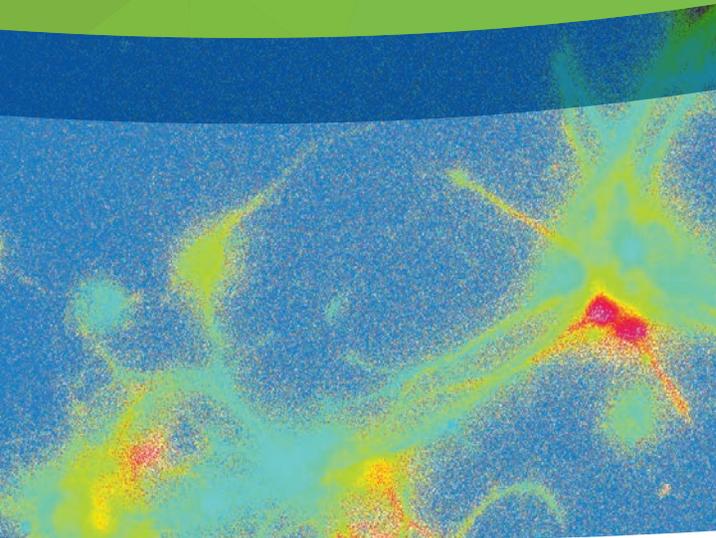


# PATHWAYS TO THE FUTURE:

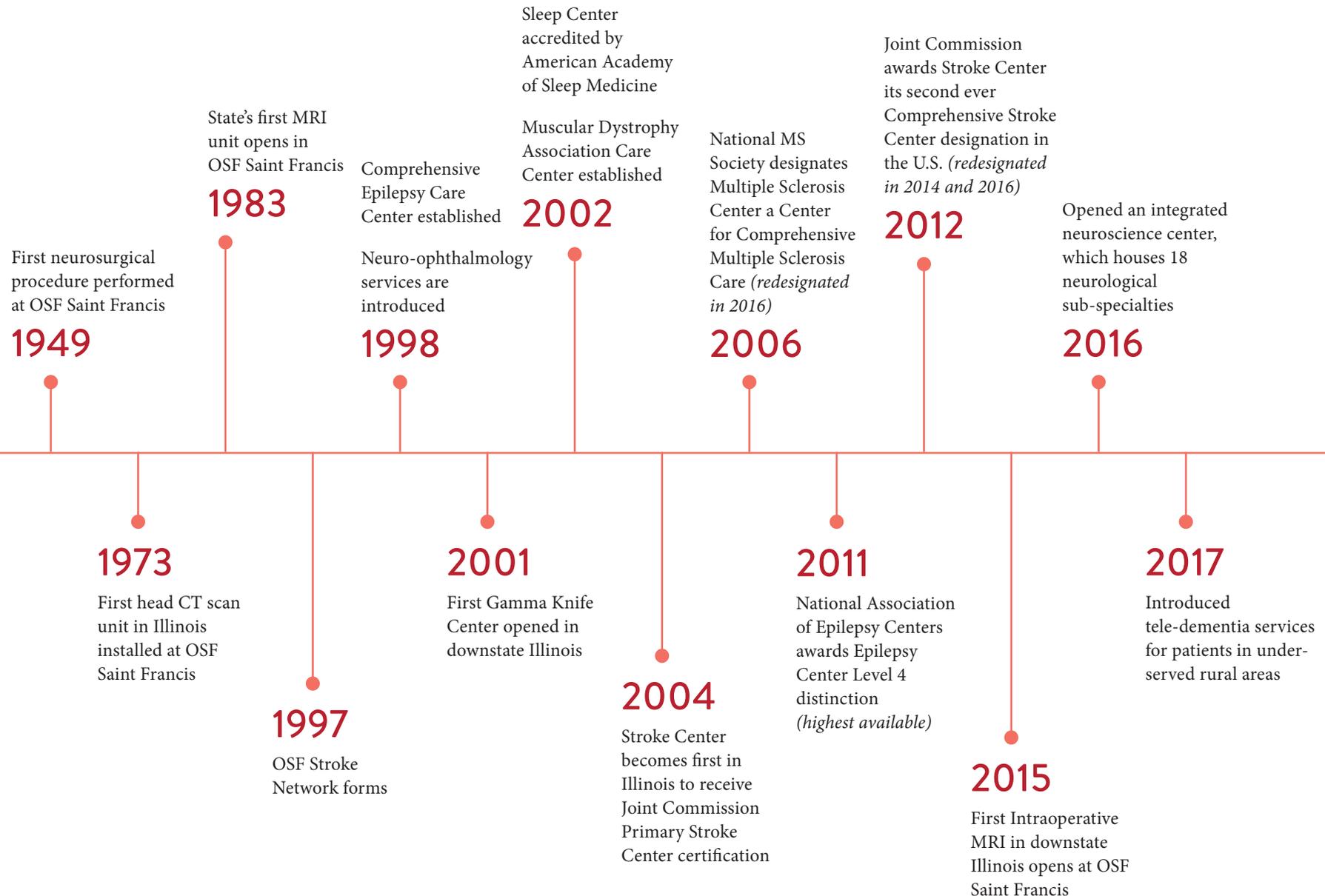
*Innovating Neurological Care  
in the Midwest*



**OSF<sup>®</sup> HEALTHCARE**  
Illinois Neurological Institute

# Ahead of the Curve

## A History of Embracing Innovation



# A Message from the CEO



OSF HealthCare Illinois Neurological Institute is a comprehensive neuroscience service line transforming the delivery of neurological, neurosurgical and rehabilitation care for patients throughout the U.S. In my three years as CEO, collaboration among our clinicians, innovators and research faculty has defined our approach as we strive for the highest quality neurological care.

With 11 hospitals in Illinois and Michigan and nearly 19,000 employees, OSF HealthCare serves a population of 3.5 million people. Our subspecialized clinical neurological team now includes 30 neurologists, eight neurosurgeons, five physiatrists and 40 advanced practice providers.

OSF HealthCare is the major teaching affiliate of the University of Illinois College of Medicine at Peoria, with residencies in neurology and neurosurgery. With ongoing research in brain tumor, cerebrovascular diseases, Alzheimer's disease and other fields, Illinois Neurological Institute is helping lead the way in advancing neurological care.

Patients need access to the best care available, yet neurologists are in short supply. We are meeting both of those challenges at once by training specialized advanced practice providers and actively growing our teleneurology services to provide remote care for patients.

We also believe in the importance of our physicians' well-being. Neurology and neurosurgery are demanding fields. By helping our physicians find balance, we provide better care to our patients and ourselves. That's why I am championing our initiative to provide the education and work environment needed for each physician to find the balance they need.

We are as committed to our physicians, staff and patients as we are to furthering the fields of neurology and neurosurgery. In the pages that follow, you will see more about who we are and what we are doing to advance neurological science and patient care.

Anthony M. Avellino, MD, MBA



# OSF HealthCare: Driven by a Timeless Mission

OSF HealthCare is a Catholic health care system that spans across Illinois – from Alton in the south to Rockford in the north; from the eastern border with Indiana to the western border with Iowa. We have also established a thriving health care community in the Upper Peninsula of Michigan.

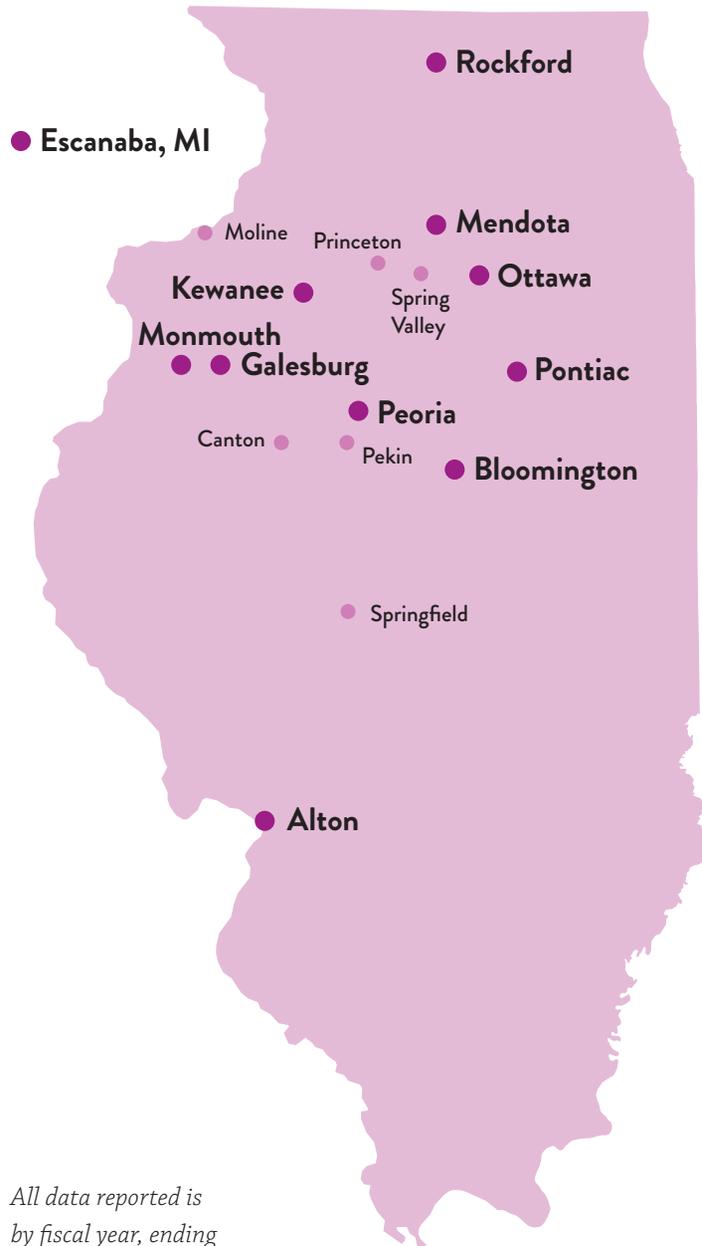
We have a history of embracing innovation and technology in service of our simple Mission, which has driven our work since The Sisters of the Third Order of St. Francis first set up shop in Peoria in 1877. Even as our organization has grown from a single hospital in Peoria to a system of 11 hospitals, many clinics and physician offices and a team nearly 19,000-strong, our Mission has remained the same.

**In the spirit of Christ and the example of Francis of Assisi, the Mission of OSF HealthCare is to serve persons with the greatest care and love in a community that celebrates the Gift of Life.**

This drives us to always seek out new and better ways to care for those who need us. It drove us to be one of the first to use helicopters as emergency patient transportation. It drove us to open OSF HealthCare Children’s Hospital of Illinois. It drove us to open Jump Simulation & Education Center – a top 10 health care innovation center in the U.S., according to Modern Healthcare – where we foster the innovation of new solutions for the future of health care. It drives everything we do.

OSF HealthCare Illinois Neurological Institute is driven by its Mission to provide “quality neurological care through innovation and collaboration,” which meshes perfectly with the Mission of the broader Ministry. As a leader in several neurological fields, Illinois Neurological Institute is not only a point of pride for OSF HealthCare, it provides world-class expertise and research in an easily accessible city to people throughout the midwest.

# OSF HealthCare Illinois Neurological Institute



## BY THE NUMBERS

**11**

OSF HealthCare Medical Centers

**6**

satellite locations

**53,000**

total 2017 clinic visits

**30**

neurologists

**8**

neurosurgeons

**5**

physiatrists

**40**

advanced practice providers

*All data reported is  
by fiscal year, ending  
September 30.*



Marissa Schwandner completed a triathlon just 11 months after her spinal fusion surgery by Dr. Daniel Fassett.

# Spine

## A BETTER APPROACH LEADS TO BETTER OUTCOMES

Spine surgeons at the OSF HealthCare Illinois Neurological Institute Spine Institute perform about 1,000 spine operations each year. That's more than any other hospital system in the area, making it the second largest program in Illinois. Our neurosurgeons rely on research, technology and experience to provide the highest level of spine care for conditions ranging from low back pain, degenerative disc disease, osteoporosis, and related stress fractures to trauma, tumors and deformities requiring complex surgical intervention.

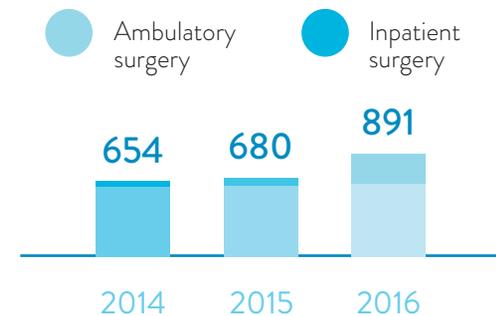
**Spine surgery requires the right surgeon operating on the right patient at the right time.**

Surgical outcomes can vary significantly, and measuring them is critical to learning what works best for every situation. Our neurosurgery is in the 90th percentile of the QOD – a national record of spine surgery outcomes – for lumbar and cervical spine. Our lumbar surgery results put us in the top 10 percent for leg and back pain improvement. Our cervical surgery results at 12 months also rank us in the top 10 percent.

## IT STARTS WITH ACCESSIBILITY

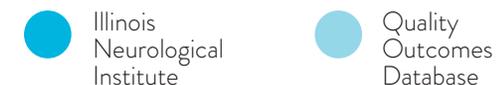
Acute back pain is one of the most common complaints in medicine. We believe that fast and accurate identification of patients in need of urgent surgical treatment requires clinical expertise and rapid access to it. That's why our acute back pain service offers same-day or next-day appointments. For those who need surgery, one of our three fellowship-trained neurosurgeons who specialize in complex spine treatment provides state-of-the-art care. For those who don't need surgery, our interdisciplinary team of physicians and therapists provides personalized conservative care options.

## SPINE CASES

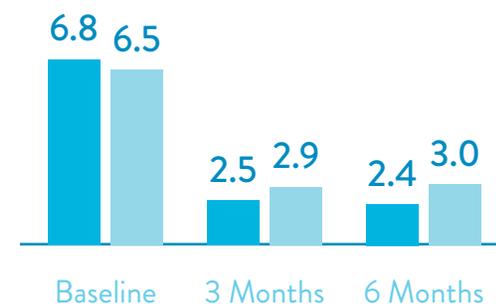


## SURGERY PAIN RATING

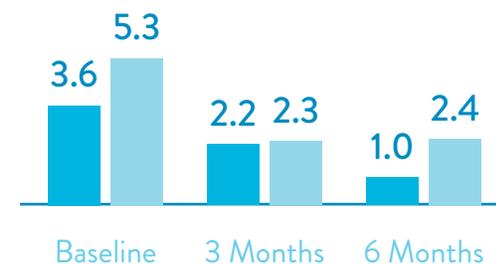
0-10 pain scale, 0 = no pain



### Lumbar Surgery



### Cervical Surgery





91-year-old Ieda Herman reacted quickly to the first signs of stroke and called 911 immediately. Thanks to Dr. Deepak Nair and our coordinated stroke team she received tPA within 28 minutes of arriving in the Emergency Department.

# Stroke

## THE TOP STROKE CENTER IN ILLINOIS

With 72 acute neuroscience care beds, OSF HealthCare Saint Francis Medical Center in Peoria, Illinois, has one of the largest neuroscience care units in the country. It is also home to the OSF HealthCare Illinois Neurological Institute Comprehensive Stroke Center, led by Dr. David Wang. Our Stroke Center was the second in the U.S. to receive that certification by The Joint Commission, and has successfully been recertified twice. Dr. Wang is also the Stroke and Vascular Neurology Section Chair of the American Academy of Neurology.

An annual stroke census of around 1,100 makes our Stroke Center the largest in Illinois. The Neurosciences Intensive Care Unit in OSF Saint Francis is also staffed by board-certified neurointensivists and 5 neuro-interventional physicians.

## TIME IS CRITICAL

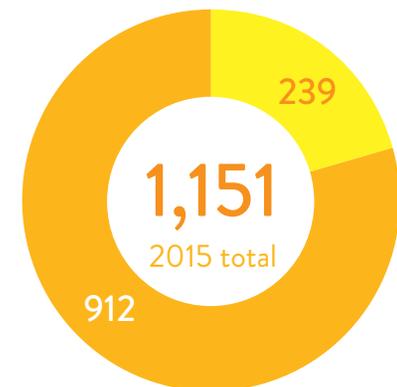
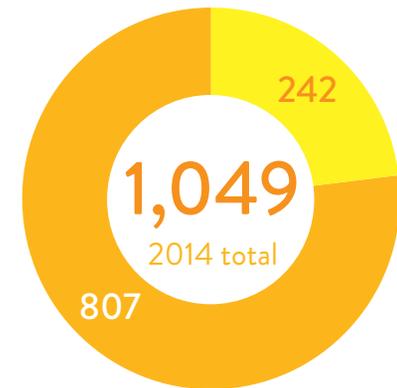
We have set the record for door-to-needle time for administration of tPA at 5 minutes, with an average time of about 27 minutes and a door-to-puncture time of 45 minutes for interventional angiography.

Our Stroke Center is the hub of one of the largest rural stroke networks in the country, made up of 25 stroke hospitals in 21 counties. Two helicopters and local EMS services transport acute stroke patients. We have used the “Drip and Ship” model since 1997. We have streamlined our stroke intake process, so patients with suspected large vessel occlusions are transferred directly to the angiographic suite, bypassing the Emergency Department.

## CARING FOR SURVIVORS

Stroke survivors who were treated at our Stroke Center developed the original Retreat and Refresh Stroke Camp in Peoria. It offers survivors and their families a chance to explore life after stroke, and it has grown to a nationwide phenomenon. As a key sponsor and advisor to Retreat and Refresh, we are helping redefine world class stroke care from the acute onset to carrying on with the new balance of life after stroke.

## STROKE VOLUMES





Intraoperative MRI allows imaging during surgery to improve surgical accuracy. OSF HealthCare Illinois Neurological Institute is one of the few neuroscience service providers in the country to have iMRI and gamma knife available on the same campus.

# Brain Tumor

## COMPASSION, TECHNOLOGY, EXPERTISE

At the OSF HealthCare Illinois Neurological Institute Brain Tumor Center we understand the worry that can accompany a diagnosis of a brain tumor. That is why we are dedicated to treating the whole patient, not just the condition.

**We bring competence and compassion to every interaction with patients and families.**

We treat over 250 brain tumors each year, and that number is growing. Where a brain tumor diagnosis can alarm, we disarm. Our compassionate and comprehensive care is provided by experts throughout the range of medical and surgical specialties in an easily accessible location in central Illinois.

## ALWAYS INNOVATING

The Brain Tumor Center is a joint effort between Illinois Neurological Institute and several departments at the University of Illinois College of Medicine at Peoria: neurosurgery, neurology, neuroradiology, neuropathology, medical oncology, radiation oncology and basic science. Our interdisciplinary clinical team is changing the care of brain tumors one patient at a time while our collaborative research efforts will change the care for many more.

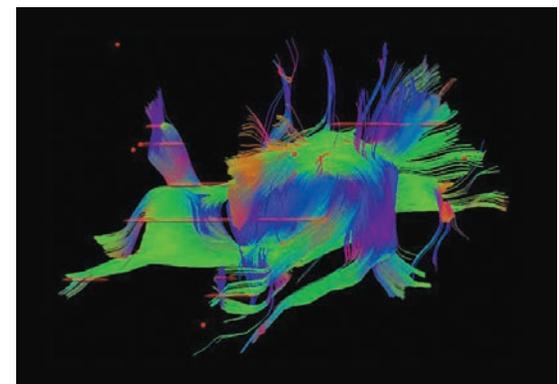
We believe the right combination of talent and technology achieves great results. For example, Dr. Andrew Tsung, fellowship-trained neuro-oncological surgeon, uses endoscopic technology to perform minimally invasive surgery for pituitary and deep brain parenchymal tumors. Intraoperative MRI allows patients to undergo high resolution imaging during surgery to increase the accuracy of surgical excision. Gamma knife technology allows us to treat brain tumors with higher doses of radiation than traditional methods without harming healthy tissue. Diffusion Tensor Imaging with tractography enhances interfascicular subcortical approaches to complex tumors. All of this technology is available in one place: our campus in Peoria, which serves as a destination for patients across the state. Our patients also have access to a brain tumor navigator, who helps coordinate care and serve as a personal resource during the treatment process.

## BRAIN TUMOR CASES



## LENGTH OF STAY CASE MIX ADJUSTED

*Average, in days*



Diffusion Tensor Imaging (DTI) tractography allows identification of tracts by function in real-time.



Ocular coherence tomography (OCT) is a non-invasive diagnostic procedure that provides cross-sectional views of the retina and the optic nerve. In MS, attenuation in the optic nerve and or the ganglion cell layer is observed and can have prognostic significance.

# Multiple Sclerosis

The OSF HealthCare Illinois Neurological Institute Multiple Sclerosis Center is the only center certified by the MS Society between Chicago and St. Louis. We rely on our experience to continuously seek new solutions, while keeping patients at the center of everything we do.

## EXPERIENCE

With 48 years of experience, Dr. Dennis Garwacki has diagnosed and treated more MS patients than most neurologists will see in a lifetime. Dr. Reuben Valenzuela completed a fellowship in neuro-ophthalmology and another in neuro-immunology/multiple sclerosis. Their approach is comprehensive, personal and has proven to be effective. After initial diagnosis, a patient has an extensive visit with the Multiple Sclerosis Center team. In one extensive visit, a patient meets with the physician, plus a physical therapist, social worker, registered nurse, pharmacist and dietician to discuss an individualized approach to their care.

## COMMUNITY

Education is vital to maintaining a healthy population. Our specialists provide abundant community education on MS, including an annual symposium for 100 patients and an annual couples' retreat called "Relationship Matters."

We maintain meaningful relationships with our patients and our community. In turn, they help us provide care and support to patients who would otherwise not receive it. Generous contributions from the central Illinois community directly fund goods and services not covered by medical insurance, such as home adaptation, assistive devices and wheelchair ramps for the home. As a result, more patients are able to live safely in their homes and away from them.

## RESEARCH

In collaboration with our sleep medicine team, we are studying the relationship between inflammatory cytokines in MS patients who have obstructive sleep apnea and the severity of their fatigue and disease. The Patient Centered Outcomes Research Institute conducts patient-led research at the University of Illinois College of Medicine at Peoria, with whom we are closely affiliated. Here, MS patients are asked to identify what would improve their life. Their answers steer our research efforts. This affords clinical investigators insight into the needs of the patients they serve.

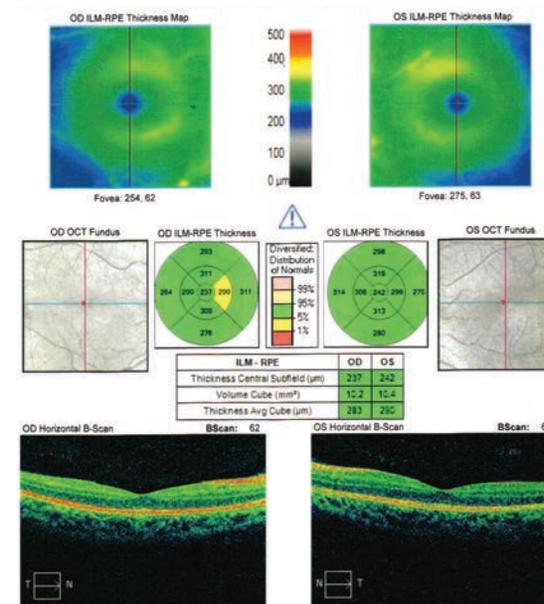
## PATIENT DEMOGRAPHICS

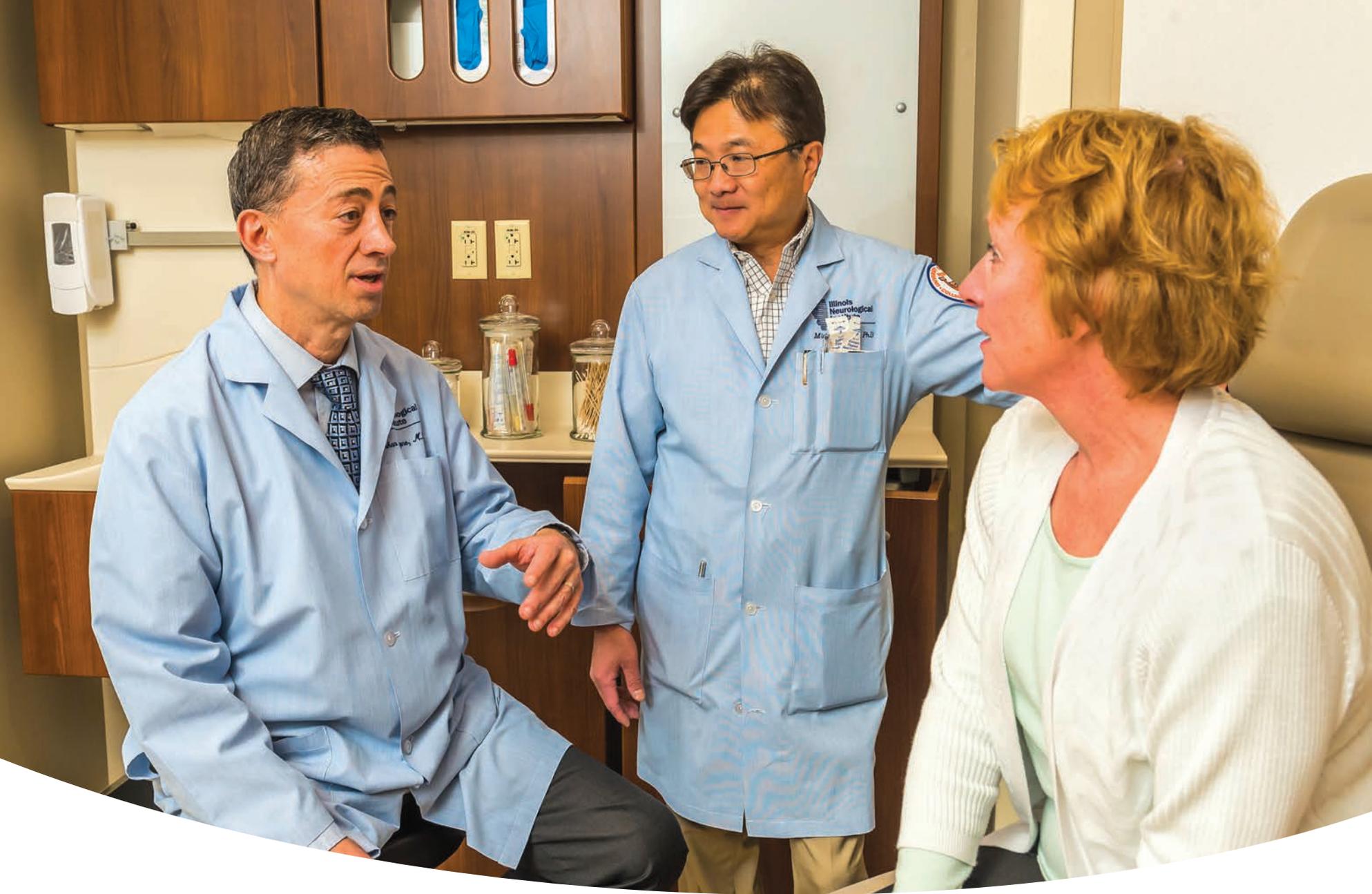
 **1,305** patients

 **15-97** age range

 **61** counties in Illinois

## OCT RESULTS





# Epilepsy

## PROVIDING THE HIGHEST LEVEL OF CARE

The OSF HealthCare Illinois Neurological Institute Epilepsy Center is recognized as a Level 4 Center by the National Association of Epilepsy Centers. It is the only Level 4 epilepsy center in Illinois outside of Chicago. Our epilepsy team is a large group of specialists, which continues to expand to meet the needs of Illinois. Our team of fellowship-trained neurologists – board certified in clinical neurophysiology – experienced advanced practice providers, a functional neurosurgeon, neuroradiologists and neuropsychologists work closely to provide the highest level of care to our patients with epilepsy.

We serve a population of about 2.6 million adults throughout Illinois, and provide inpatient epilepsy care to the largest number of patients among many neurological care centers, including Northwestern Memorial Hospital (Chicago), Memorial Hospital (Springfield) and Carle Foundation Hospital (Champaign). Our epileptologists provide EEG interpretation seven days a week for OSF HealthCare hospitals throughout the state. We also continue to add epileptologists and functional neurosurgeons to our team in order to meet the needs of those we serve.

## EMBRACING ADVANCEMENTS

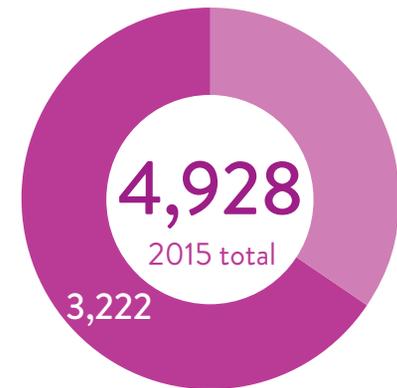
At Illinois Neurological Institute, we are leaders in innovation and we embrace the latest technology to continuously improve patient outcomes. For diagnostic evaluations and pre-surgical localization, we use inpatient and outpatient video EEG capabilities, special seizure protocols utilizing 3 Tesla MRI, diffusion tensor imaging with tractography, functional MRI, PET scanning, SPECT scanning and Wada testing.

While most patients with epilepsy can achieve seizure control with medication, 20 to 30 percent of them need further treatment. We offer a range of alternatives for these patients, including experimental drug trials, surgical treatment, vagus nerve stimulation and responsive neurostimulation. 66 percent of patients treated with surgical resection became seizure free, while another 23 percent experienced significant improvement in seizure frequency and severity.

Epilepsy has many mimics, and patients suffering from non-epileptic seizures may need care that differs from epilepsy treatment. The Illinois Neurological Institute Epilepsy Monitoring Unit provides the expertise and experience needed to make the right diagnosis. We are also developing a clinic specifically to address the needs of patients with non-epileptic seizures.

## CLINIC VISITS

 New patients





# Neuropsychology

## ASKING THE QUESTIONS, DIGGING DEEPER

OSF HealthCare Illinois Neurological Institute is putting neuropsychology to work differently for its patients to improve their medical outcomes. When a patient has trouble adhering to a treatment plan, care and discharge can be delayed, and sometimes the patient gets labeled as “non-compliant.” But why do some patients have more trouble than others adhering to their treatment? Neuropsychological evaluations performed on “non-compliant” patients have revealed some to have developmental undiagnosed intellectual disabilities.

We have a formal process to develop individual treatment and discharge plans that will most likely allow a patient to succeed. Hospitals routinely engage social workers and others to help develop and implement successful care plans. We have gone a step further with our systematic involvement of neuropsychologists to understand the underlying reasons a patient might be having difficulty. This care innovation makes a measurable difference in patient outcomes.

## AGING AND AUTISM

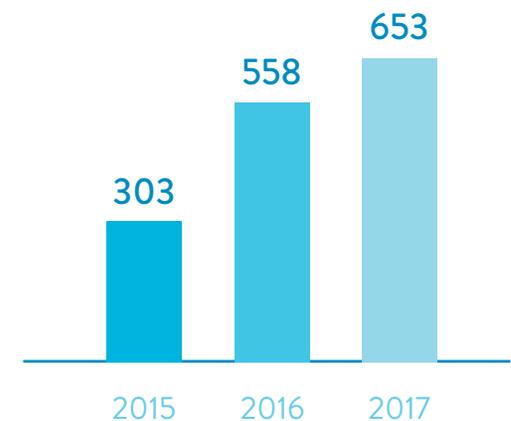
Better understanding and recognition of the autism spectrum, particularly among children, has contributed significantly to the rise of autism diagnoses. However, many adults living with autism already have not been diagnosed. According to the DSM 5, “Scarcely anything is known about old age in the autism spectrum disorder.”

Autism among aging patients has some mimics that can make diagnosis tricky. For example, autism can be mistaken for frontotemporal dementia, when aging sometimes just makes the symptoms of autism more pronounced. On the other hand, a patient with autism may develop Alzheimer’s disease, but it’s important to distinguish that from the effects of aging on autism.

“At the same time we are working to understand patients with autism across the age spectrum, we are also working to transform their care,” said Teresa Regan, Ph.D., an Illinois Neurological Institute neuropsychologist. “We’re working with Easterseals to look at new care methods for children and adults with autism.”

Dr. Regan’s expertise in brain-behavior relationships, adult and geriatric medical conditions and autism, have led to a set of rare qualifications to serve adults with autism. Her patients with autism range in age from 14 to 88 years.

## PATIENTS EVALUATED



Theresa Regan, Ph.D., lead neuropsychologist, brain injury specialist and certified autism specialist authored the book, “Understanding Autism in Adults and Aging Adults: Improving Diagnosis and Quality of Life.”

# Neuro-ophthalmology

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## Taking the Time to Get it Right

Having the expertise of a neuro-ophthalmologist substantially raises the level of expertise in a neurological center. Having three fellowship-trained neuro-ophthalmologists, including one as accomplished as Dr. Jorge Kattah, elevates OSF HealthCare Illinois Neurological Institute to a leader in the field and a destination for neuro-ophthalmological care. Dr. Kattah has more than 40 years of neuro-ophthalmology experience.

Our neuro-ophthalmology team prioritizes participation in clinical trials and other forms of research, for the sake of improving patient care. We consider patient experience to be the foundation of what we do.

Because of the sometimes complex nature of the conditions we treat, we can spend several hours with a patient during the initial appointment. An accurate diagnosis and a personalized treatment plan are vital when dealing with neuro-ophthalmological disorders, and quality work takes time. Any risk of permanent vision loss or a life-threatening condition must be identified or ruled out.

Our physicians evaluate patients from neurological, ophthalmological and general medical perspectives to diagnose the origin of visual symptoms and neurological conditions. This also allows us to distinguish retinal from neurological conditions.

# Neuromuscular

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## Dedicated to Teamwork

The Muscular Dystrophy Association Care Center at the OSF HealthCare Illinois Neurological Institute is a true multidisciplinary clinic for patients with muscular dystrophies and other neuromuscular disorders. Within it is a dedicated clinic for patients with ALS.

Providing comprehensive care to patients of all ages with all forms of neuromuscular disease, our fellowship-trained, board-

certified neuromuscular neurologists have a wealth of experience and knowledge in the diagnosis and management of diseases that affect nerves and muscles, including autoimmune disorders. We believe personalized, complete care requires an interdisciplinary team that includes an onsite physical therapist, occupational therapist, speech therapist, respiratory therapist, dietician, orthotist, power wheelchair specialist, an MDA representative and social workers.

Our exceptional care and outreach extends beyond the typical provider-patient relationships to our ALS support group and our support of a Muscular Dystrophy Association summer camp. We are innovating technology to automate and quantify the strength examination, and simulate rigidity and spasticity. We are working to standardize the neurological exam and developing a care path for ALS to assure a fail-safe algorithm.

# Pediatric Neurosurgery



## Specialized Care

OSF HealthCare Illinois Neurological Institute and OSF HealthCare Children's Hospital of Illinois provide comprehensive pediatric neurosurgical care. Our board-certified pediatric neurosurgeons work closely with other pediatric specialists – in neurology, developmental pediatrics, genetics, plastic and reconstructive surgery and rehabilitation medicine – to ensure that each child receives the personalized care they need. We are the only center in central Illinois to provide intraoperative MRI. The special attention we pay to the care of pediatric pain management, including headaches and back pain, sets us apart.

Access is vital to our Mission, which is why we hold regional clinics across the state to minimize travel from home for our patients to reach world-class pediatric care.

Meeting the needs of our broad patient base means we have to be able to handle a wide range of conditions like hydrocephalus, Chiari malformations, brain and spinal cord tumors, craniofacial anomalies, epilepsy, spine disorders, vascular diseases of the brain and spinal cord and traumatic brain injury.

Concussion is a common concern that can have significant and lasting consequences, too. We have provided screenings and education to thousands of young athletes

in central Illinois to reduce the risk of concussion, increase recognition when it occurs and initiate appropriate action on the field.

## Partnering to Develop New Solutions

OSF Children's Hospital is the St. Jude Midwest Affiliate and our pediatric neuro-oncologists provide children with brain tumors state-of-the-art treatment plans. With the University of Illinois at Urbana-Champaign we are developing graphene technologies that coat catheters to prevent occlusion. At the Jump Simulation & Education Center in Peoria, Illinois, we are partnering on a project that uses EEG to analyze team work in the operating room environment during simulation trainings. In collaboration with Bradley University, we are developing a task trainer to help residents master microvascular techniques.

OSF Children's Hospital was established as a pediatric hospital within the walls of OSF HealthCare Saint Francis Medical Center in 1990. It is a 136-bed, full service pediatric hospital with 141 pediatric specialists representing more than 40 pediatric subspecialties. OSF Children's Hospital provides the highest level of care from newborns to teenagers with common and complex medical conditions.

# Pediatric Neurology

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## Growing Alongside our Patients

OSF HealthCare Illinois Neurological Institute pediatric neurology at OSF HealthCare Children's Hospital of Illinois is a rapidly growing, broadly specialized, accessible service for children and their families throughout Illinois and beyond.

Pediatric subspecialty care at OSF Children's Hospital in Peoria has grown eight-fold in the past five years, to 141 subspecialists in more than 40 fields. Among this group, the number of pediatric neurologists has quadrupled since 2015, and more growth is underway. We care for about 4,000 outpatients and 400 inpatients a year. Urgent patients are seen within a day and routine appointments are scheduled within two weeks.

We have a well-coordinated pediatric epilepsy care team. Our inpatient diagnostic and pre-surgical epilepsy monitoring unit, and our long-term EEG monitoring of critically ill patients, are handled by an experienced

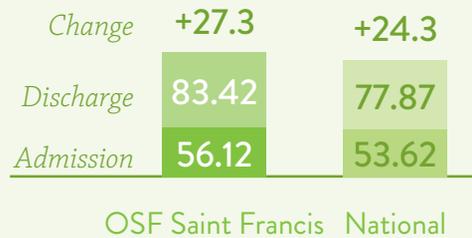
team of technologists, who provide inpatient diagnostic and pre-surgery epilepsy monitoring, as well as long-term monitoring of critically ill patients.

In addition to pediatric neurologists who specialize in epilepsy, and a fellowship-trained headache specialist, we have neurological specialists in the fields of neuromuscular, neuro-ophthalmology, sleep, movement disorders, cerebrovascular disorders and oncology, who provide care to patients of all ages. We also go beyond the walls of OSF Children's Hospital to provide pediatric neurology services at clinics across central Illinois.

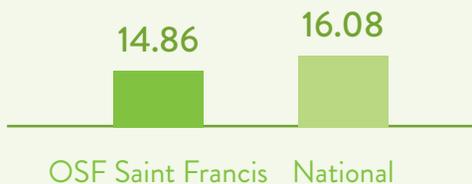
We make world-class neurological care for children and their families accessible.

# Physical Medicine and Rehabilitation

## 2016 Functional Independence Measure Score Improvement



## 2016 Average Length of Stay (days)



## Talent, Teamwork and Technology

Excellence in physical medicine and rehabilitation requires an organization willing to devote the resources necessary to individualize treatment. OSF HealthCare Illinois Neurological Institute has assembled a team of five board-certified physiatrists and over 160 physical, occupational and speech therapists to provide inpatient and outpatient rehabilitation in 30 locations throughout Illinois.

Our recently remodeled 26-bed inpatient unit at OSF HealthCare Saint Francis Medical Center provides an environment of state-of-the art technology and care, and it

shows in our results. The individualized and interdisciplinary approach we bring to each inpatient results in our patients returning to home significantly more often than the national average among patients with equally complicated conditions.

We combine talent, teamwork and technology to produce great patient care. Our physiatrists have decades of experience with spinal cord injuries, electrodiagnostic medicine, migraines, gait training and a host of rehabilitation and physiatry methods. We also excel at patient education and helping patients manage their pain with conservative tools, like exercise, non-narcotic medications and lifestyle changes.

# Movement Disorders

## Sharing Strength through Community

Movement disorders include a broad spectrum of neurological conditions, and require a broad spectrum of approaches. Many of them are permanent, and some are degenerative, which is why OSF HealthCare Illinois Neurological Institute takes a holistic approach to care that addresses the physical, cognitive, emotional and social health for every patient we serve.

For Parkinson's disease patients, we provide access to Lee Silverman's Voice Therapy "Big and Loud" program, a highly effective and intensive therapeutic approach to remain as communicative and mobile as possible. We also sponsor a weekend-long Parkinson's Camp – developed by some of our patients – where patients and their families connect in a relaxed setting, share coping strategies and learn from experts. We provide clinical expertise for the camp, and lend knowledge and funding to the Parkinson's disease support group.



# Memory and Brain Wellness

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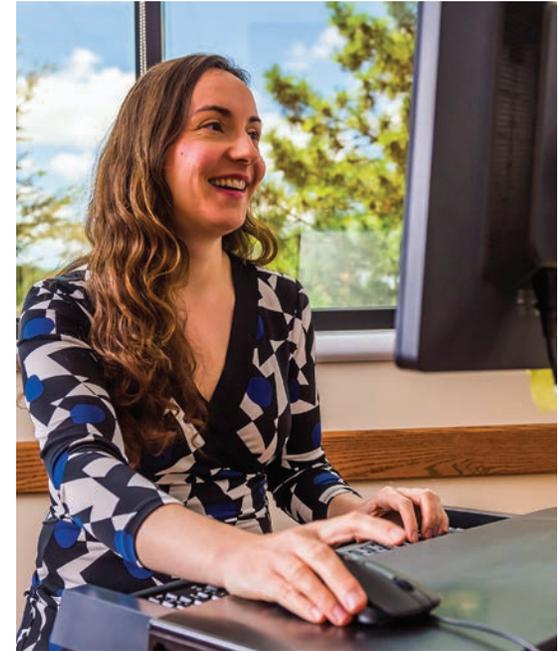
## Meeting the Needs of Today and Tomorrow

With an aging population, dementia care is becoming one of the most important fields in neuroscience. The increase in the number of patients with Alzheimer's disease and other neurodegenerative conditions will likely have a significant impact on neurological care throughout the U.S. OSF HealthCare Illinois Neurological Institute recognizes the need to create more effective ways to deliver care to this group of patients. Diagnosis and management require access to expertise and resources for a large number of patients.

Primary care physicians at OSF HealthCare are applying an algorithm developed by

Dr. Julia Biernot – fellowship-trained in dementia and other cognitive disorders – to more effectively evaluate patients with cognitive symptoms as soon as they present. Those in need of urgent evaluations are identified, as are those who need further work-up before seeing a specialist. This allows patients who need specialized neurological care to be identified more quickly, and have more timely access.

We are also using telemedicine to reach patients with cognitive disorders. Dr. Biernot and a team of nurse practitioners provide evaluations to patients remotely. This allows greater access to specialty care, and allows patients to stay close to home.



# Neurovestibular

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## Offering What Others Don't

Dr. Jorge Kattah, professor and head of the University of Illinois College of Medicine at Peoria Department of Neurology, leads the OSF HealthCare Illinois Neurological Institute Vertigo, Balance, Gait and Ataxia Center. With over 100 peer-reviewed publications, scores of international and national presentations, plus many other academic accomplishments, he is a well-recognized world leader in the field.

He and his expert team of neuro-ophthalmologists use the most advanced vestibular testing technology to provide exceptional evaluation and care to the many patients the Vertigo and Balance Center serves. This clinical excellence, along with the team's dedication to clinical trials and research, allow patients to receive cutting-edge care from experts in the field in an accessible location.

# Headache and Craniofacial Pain

## Headache-related Visits to the Emergency Department



## Headache Care with a Heart

Hrachya Nersesyan, MD, Ph.D., leads a team at the OSF HealthCare Illinois Neurological Institute Headache and Craniofacial Pain Center to provide integrated, individualized care to each patient. Dr. Nersesyan is certified by the United Council for Neurological Subspecialties in Headache Medicine. He and his team are the headache resource for a population of 2.1 million people across 45 Illinois counties, and from many referring physicians in a variety of specialties, including pain management, ENT, internal medicine, psychiatry and rheumatology.

Our team believes patient care is too important to be rushed. They take the time to listen and make sure their patients understand their treatment. They personalize their approach to meet the unique needs of every patient, and value their relationships with patients as the key to successful treatment.

Their nearly opioid-free philosophy prioritizes non-opioid treatment options whenever possible. Some patients do require opioids, but very few.

## Acute Care

Headaches are among the most common and most disabling conditions in medicine. By creating thoughtful preventive treatment plans, and providing same-day treatment of acute headaches when needed, using methods that include blocks and trigger injections, our team has reduced the number of headache-related visits to OSF HealthCare emergency departments from 2,047 in 2016 to 1,693 in 2017 – a 17 percent reduction. Each adult and adolescent receives a personalized approach to both acute care and long term management in order to regain and maintain the best quality of life.

# Out of the Shadows: Shining a Light on Physician Burnout

More than 400 physicians commit suicide every year – a rate that makes physicians more than twice as likely as the general population to take their own life.

In an article he wrote for Becker's Hospital Review in March, Tony Avellino, MD, MBA, the CEO of OSF HealthCare Illinois Neurological Institute, described how in 2009 he found himself suffering the depression and suicidal thoughts than can partially define a case of burnout. That pain has driven him to make physician burnout a priority.

Dr. Avellino has since found personal activities that help him stay positive, including running ultra-marathons, but added it is a continuous struggle. However, "the first step is to recognize the problem so you can do something about it," he wrote. No longer should physicians feel like they need to hide the pain they feel from burnout.

He holds educational events for health care providers to raise awareness of the problem and prompt them to pursue "mind, body and spiritual wellness."

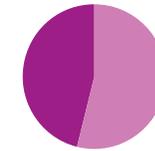
Calling it an "occupational disease," Dr. Avellino believes burnout can negatively impact patient care by causing impaired judgment, a lack of attention to detail and

failures in communication. Of course, it can also lead to personal issues for physicians, like substance abuse, family stress, depression, suicidal thoughts and professional dissatisfaction.

The key to thriving professionally is work-life balance, and Dr. Avellino is trying to help everyone on his team achieve this goal.

"As a team we are exploring a variety of strategies including nutrition education, exercise, improved quality and quantity of sleep, essential oils, massage therapy, meditation, mindfulness training and taking full advantage of the wellness resources available through OSF HealthCare," Dr. Avellino wrote in Becker's.

Dr. Avellino hopes to spread his message beyond his own organization to help create a health care environment throughout the country that supports the physical, mental and emotional well-being of physicians. If all health care providers better understand the causes of burnout, work to help physicians manage their stress and make resources available to help, patient care in the U.S. will benefit.



**46%**  
of physicians

reported they were burned out in 2015

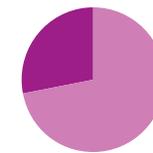


The suicide rate is



**1.41x 2.27x**

higher for physicians



**28%**  
of residents

experience a major depressive  
episode during training

*Data from the American Foundation for Suicide Prevention and Medscape.*



“

At OSF HealthCare Illinois Neurological Institute, we follow the eight Cs to help us provide our patients with the highest quality neurological care: Collaborate, Cooperate, Consolidate, Coordinate, Communicate, Convince, Courage and Coach.

”

**ANTHONY AVELLINO, MD, MBA**  
*CEO of OSF HealthCare Illinois Neurological Institute*

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# 2017 REPORT

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