vertebral angiogram following embolization and surgery showing total occlusion of fistula (compared to figure 2).
Susan B. Bressman, MD, Receives Top Honor for Clinical Excellence

Susan B. Bressman, MD, a leading researcher, clinician, and educator in movement disorders and other neurological conditions, was named a “National Physician of the Year” for clinical excellence by Castle Connolly Medical Ltd., publisher of the annual America’s Top Doctors® guides.

Dr. Bressman is Executive Vice Chair of Neurology for the Mount Sinai Health System. An expert in Parkinson’s disease, dystonia, and essential tremor, Dr. Bressman is credited with helping to identify four genes for dystonia.

Castle Connolly selected seven award recipients from among the thousands of nominations submitted by physicians and leaders of major medical centers, specialty hospitals, teaching hospitals, and regional and community medical centers throughout the United States. The award honors dedicated physicians whose skills have improved the lives of countless people throughout the world.

Using Virtual-Reality Simulation to Improve Brain Surgery Outcomes

Virtual-reality simulation, designed to improve outcomes and reduce complications in patients undergoing brain surgery, is being pioneered at the Icahn School of Medicine at Mount Sinai. Neurosurgical simulation is an innovative training tool for neurosurgery residents and provides experienced surgeons the ability to plan and rehearse complex procedures.

The Brain Surgery Simulation Program, led by Joshua B. Bederson, MD, Professor and Chair of Neurosurgery, is using three simulators: the NeuroTouch, the Surgical Rehearsal Platform, and the Surgical Navigation Advanced Platform. Each has 3D software and handheld surgical controls to provide visual, tactile, and audio feedback to the practitioner. A computer-generated “score” evaluates key measures, such as the amount of tumor removed, and the extent of bleeding and damage to healthy tissue.

Mount Sinai’s Simulation Program team includes neurosurgeons, as well as neurologists, radiologists, residents, MD/PhD students, statisticians, and computational scientists.

Neurosurgical simulation allows surgeons, who were previously unable to rehearse brain surgery using patient-specific data, the ability to input brain images using various modalities to create a 3D rendering of the patient’s cranial anatomy. For neurosurgery residents, the simulators offer a unique opportunity to conduct simulated operations from surgeries that already took place. For neurosurgery attendings, the simulation planning process may help in reducing time spent conducting a surgical procedure, which ultimately reduces patient risk and improves the likelihood of a successful outcome.

J Mocco, MD, MS, a cerebrovascular and endovascular neurosurgeon with clinical interests in stroke, brain aneurysms, subarachnoid hemorrhage, arteriovenous malformations, cavernous malformations, carotid artery stenosis, intracranial stenosis, and brain tumors, has joined Mount Sinai as Professor and Vice Chair for Education in the Department of Neurosurgery, and Director of the Neuroendovascular Surgery Program.

Dr. Mocco previously was Associate Professor of Neurological Surgery, and Radiology and Radiological Sciences at Vanderbilt University Medical Center.

Dr. Mocco received his medical degree from the Columbia University College of Physicians and Surgeons. He completed his Master of Science in Biostatistics from the Mailman School of Public Health at Columbia University, an internship in General Surgery at New York-Presbyterian Hospital, and a research fellowship in Neurological Surgery from Columbia University. He also completed a residency in Neurological Surgery at the Neurological Institute of New York and a fellowship in Endovascular Neurosurgery at the University of Buffalo.

Dr. Mocco’s research interests focus on translational efforts to treat ischemic and hemorrhagic stroke.

Adilia Hormigo, MD, PhD, a specialist in primary brain and spinal cord tumors, central nervous system metastases, and the neurological complications of cancer, was named Director of the Neuro-Oncology Program at the Mount Sinai Health System and Associate Professor in the Department of Neurology, Medicine (Hematology/Medical Oncology), and Neurosurgery.

Dr. Hormigo completed residency programs at the University Hospital of Lisbon Medical School and Portuguese Institute of Oncology, and at New York Presbyterian-Weill Cornell Medical College of Cornell University, and trained as a neuro-oncology fellow at Memorial Sloan-Kettering Cancer Center. Her research focus is on tumor microenvironment—specifically, developing serum markers for more effective treatments for brain tumor patients.