

Quality & Outcome Measures

2009 HIGHLIGHTS

In the last three years, the Mischer Neuroscience Institute has established a range of clinical and academic programs and has recruited nearly two dozen nationally recognized specialists and subspecialists. The Institute is now home to 10 centers of excellence that are supported by a state-of-the-art neuroscience intensive care unit with 32 private rooms and several other dedicated inpatient facilities to provide a full continuum of care for neurological patients.

Our Physician Team

Staff Physicians	44
Clinical Residents and Fellows	34
Research Fellows	13
Advanced Practice Nurses	4
Physician Assistants	13

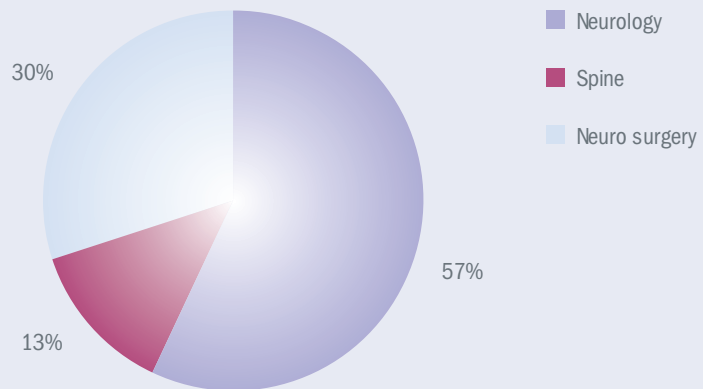
Inpatient Facilities

Neuro ICU Beds	32
Neuro Step Down Beds (IMU)	12
Neuro Acute Care Beds	48
Neuro Rehabilitation Beds	23
Stroke Beds	8
Dedicated Operating Rooms	5
EMU Beds - Pediatrics	6
EMU Beds - Adult	6

Discharge Status



Inpatient Volume



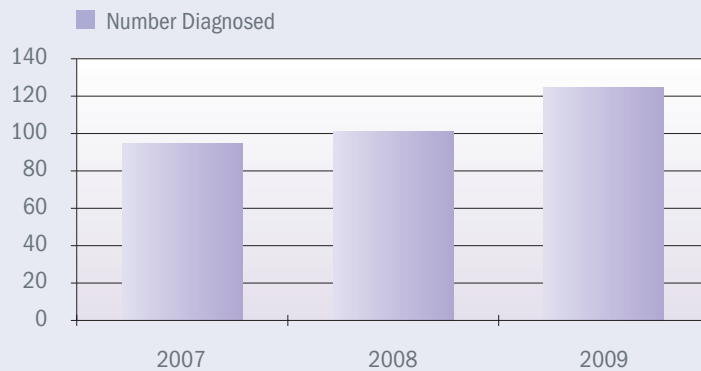
Quality & Outcome Measures

BRAIN TUMOR

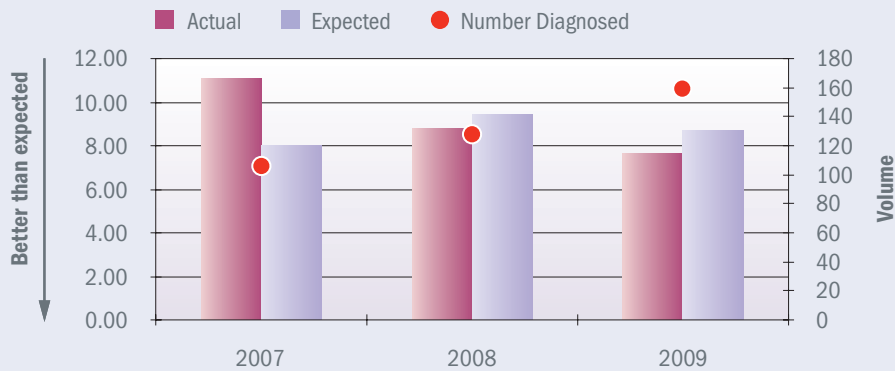
Caregivers at the Mischer Neuroscience Institute are improving outcomes of patients with brain tumors through innovative treatments such as stereotactic radiosurgery, which virtually eliminates the risk of hemorrhage and substantially minimizes the risk of damage to associated vital structures.

These breakthrough approaches have allowed the Institute to drive continued growth in the number of patients treated each year for brain tumors while at the same time improve quality indicators to be well below the national benchmark established by the University HealthSystem Consortium.

Brain Tumor Volume



Brain Tumor (all types): Length of Stay



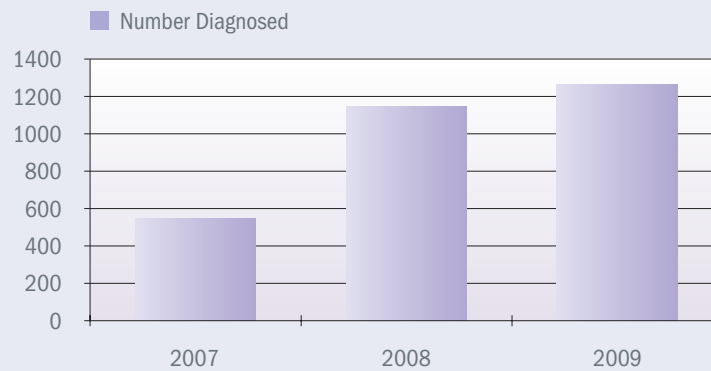
Brain Tumor (all types): Inpatient Mortality



CEREBROVASCULAR

The Mischer Neuroscience Institute has been a long-standing leader in the treatment of patients suffering from cerebrovascular conditions. In the past year, the Memorial Hermann-Texas Medical Center Campus became the first hospital in the Texas Medical Center to be designated as a Primary Stroke Center by the state of Texas for our success in rapidly treating patients with approved therapies shown to reduce paralysis and other disabilities caused by stroke.

Cerebrovascular Volume



Stroke Core Measures Chart

CLINICAL MEASURE	MEASURE DESCRIPTION	NATIONAL AVERAGE	GWTG STROKE PERFORMANCE MEASURE GOAL	MEMORIAL HERMANN ¹		
				2007	2008	2009 ²
IV tPA use (eligible < 2 hour arrival)	Acute ischemic stroke patients who arrive at the ED within 120 minutes of onset of stroke symptoms and who receive IV tPA within 180 minutes of onset of stroke symptoms	72.8%	85.0%	100%	100%	100%
Early antithrombotics (< 48 hour arrival)	Patients with ischemic stroke or TIA who receive antithrombotic therapy by the end of hospital day 2	97.0%	85.0%	96.5%	100%	99.0%
Antithrombotics at discharge	Patients with ischemic stroke or TIA prescribed antithrombotic therapy at discharge (e.g., warfarin, aspirin, other antiplatelet drug)	98.9%	85.0%	97.5%	98.0%	96.9%
Anticoagulation for atrial fibrillation	Patients with ischemic stroke or TIA with atrial fibrillation who are discharged on anticoagulation therapy	98.4%	85.0%	100%	96.9%	100%
Deep venous thrombosis (DVT) prophylaxis	Percent of patients at risk for DVT who received DVT prophylaxis by the second hospital day	89.5%	85.0%	93.3%	98.3%	100%
Lipids measure (statin at discharge)	Percent of ischemic stroke or TIA patients with LDL > or = 100 mg/dL OR on cholesterol reducer prior to admission who are discharged on cholesterol-reducing drugs	88.3%	85.0%	88.7%	88.1%	87.1%
Smoke cessation counseling	Percent of smokers who receive smoking cessation advice or medication at discharge	93.6%	85.0%	98.4%	92.2%	92.2%

¹ These numbers are for the fiscal year (July - June)

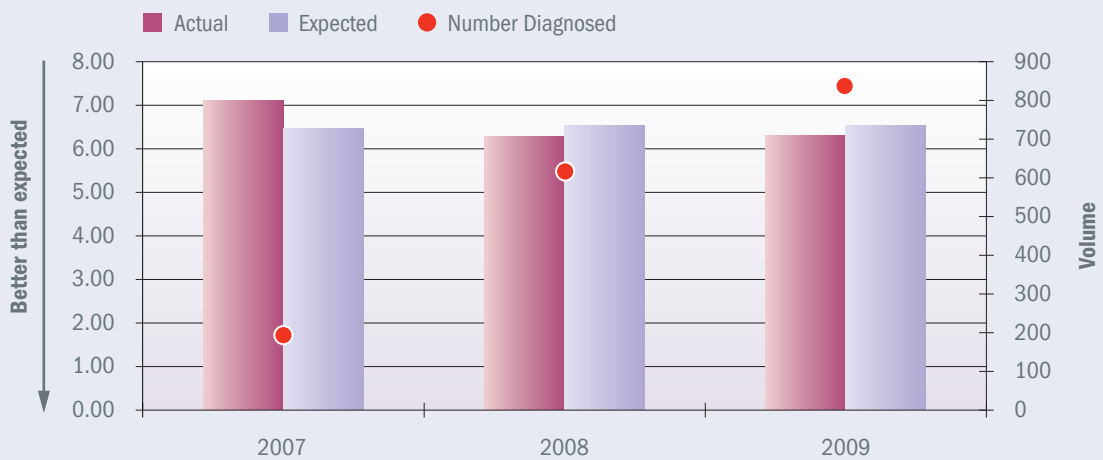
² Data represents July 2008 - December 2008

Quality & Outcome Measures

CEREBROVASCULAR

The highly-skilled team at the Mischer Neuroscience Institute is trained to provide the right treatment as quickly as possible to patients suffering from an intracranial hemorrhage. Our outcomes for this patient population have steadily improved throughout the years, and in 2009, we were well below the national benchmark established by the University HealthSystem Consortium.

Intracranial Hemorrhage: Length of Stay

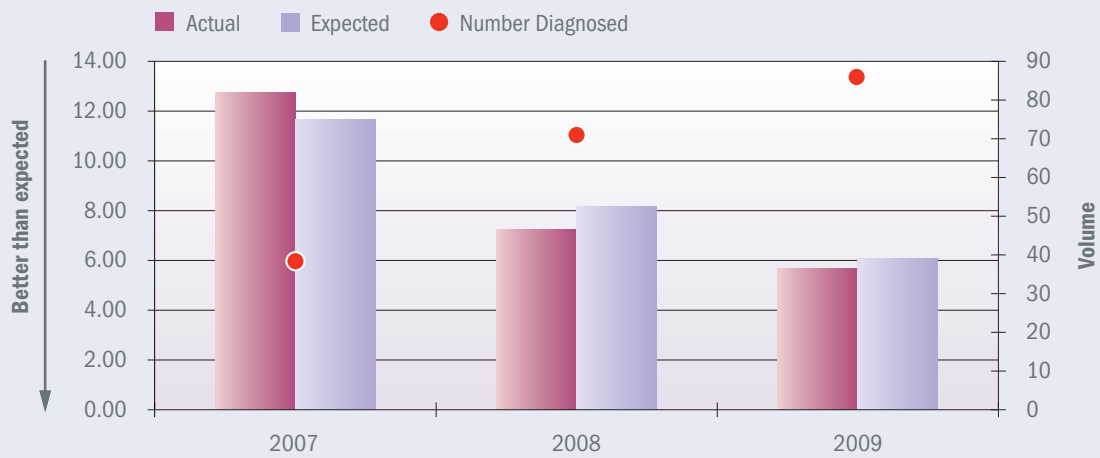


Intracranial Hemorrhage: Inpatient Mortality



Physicians and clinicians at the Mischer Neuroscience Institute employ a broad range of diagnostic approaches to determine the most appropriate treatment method for patients with an unruptured aneurysm. The number of those diagnosed with the condition continues to rise annually, while the average length of stay and inpatient mortality rate remains below the University HealthSystem Consortium's expected standard.

Aneurysm Unruptured: Length of Stay



Aneurysm Unruptured: Inpatient Mortality

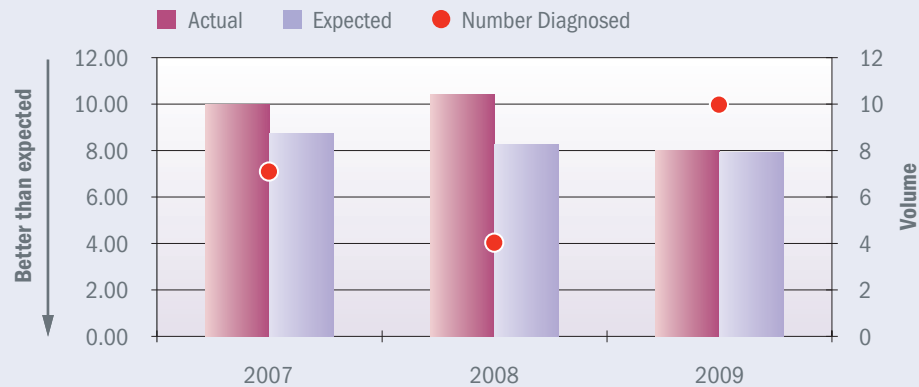


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SPINE

Patients experiencing spinal conditions at the Mischer Neuroscience Institute benefit from innovative treatment and rehabilitation methods designed to minimize damage to the nervous system and restore limited abilities. From the treatment of degenerative spine disorders to caring for those suffering from a traumatic spine injury, our outcomes are a testament to the effectiveness of our comprehensive, multidisciplinary approach.

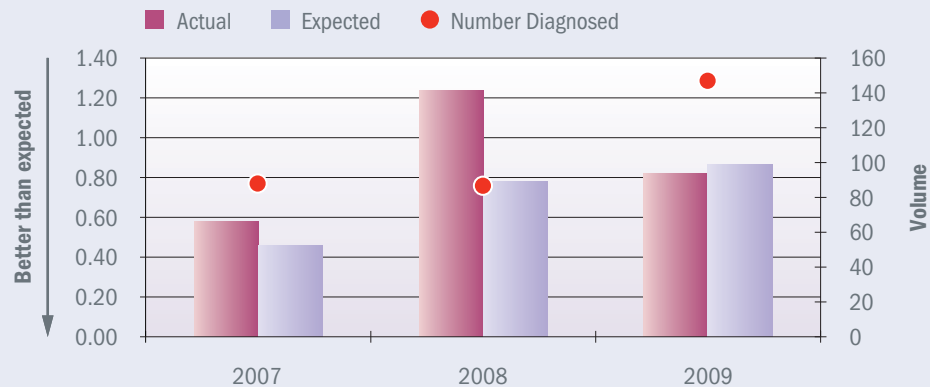
Spinal Tumor: Length of Stay



Spinal Tumor: Inpatient Mortality



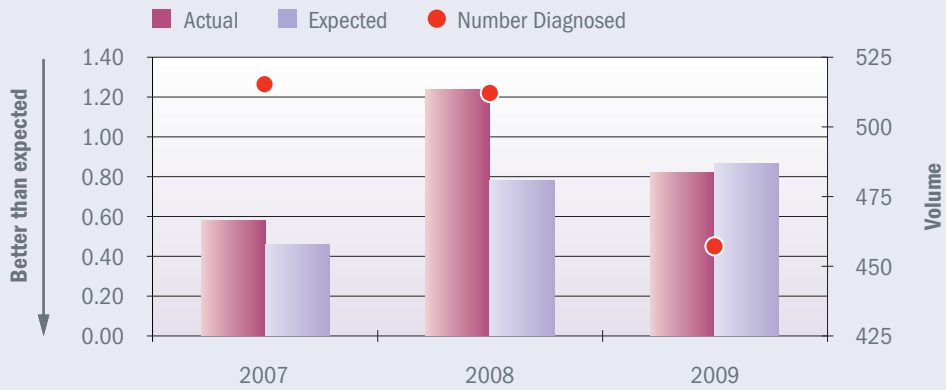
Spine Trauma: Length of Stay



Spine Trauma: Inpatient Mortality



Spine Degenerative or Elective: Length of Stay



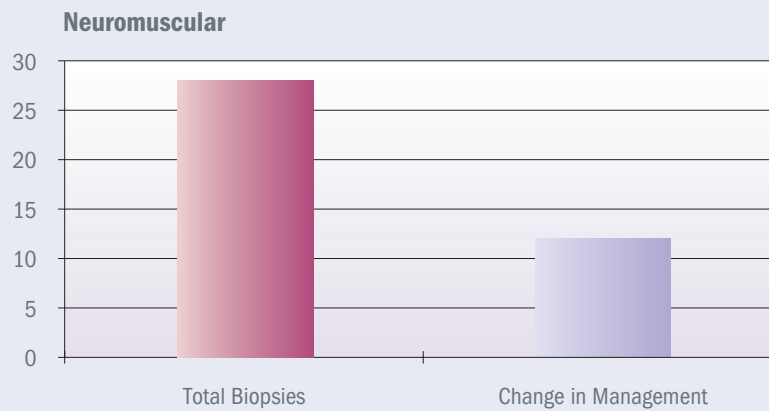
Spine Degenerative or Elective: Inpatient Mortality



Quality & Outcome Measures

NEUROMUSCULAR

Physicians and clinicians at the Mischer Neuroscience Institute are improving the diagnostic capabilities for patients suffering from neuromuscular disorders through our Muscle and Nerve Laboratory designed to help identify abnormalities at a pathologic/microscopic level. In 2009, biopsies from nearly half of the patients sent to the lab resulted in the initiation of new treatments, alteration or cessation of existing treatments, or the establishment of a new diagnosis.



Total number of muscle and nerve biopsies (N=28) evaluated in Muscle and Nerve Laboratory over last 9 months.

Results of biopsies led to change in the management of patients (N=12 (43%)).

The changes include initiation of new treatments, alteration or cessation of existing treatments, or establishing a new diagnosis.

MOVEMENT DISORDERS

Caregivers at the Mischer Neuroscience Institute and the UT MOVE Clinic at the University of Texas Medical School at Houston are at the forefront of treating patients with movement disorders and are pioneering a number of innovative approaches to manage a range of conditions. Among them is bilateral deep brain stimulation (DBS) targeting the subthalamic nucleus in controlling motor symptoms of Parkinson's disease. One study indicates that executive function is not improved with DBS alone, but adjuvant levodopa therapy combined with DBS provides the best control over motor symptoms, stabilizes executive function and improves quality of life outcome measures.

**Table 1. Adjuvant Medication Reduces Post-DBS Impulsivity:
a Saccade Study in Parkinson's Disease**

ASHLEY J. HOOD, PhD, MYA C. SCHIESS, MD, ANNE B. SERENO, PhD

	CONTROL	MED-OFF	MED-OFF+DBS	MED-ON+DBS
N	8	8	8	8
Gender	5m / 3f	5m / 3f	5m / 3f	5m / 3f
Age (yrs)	54.1 (10.1)	52.6 (11.5)	–	–
Education (yrs)	14.7 (1.7)	15.4 (1.4)	–	–
MMSE	29.7 (.76)	29.8 (.46)	–	–
Duration of disease (yrs)	–	6.4 (2.6)	7.6 (2.6)	7.6 (.93)
Duration of DBS (mos)	–	–	10.6 (7.1)	10.6 (2.5)
Hoehn & Yahr	–	2.8 (.82)	–	–
UPDRS-Total	–	57.1 (16.8)	32.0 (11.2)	20.0 (9.9)
UPDRS-Motor	–	30.6 (10.5)	14.5 (5.9)	7.3 (4.4)
UPDRS-Cognitive	–	3.1 (2.5)	1.3 (1.5)	1.3 (1.6)

MULTIPLE SCLEROSIS

A collaboration between Memorial Hermann-Texas Medical Center and The University of Texas Medical School at Houston, the Multiple Sclerosis research Group (MSRG) has established a track record of supporting cutting-edge research to provide the most advanced care for patients.

Among them is the use of sophisticated MRI techniques to detect intracortical lesions in patients with MS. One study by the MSRG indicates that there is a significant correlation between the presence of cortical lesions and the degree of Cognitive Impairment, as well as a trend between Cognitive Impairment and Disease Severity. Cortical lesions are not detected on conventional MRI and the MSRG is a pioneer in the field of cortical lesion identification. Dr. Flavia Nelson the Principal investigator of the study in conjunction with Novartis Pharmaceuticals began conducting a multicenter trial in 2009 to study the effect of Fingolimod (FTY-720) on cortical lesions in patients with primary progressive MS. Fingolimod is the first oral drug recently recommended for FDA approval for the treatment of relapsing forms of MS. The objective is to evaluate the effect of treatment with Fingolimod at daily oral doses of 0.5 mg vs. placebo on the number, size of cortical gray matter lesions and to correlate the above findings with measures of disease progression and disability. This will be the first clinical trial to incorporate detection of CL in an ideal patient population, PPMS, known for developing a higher cortical lesion load. It will improve the understanding of CL behavior and response to a novel immunomodulator over an extended period of time. This is the first study of its kind.

Lesions by Cognitive Impairment

Figure 1. Mean and 95%CI of the number of cortical lesions by type of lesion and level of cognitive impairment

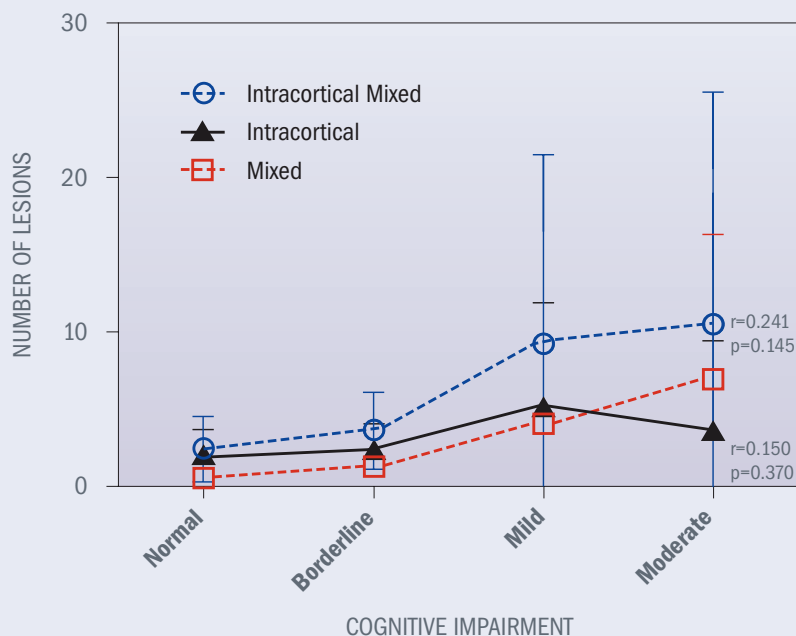
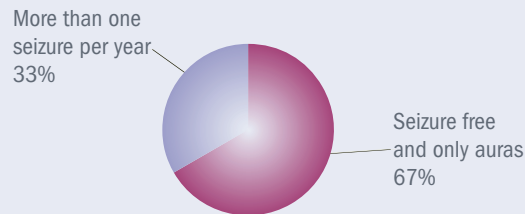


Figure 1. Mean and 95% CI of the number of cortical lesions by type of lesion and level of cognitive impairment.

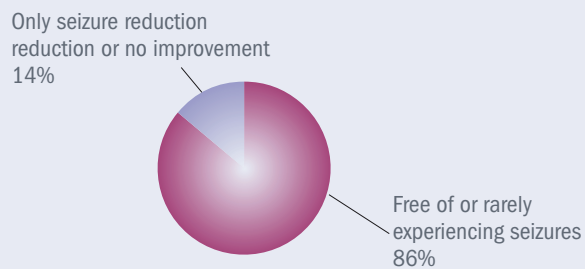
EPILEPSY

The Texas Comprehensive Epilepsy Program team continues to lead the way in improving outcomes for patients with epilepsy, including research, surgeries and therapies. Between October 2004 and April 2010, the epilepsy team treated a total of 177 craniotomies in 110 patients including 63 invasive electrophysiology cases, 51 unilateral SDE and 9 cases awake for resections.

Weizer Class



Engel Class



Available on 42/46 patients > 12 months post-op. follow up.
Mean 16 months; Median 12 months

Morbidity

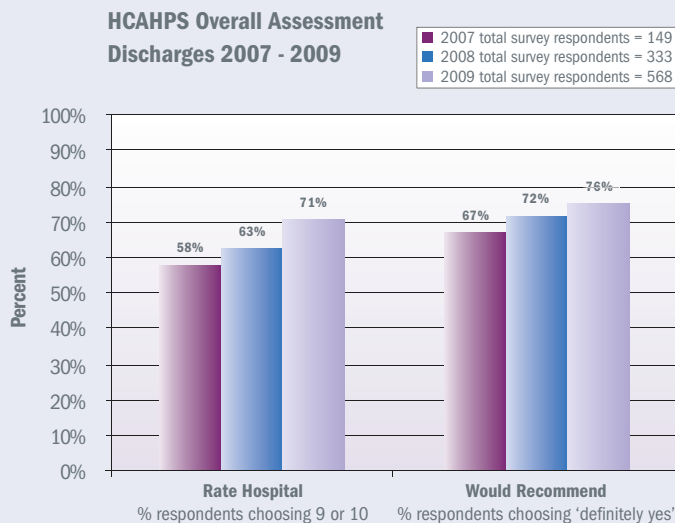
Return to OR - non union of bone flap	1
CSF leak (return to OR)	2
Possible infn - SDE removal	1
Probable infn - SDE removal	1
Return to OR for evac of hematoma	2

Data is from 96 craniotomies in first 65 patients.

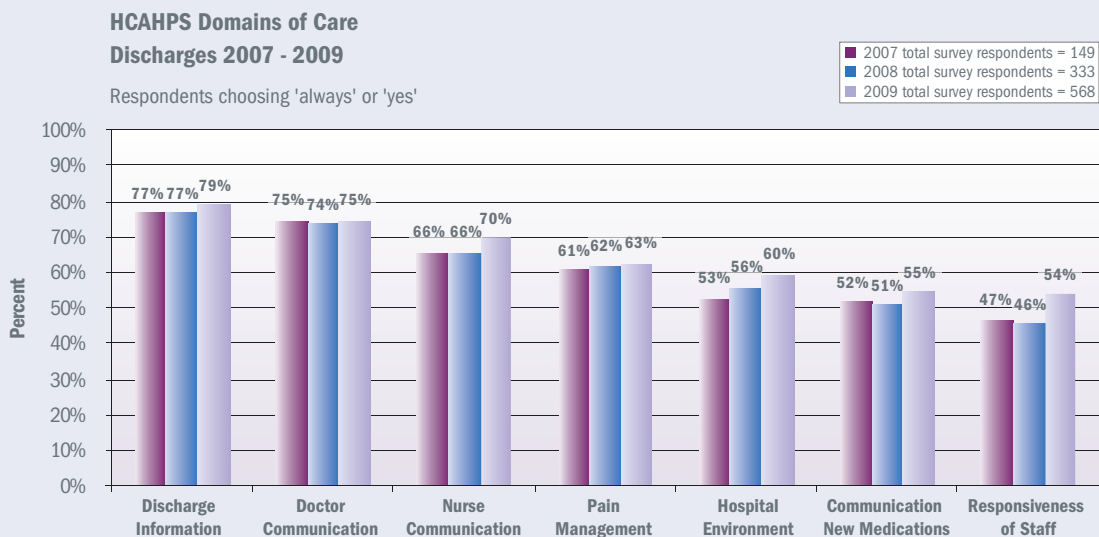
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PATIENT SATISFACTION/EXPERIENCE

Patients from around the world choose to receive treatment at the Mischer Neuroscience Institute not only for our high-quality outcomes, but also for our reputation in providing patients with exceptional experiences. Data gathered by the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey indicates consistent improvements year over year in seven domains considered critical to ensuring a high level of satisfaction.



Source: Press Ganey, national hospital survey vendor, for all surveys received from patients discharged from 3 Jones, 7 Jones/NSICU, 4 Jones/NIMU/Stroke and EMU
HCAHPS scores have not been adjusted to account for a survey mode administration change



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