

COMPREHENSIVE

# STROKE

CENTER • STATUS REPORT



**UPSTATE**  
COMPREHENSIVE STROKE CENTER



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## TABLE OF CONTENTS

A Letter from our Stroke Director .....	1
About our Stroke Center .....	2 - 3
Our Numbers .....	4 - 5
Reducing The Burden of Stroke .....	6
Emergency Neurological Life Support ....	7
Support To The Region .....	8 - 9
Our Mission .....	10
We Serve Our Community.....	11
Data Update.....	12
A Patient's Story: Joan .....	13
Newest Stroke Team Members ....	14 - 15
Upstate's Stroke Neurologists .....	16
A Patient's Story: Kyle .....	17

# OUR GOALS FOR STROKE CARE

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## Dear Central New York,

We are pleased to present the Upstate Comprehensive Stroke Center Status Report. This report will highlight our achievements in patient care, quality and clinical expertise.

In 2015, Central New Yorkers had one less thing to worry about – where to go if they or their loved one should suffer a stroke. That year, through the effort of the largest neuroscience team in the region and hundreds of hospital staff, Upstate University Hospital became the first and only Level 1 Comprehensive Stroke Center in the region, the highest level of stroke certification available. What this means to our community is that stroke patients have access to a team of stroke physicians with the clinical expertise to care for the most complicated of stroke patients. This clinical expertise allows us to provide the highest quality of stroke care.

Since our Comprehensive Stroke Center Designation, our program has continued to expand with three main goals:

**Goal 1:** To continue to provide the highest quality and most comprehensive care to stroke patients.

**Goal 2:** To reduce the stroke burden in Central New York using multiple approaches including community education, community awareness campaign, and community engagement in stroke and cardiovascular disease activities.

**Goal 3:** To support health care providers all over Central New York by holding provider conferences targeting local neurologists, emergency physicians, family doctors and other health care providers on stroke management; and by providing emergency support/consultation using advanced technologies such as a telestroke system so that time-sensitive intervention can be done regardless of patient location.

We are proud to share our achievements and goals with you and hope that you find the information in this report beneficial. The Comprehensive Stroke Center at Upstate University Hospital continues to focus on the quality of our stroke care and remains committed to the region and our communities.

Sincerely,



*Julius Gene Latorre, MD, MPH*

*Medical Director,*

*Upstate Comprehensive Stroke Program*



# UPSTATE STROKE PROGRAM: YEARS OF EXPERIENCE FOR BETTER CARE

Upstate's Comprehensive Stroke Center is embedded within the framework of a long history of dedicated service to the neuroscience patient. Our Neurosurgery Department received its start largely through the efforts of a pioneering neurosurgeon, Robert King, MD. Dr. King, an internationally renowned neuro-surgeon was the first chair of the neurosurgery department founded in 1966 and served until 1988. During his tenure, he established a seven-year residency program with a two-year bench research component, one of the first in the country. Many neurosurgery residency programs followed suit, adding research years to their residency, enhancing the evidence for the care of patients with neurological insult and disease. In the 1970s, Dr. King established the first Neurosurgical ICU in NY State with seven dedicated beds and a 21-bed neurosurgical unit. In 1996, the Neurosurgical ICU became the Neuroscience ICU and relocated to the new

East Wing of the hospital and the Neuroscience Intermediate Care Unit was established, increasing the number of beds devoted to neuroscience patients.

## Stroke Leadership

The beginning of the Comprehensive Stroke Center can be traced to the combined efforts of the community and many dedicated staff. In 2003, Onondaga County had the second highest mortality rate in NY State and had no standardized stroke care in the community. Dr. Satish Krishnamurthy agreed to chair the newly created CNY Regional Stroke Task Force aimed at standardizing the response to and treatment of stroke in the Syracuse community. In 2006, Upstate became the first area hospital to mobilize its stroke response team and earn NYS Department of Health designation as a Primary Stroke Center. This led to the Department of Health designating Upstate as a Telemedicine Hub hospital.

## First for Therapies

In 2008, the Neurocritical Care Service was established under the leadership of Dr. Gene Latorre, and a fellowship program followed soon after. With the advent of the Neurocritical Care Service, the Neuroscience ICU increased its use and expertise with cutting edge technologies and treatments. Upstate became the first area hospital in 2008 to implement Therapeutic Hypothermia and Normothermia to preserve brain function after insult. These therapies continue to be used to preserve brain function after neurological insult for the area's most complex neurological patients and post-cardiac arrest patients. During this year, the use of brain tissue oxygenation monitoring via Licox and advanced intracranial pressure monitoring using fiber optic devices expanded, as did the use of seizure monitoring, first begun in the 1990s. All of these aforementioned therapies are



## A History of Growth

1970'S	1995	2006	2007	2008	2009	2010
Upstate develops dedicated Neuro-Intensive Care Unit, making it one of the first Neuro-ICUs in the US	FDA approved Alteplase, the first drug proven to treat Acute Ischemic Stroke	Upstate became the first NY State Department of Health Designated Primary Stroke Center in Central New York	Upstate telestroke network begins to reach out to community hospitals to provide expertise and assistance to local providers for acute stroke treatment	Upstate receives Bronze Performance Award from American Heart/Stroke Association for consistently providing high quality patient care	Upstate receives Silver Performance Award from AHA/ASA for consistently providing high quality of stroke care for at least 12 consecutive months	Upstate becomes the first hospital in New York State to achieve certification as a DNV primary Stroke Center





now commonplace interventions used in our care of the neuroscience patients.

In 2010 DNV awarded Upstate designation as a Primary Stroke Center adding to the DOH designation. The neuroscience units moved to the new construction below the Children's Hospital on the ninth floor, establishing 46 beds devoted to Neurosciences. The department continued to grow, requiring the expansion of the Neuroscience ICU from 11 beds to 14 in 2013 due to the increased acuity brought by the growth of the Neurocritical Care Service.

The continued expansion of our Neurocritical Care Service and the expertise and breadth of our services led to our decision in 2014 to validate our expertise by inviting DNV to evaluate our program for certification as a Comprehensive Stroke Center. We were awarded this designation in January 2015 and completed our reevaluation as such with DNV in January of 2016.

### Expertise for Patients

Upstate has the combined expertise and breadth of services that only an academic medical center can provide. Our Emergency Department personnel receives specialty training in stroke. Our team provides median door-to-tPA times that exceed national standards. Specialty trained nurses in neuro critical care respond to the ED to assist in the care of these patients. Our Neuroendovascular Service uses a multi-disciplinary approach that includes the expertise and collaboration of neurology, neurosurgery and radiology, bringing clot busting therapies and treatments that are state of the art for the care of ischemic stroke patients and the repair of aneurysms and other causes of hemorrhagic strokes. Most importantly, Upstate has the expertise to care for these patients after these lifesaving procedures, and all along the spectrum of care that is needed. We have three dedicated nursing units with three levels of care: Neurosciences Medical-

Surgical Unit, Neuroscience Intermediate Step-Down Care Unit, and the Neuroscience ICU. The nurses on these units, many of whom are certified in Neuroscience Nursing and in Stroke, receive specialized training in the care of neuroscience and stroke patients. Our hospital-level rehabilitation program, the only one regionally, provides comprehensive rehabilitation services and medical management to our stroke patients and is a large part of our Comprehensive Stroke Center's team. Our patients are able to continue in our Outpatient Rehabilitation Stroke Program once discharged from the hospital or inpatient rehabilitation unit.

Our interdisciplinary team is the largest team dedicated to the brain in Central New York. Our rich history, combined expertise and breadth of services are what earned Upstate its Comprehensive Stroke Center designation. We are honored to care for our region's stroke patients and are committed to providing and improving the care and lives of our community.



2011	2012	2013	2014	2015	2016	2016
Upstate received the Gold Plus Performance Award from AHA/ ASA for consistently providing the highest quality of stroke care for at least 12 consecutive months	Upstate receives Gold Plus Performance Award from AHA/ASA for two consecutive years	Upstate receives Gold Plus Performance Award for third year and Target Stroke Honor Roll status for consistently providing thrombolytic therapy within 60 minutes	Upstate receives Gold Plus Performance Award for the fourth year and Target Stroke honor Roll from AHA/ASA for two consecutive years	Upstate becomes the first comprehensive Stroke Center in Central New York and one of six in New York State	Upstate received accreditation for two consecutive years as DNV Comprehensive Stroke Center	AHA/ASA Gold Plus Performance Award Target: Stroke Honor Roll Elite Plus

# GOAL #1 QUALITY: VOLUME

## Upstate Comprehensive Stroke Center Offers 24/7 access to the following:

- 23 neurologists
- 4 board-certified stroke neurologists
- 3 on-site neurosurgeons
- 3 endovascular interventionalists
- 2 neuro-intensivists
- 8 neurorehabilitation specialist/physiatrists
- Approximately 150 nurses who have special training in the care of neurological patients, some of whom have dual certification in stroke and neuroscience.
- An entire hospital floor dedicated to brain care with three levels of specialized care: Neuroscience Intensive Care Unit; Specialized Neuroscience Unit; and Neuroscience Step-Down Unit.

## Upstate Stroke Patient Volume 2013 - 2015

	2013	2014	2015
Total Suspected Stroke admissions	N/A	1381	1395
Acute Ischemic Stroke	556	486	510
Transient Ischemic Attack	149	97	144
Intracerebral Hemorrhage	132	116	127
Subarachnoid Hemorrhage	70	57	44

## Upstate treats more stroke patients than any other hospital in Central New York

	Upstate	Hospital A	Hospital B
Acute Ischemic Stroke	<b>377</b>	377	121
Transient Ischemic Attack	<b>64</b>	25	33
Intracerebral Hemorrhage	<b>108</b>	63	20
Subarachnoid Hemorrhage	<b>36</b>	17	1

(Source: Hospital Executive Council Jan.-Sept. 2015)

## Upstate performs more routine and complex neuroendovascular procedures than any other hospital in Central New York

Year	Mechanical	Coiling SAH	Embo	Unruptured	Stenting
2006	1	37	21	31	16
2007	35	40	27	41	28
2008	27	59	20	69	19
2009	36	33	35	36	31
2010	29	46	53	36	45
2011	25	36	31	37	60
2012	54	40	53	48	38
2013	51	39	39	37	45
2014	41	32	25	24	43
2015	37	25	11	18	13

## Upstate performs more acute stroke interventions

including intravenous tPA and mechanical thrombectomies than any other hospitals in Central New York. Upstate also has one of the highest acute stroke treatment rates in the country (National Average = 6%, Academic center average = 15%)

Year	IV-TPA	<45 min	<60 min	Mech thromb	Any Recanalization	Recanalization Treatment rate
2013	45	0	81.1%	47	109	19.6%
2014	58	41.2%	100%	41	95	19.5%
2015	72	67.4%	100%	37	94	18.7%

## Upstate offers: complete treatment for acute stroke and the highest quality care

### Upstate Comprehensive Stroke Center Stroke Overview 2015 YTD

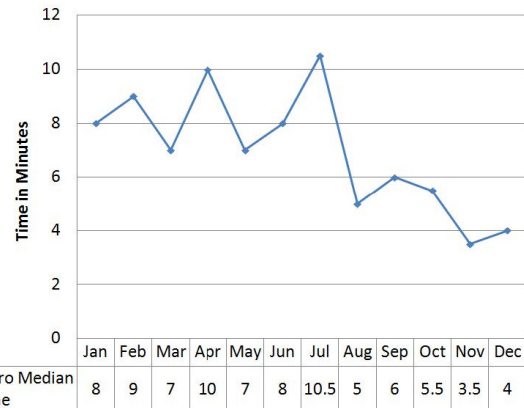
Core Measures	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec*
STK-1 VTE Prophylaxis	100	100	100	100	97.4	100	95.7	100	100	97.6	96.6	100
STK-2 Discharges on Antithrombotic Therapy	100	97.6	100	100	100	100	100	100	100	100	100	100
STK-3 Patients with A-Fib/Flutter perscribed anticoagulation therapy	100	100	100	100	100	100	100	100	100	100	100	100
STK-4 Thrombotic Therapy administered (arrive by 2 treat by 3)	100	n/a	100	100	100	100	100	100	100	100	100	100
STK-5 Antithrombotic Therapy by End of Hospital day 2	100	96.6	100	100	95.8	100	97.6	100	100	96.4	92.3	100
STK-6 Lipid Panel Obtained	97.4	97.6	97.5	100	100	100	96.6	100	97.2	97.3	100	100
STK-8 Stroke Education	100	100	100	100	100	96.2	95.5	95.8	95.2	73.9	100	100
STK-10 Assessed Rehabilitation	100	100	100	100	100	100	100	100	100	100	100	75
<b>Process Improvement</b>												
Median Door to CT (goal <12 minutes)	16.5	15.5	17	22	28	16	24	15	20.5	6.5	6	4
Dysphagia Screens (goal 90%)	94.20%	97%	95.30%	97.50%	92.30%	98%	90.20%	95.50%	92.90%	95.10%	97%	100
Stroke Codes % PTA	no data	no data	no data	12%	11%	1%	0.03%	16%	32%	34%	50%	52%
Door to Needle <45 minutes (goal 50%)	33	50	89	67	0	43	25	60	86	100	86	50
<b>Stroke Time Targets</b>												
Median Door to ED MD <b>GWTG Jan-Mar</b>	1	6.5	5	3	4	3	6	2.5	1	2.5	1	2
Median Door to CT (goal <25 minutes)	16.5	15.5	17	22	28	16	24	15	20.5	6.5	6	4
Door to CT read (goal <45 minutes)	45%	78%	68%	54%	40%	53%	37%	47%	57%	53%	54%	70%
Median Door to tPA (required goal 60 minutes/actual goal 45 minutes)	53.5	47	43	41	72	49	51.5	44.5	33	41	34	43
<b>Stroke Patient Volume</b>												
ICH	13	8	11	6	11	5	13	15	12	10	8	1
SAH	5	4	3	1	0	4	5	5	4	4	2	0
Ischemic	41	35	37	41	44	52	52	42	37	35	45	3
TIA	6	13	17	16	4	15	21	9	16	10	8	0
Total												
<b>Endovascular</b>												
AIS Endovascular Intervention Patient volume	2	3	2	3	1	3	5	4	3	4	1	0
Coiling Patient volume	2	3	1	0	0	0	4	2	3	3	1	0
<b>Average LOS</b>												
SAH (National Benchmark: 10-14)	18	7	22.75	2	38 (1 pt)	4	17.2	15.33	13.4	21	20.67	16 (3)
ICH (National Benchmark: 8-10)	11.86	5.83	12.53	5.43	8.88	14.17	5.64	6.11	7.55	9	6	7.75 (12)
Ischemic (National Benchmark: 6-8)	7.32	4.16	7.62	7.09	5.68	4.03	5.93	4.29	4.65	5.61	5.97	4.55 (44)
TIA (National Benchmark: 2)	2.5	3.75	2.62	1.69	1.8	1.67	1.6	1.6	1.83	2	1	1.67 (3)

# TIME IS BRAIN

## Median Time Door To Neurologist Evaluation

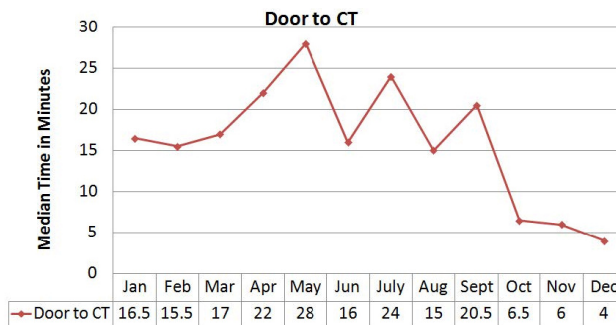
By having a neurologist in the ED at all times, stroke patients are evaluated immediately for the best care possible.

Upstate has doubled the speed to evaluation.

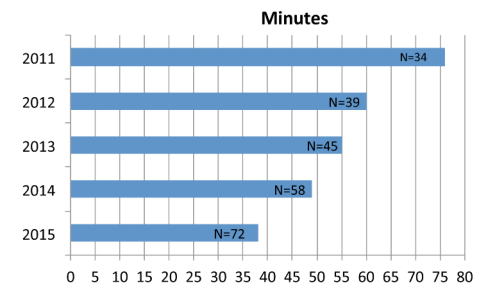


## Median Time Door To CT:

from arrival to start of CT  
With new protocols in place, patients are getting to CT quicker, so that they can get tPA quicker.



## Median Time to tPA:





# GOAL #2

# REDUCING THE BURDEN OF STROKE



*Upstate is the only hospital in Central New York with three levels of specialized care just for the brain. The specialized Neuroscience floor includes the Neuroscience Intensive Care and Neuroscience step-down units. As the area's only Comprehensive Stroke Center and medical university, Upstate also offers largest team with 24/7 board certified stroke neurologists, on-site neurosurgeons, specialists in neurointerventional radiology, neurocritical care specialists, board certified emergency physicians and neuro-certified nurses.*

## OUR MISSION

**Reducing the burden of stroke through  
Community education and public  
awareness campaigns**

### • Treatment

Working in partnership with the patient, Upstate's stroke program provides appropriate, timely and consistent standards of neurological services of the highest competence achievable and that is centered around the needs of the patient.

### • Prevention and Education

Educating communities, patients and families about prevention strategies and the challenges stroke can cause

### • Support

Providing support and assistance to families, friends and survivors of stroke

Providing consultation to outlying hospitals in the diagnosis and care of stroke patients

### • Research

Searching for new knowledge, innovative techniques and technologies related to stroke



# ENLS: EMERGENCY NEUROLOGICAL LIFE SUPPORT



## **What to do in the first critical hour of a neurological emergency**

The ENLS course is designed to help healthcare professionals improve patient care and outcomes during the critical first hours of a patient's neurological emergency. ENLS demonstrates a collaborative, multi-disciplinary approach and provides a consistent set of protocols, practical checklists, decision points, and suggested communication to use during patient management.

ENLS benefits to participants:

- Advanced knowledge to participants
- Improved patient care and outcomes
- Current information on advancements in treatment
- A select set of topics directly relevant to neurocritical care

MDs, critical care nurses, and other professionals who treat neurological emergencies benefit from ENLS's in-depth presentations of 13 critical topics including Ischemic Stroke, Subarachnoid Hemorrhage, Traumatic Brain Injury, and Intracranial Hypertension and Herniation.

Instructors: Neurocritical Care Physicians, Dr. Latorre & Dr. El Nour

Classes are held at: Upstate University Hospital Downtown Campus, Syracuse NY

Classes are for MDs, PAs, NPs, Nurses and EMS Providers.

For information on classes and to register email [schleiej@upstate.edu](mailto:schleiej@upstate.edu)

*Dr. El Nour is a board certified Neuro-intensivist specializing in treating critical, acute, and emergency neurological disorders including ischemic and all kind of hemorrhagic stroke. He finished his residency training in Internal medicine at Mount Sinai School of Medicine and completed his neuro-critical care training at Upstate Medical University. He is a diplomate of medicine and a member of American Academy of Neurology, a member of the Neuro Critical Care Society and has been an ENLS trainer since 2013.*



*Dr. Latorre is a neurologist specializing in the care of patients with all types of stroke, both ischemic and hemorrhagic. He also is a specialist in critical care neurology, caring for complex and refractory seizure requiring intensive care and all forms of traumatic brain injuries. He obtained his medical degree at the University of the East-RMMC in the Philippines and finished his neurology training at Upstate Medical University. He obtained his specialty training in stroke and critical care neurology at Massachusetts General Hospital/Brigham and Women's Hospital/Harvard Medical School in Boston, MA, before joining the Department of Neurology at Upstate in 2007. He is a diplomate and an active member of the Neurocritical Care Society. He was one of the first physicians to have Emergency Neurological Life Support (ENLS) certification and has been an instructor in the ENLS live course since 2014.*



# GOAL #3

## PROVIDE SUPPORT TO THE REGION

Upstate's Stroke Telemedicine Program is a community initiative of the Upstate Comprehensive Stroke Center to continue collaborative relationships with community hospitals to provide time-sensitive stroke intervention regardless of patient location. **There is no charge or cost to hospitals to participate and the service is free and non-binding.**

### Overview of the Upstate Stroke Telemedicine Program

#### Participants in the Stroke Telemedicine program receive:

- **24/7 stroke specialist consultation service FOR FREE;**
- **24/7 transfer center support for patients requiring transfer;**
- **Information technology support for enhanced patient consultation, including but not limited to equipment needed for video-teleconference/consultation FOR FREE;**
- **Regular and on demand local staff education/training on stroke care;**
- **Local hospital support for the application to obtain primary stroke center designation;**
- **Local hospital support for stroke quality measure collection and reporting.**

#### Current Participating Hospitals:

**Samaritan Medical Center**  
**River Hospital**  
**Carthage Area Hospital**  
**Claxton-Hepburn Medical Center**

### Telemedicine: Because Time Is Brain

Rapid evaluation and treatment of patients is the best way to minimize long term effects of stroke. The Upstate Stroke Center uses state-of-the-art-technology to provide immediate access to advanced stroke care. Our Stroke Telemedicine Program supplies the expertise and resources of board certified neurologists to the region's affiliated community hospitals 24 hours a day, seven days a week.

Telemedicine allows a neurologist to perform an exam on stroke patients and quickly decide if they are a candidate for time sensitive treatment such as the clot buster drug, tissue plasminogen activator (tPA), which can help save brain cells and decrease chance of disability related to stroke. If the patient is not eligible for tPA via an IV line, the patient can be transferred for more advanced therapies such as clot retrieval, interarterial tPA, or advanced neurosurgery.

### Benefits to Participating Hospitals

#### Telemedicine Means Immediate Connection to Stroke Specialists

The telemedicine program connects local providers with stroke specialists at the Upstate Comprehensive Stroke Center for a two-way flow of information to facilitate emergency evaluation and management of patients suffering from acute stroke. With the increasing stroke incidence, more patients are seen in community hospitals. Because of the complexity of initial stroke evaluation, and conditions that mimic it, providers have access to a collaborative consultation.

#### Timely Evaluation and Other Benefits For Patients

The goal of the Upstate Stroke Telemedicine Program is to improve the health of the stroke

patient. Patients will have access to urgent evaluation by our stroke experts, if a stroke expert in your hospital is unavailable.

Patients with uncomplicated stroke may be treated locally. This avoids unnecessary transfer, which also increases patient satisfaction and allows for more convenient family visits.

Patients with acute or more complicated stroke disorders will receive immediate intervention, and intervention can continue during the process of transfer to higher level of care — avoiding potential gaps in provision of care as a result of geographic location.

Patients who cannot be treated with standard care may be eligible for participation in the multiple clinical trials that are conducted at the Upstate Comprehensive Stroke Center. This may provide your patient with successful treatment before it becomes available to others.

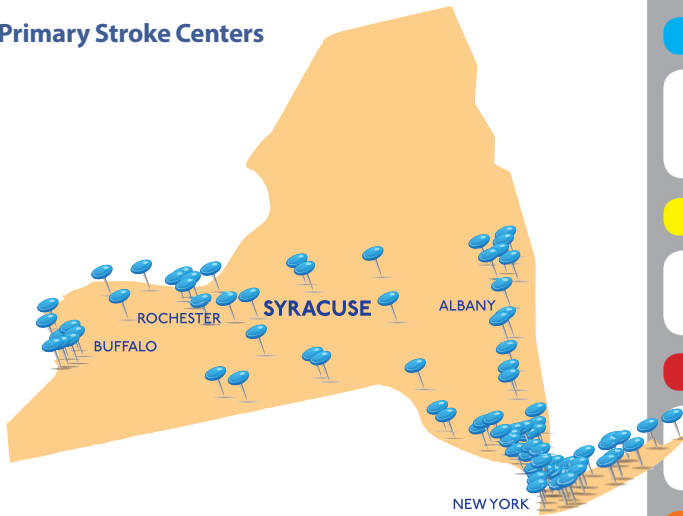
#### Free Access to Leading Edge Therapies and Training

A collaborative partnership with Upstate Comprehensive Stroke Center enables a community hospital to provide time sensitive stroke consultation and intervention. Stroke care becomes another dimension of quality and service provided by the hospital, further enhancing the hospital's image in the community as it offers innovative therapies and can accommodate increases in service volume without additional capital cost, operating cost, or additional staff.

Regular and on-demand staff education provided by the collaboration can empower hospital staff and care providers in taking care of uncomplicated patients on site, increasing productivity and improving staff confidence and work satisfaction.

## What is the difference between a **Primary Stroke Center** and a **Comprehensive Stroke Center**?

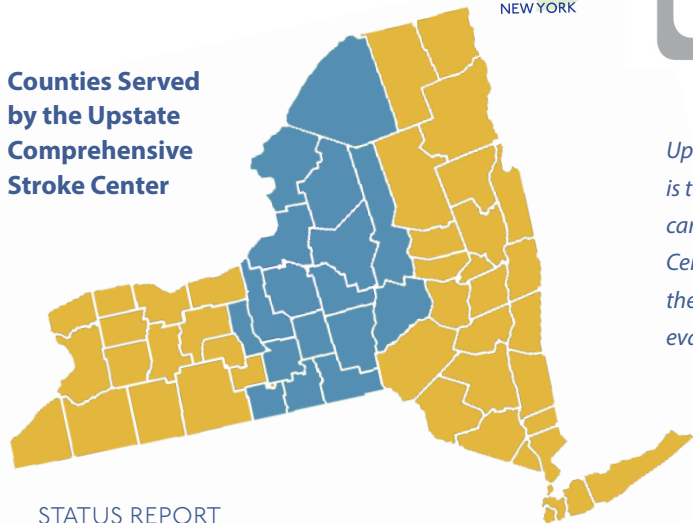
### Primary Stroke Centers



### Comprehensive Stroke Centers



### Counties Served by the Upstate Comprehensive Stroke Center



Primary Stroke Centers	Comprehensive Stroke Centers
<b>PATIENT CARE</b>	
Takes care of most cases of ischemic (blood vessel blockage) types of stroke.	Cares for <b>all types of stroke</b> patients, including bleeding (or hemorrhagic) strokes, such as those caused by brain aneurysms.
<b>MINIMALLY INVASIVE CATHETER PROCEDURES</b>	
Not required.	24/7 access to <b>minimally invasive catheter procedures</b> to treat stroke.
<b>SPECIALIZED INTENSIVE CARE UNIT FOR STROKE PATIENTS</b>	
No requirement for a separate intensive care unit for stroke patients.	Dedicated <b>neuroscience intensive care unit</b> for stroke patients.
<b>NEUROSURGERY</b>	
Access to neurosurgery within 2 hours.	<b>On site neurosurgical availability 24/7</b> with the ability to perform complex neurovascular procedures, such as brain aneurysm clipping, vascular malformation surgery and carotid endarterectomy.
<b>PATIENT TRANSFERS</b>	
Sends complex patients to a Comprehensive Stroke Center.	Receives <b>patients</b> from Primary Stroke Centers.
<b>CENTRAL NY REGION STROKE CENTERS</b>	
Crouse Hospital	Upstate University Hospital

Upstate's Stroke Telemedicine Program is the first hub to provide acute stroke care to community hospitals in the Central NY region. Established in 2007, the service has provided acute stroke evaluation and treatment to more than

150 patients at five community hospitals, with an overall intravenous tPA rate of 9.2%. Without telemedicine, these patients would otherwise not have received treatment.



# OUR MISSION

## A COMMITMENT TO QUALITY CARE

It is the mission of our program to provide the highest level of stroke care to the many communities we serve. We have a stroke team in place that is over 300 strong, with 150 nurses in our ED, neuroscience ICU, stroke unit, neuro floor and interventional radiology who have specialized stroke training. Many of our nurses even hold dual certification in neuro critical care and stroke.

As a nurse with over 20 years of critical care training, I can sincerely say that I am proud to be a member of this team. Through time and experience with stroke patients, I can confidently say that you or your loved one can expect a level of care at Upstate's Comprehensive Stroke Center that is unsurpassed.

We work tirelessly to not only meet national standards for stroke care, but to consistently exceed them.

We have a commitment to the communities that we serve – a commitment to provide community education on stroke prevention; a commitment to partner with EMS to enhance first responder stroke care; and most of all, a commitment to our patients and their families to continue to provide the highest quality of stroke care in this community.

*Jennifer Schleier RN, BSN, CCRN*  
*Stroke Program Manager*





# WE SERVE OUR COMMUNITY: EDUCATION ♦ SERVICE ♦ VOLUNTEER

I've been witness to the multitude of accomplishments that the Upstate Stroke Team has achieved. The growth inspired me to become part of this team and since being in this role, I've come to understand the complexities, extreme motivation and teamwork that make Upstate's stroke program stand above the rest.

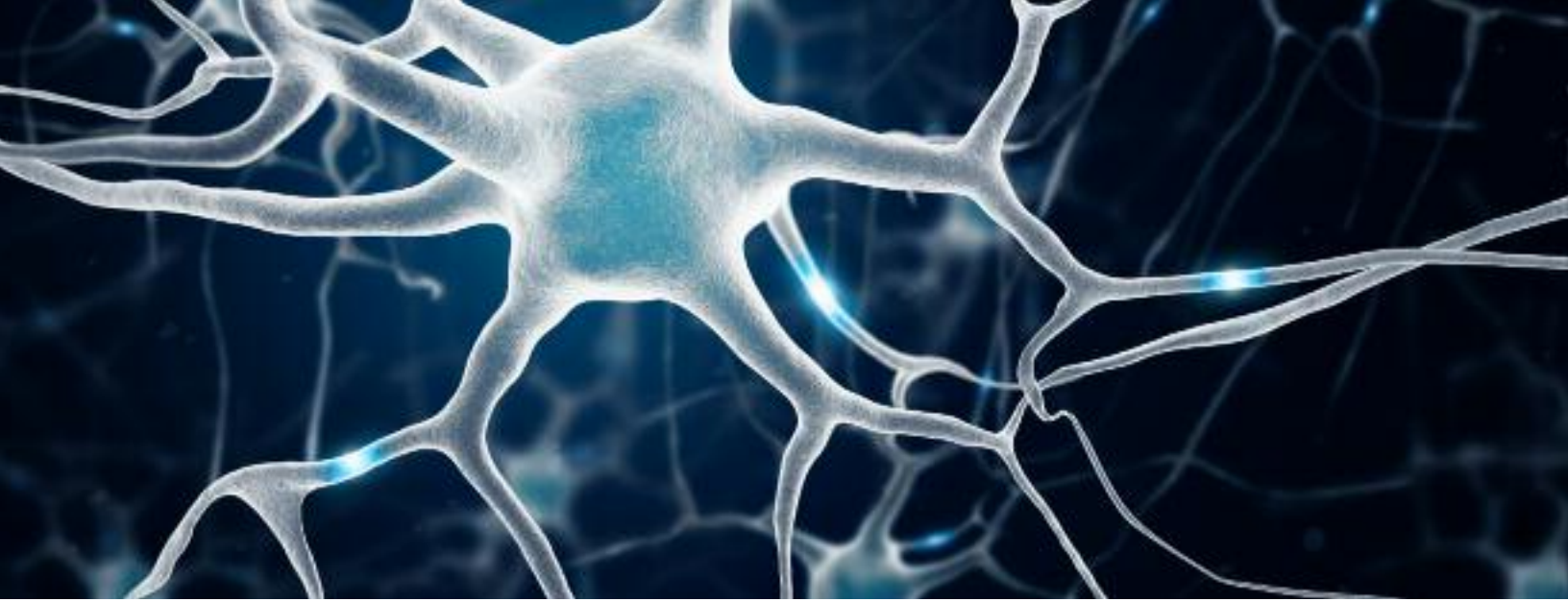
Being the newest addition to the team, I hope to integrate my nursing experience with the acute stroke patient in the hospital, with the post-stroke patient who is requiring continued support at home. I have gained a wealth of knowledge from my intensive care, interventional radiology, and home care nursing experience that I hope to share with my team and community.

I also plan to increase EMS pre-hospital notification calls, which will lead to a more rapid treatment of the stroke patient, in turn leading to better patient outcomes. I will be assisting with the implementation of the Telestroke programs establishing a vast

network of hospitals within a phone call away from Upstate's highly trained stroke physicians. The Telestroke program will not only provide quality care to the residents of the North County, but assure that the soldiers and their families stationed at Ft. Drum will also be given the best neurological care available.

This is an exciting opportunity for me to both learn and teach, and I am excited to get out and inform the community of everything the Upstate Stroke Team has to offer!

*Joshua Onyan, RN, SCRN  
Stroke Outreach Coordinator*



## DATA UPDATE



We live in an automated world where data, whether we know or not, is behind all of the things that we do and choices that we make. Having standards and benchmarks allow us to measure our own performance and create goals to be even better at what we do. We are working through this quality process every day, continually reviewing our data to ensure the best patient care.

As a bedside Neuro floor nurse for the last 7 years, I was blessed to start my nursing career here at an academic medical center. It was that constant drive and overwhelming pride that I saw in every Stroke team member, without exception, that pushed me to want to learn more about our specialty, helped me earn the neuroscience certification in nursing and into my current role of data coordinator.

I hope to continue to bring my IT training and customer support experience in improving our database and internal data collection. We will continue to strengthen our relationship with our accrediting agencies and those who write the standards and guidelines for Stroke care.

I am thrilled to lead our Stroke Community Education Program. We are eager to share our knowledge with the hope of helping others make good choices should they encounter stroke in their lives. Whether it is lecturing at a library or talking to a church group, I will pledge to all of you, if you meet one of us, you are getting our very best!

*Michelle F. Vallelunga, RN, MS,  
CNRN, SCRN  
Stroke Data Coordinator*



## A PATIENT'S STORY: QUICK ACTION LEADS TO POSITIVE OUTCOME FOR STROKE PATIENT

Syracuse, NY, May 26, 2016— It had been a typical day for Joan Lzyk., 72, from Oswego. She had enjoyed a breakfast out and was relaxing in her living room with a coloring project. When her husband arrived at home, she stood up to greet him in the kitchen, but she never made it there. She could hear her husband calling her, but was unable to respond. Joan had suffered a stroke.

"I just went down, and I could not get up," Joan said. "I couldn't talk, so I couldn't yell to him. He thought it was a stroke right away."

"Impaired speech is one of the symptoms outlined in the FAST (Face, Arm,, Speech, Time) acronym," said Josh Onyan, outreach coordinator, Upstate Comprehensive Stroke Center. "Joan's husband recognized that she was having a stroke, which helped her get the treatment she needed quickly and ultimately led to her positive outcome."

FAST is an acronym to help detect signs of stroke. F stands for facial drooping, A for arm weakness, S for speech difficulties and T for time; time is of the essence in getting treatment for stroke

The Stroke Team at Upstate's Comprehensive Stroke Center received notice that the 911 call had come in as a

possible stroke. This set the wheels in motion immediately. Oswego Fire arrived at Joan's home and had her in the ambulance within minutes. The EMS team recognized the right facial droop, right upper extremity weakness and slurred speech, consistent with the FAST symptoms. Joan was rushed to Upstate University Hospital.

Once at Upstate, Joan was greeted by doctors from both the Comprehensive Stroke Center and Emergency Departments within five minutes of her arrival, and received her CT scan at four minutes, 21 minutes faster than the New York state guidelines. The CT report from the radiologist was ready within minutes, and indicated that there was no head bleed. This allowed Joan to receive her tPA in just 24 minutes. The State recommendation for this treatment is 60 minutes.

Joan underwent clot retrieval and was resting at home just three days later, with only mild facial weakness.

EMS providers at Oswego Fire and the team at the Upstate Comprehensive Stroke Center were essential to her positive outcome.



*Joan is back home after two weeks in the hospital. She has regular followup care in her hometown and in Syracuse.*



*Upstate's new faculty members — Hesham Masoud, MD, and Grahame Gould, MD — flank Amar Swarnkar, MD in the bi-plane angiography operating room at Upstate University Hospital. Part of the intraoperative MRI surgical suite, surgeons can obtain 3-Tesla MRI scans during procedures, improving patient outcomes.*

# WELCOME NEWEST STROKE TEAM MEMBERS

## **Joining Upstate's comprehensive stroke center are two physicians with expertise in interventional clot retrieval.**

The addition of Grahame Gould, MD, and Hesham Masoud, MD, strengthens the team of professionals who provide round-the-clock stroke care at Upstate University Hospital. They join Amar Swarnkar, MD, in providing endovascular neurosurgery, including mechanical thrombolysis. This is a crucial therapy for patients suffering ischemic strokes. Swiftly locating and removing a brain clot improves the patient's odds of survival and recovery.

Upstate's stroke team earned "Honor Roll – Elite" status in U.S. News & World Report's annual Best Hospitals publication for 2016. This designation is for hospitals whose door-to-needle time is less than an hour at least 75 percent of the time, for at least four consecutive quarters. Door-to-needle time refers to the time from a stroke patient's arrival at the Emergency Department until he or she receives clot-busting tissue plasminogen activator, or tPA, if appropriate.

Grahame Gould, a native of New Orleans, comes to Upstate from Thomas Jefferson Medical College in Philadelphia. He specializes in endovascular and cerebrovascular neurosurgery.

His medical degree is from Yale University School of Medicine. He was chief resident in his 7th year of neurological surgery residency at Yale-New Haven Hospital in Connecticut, and then he completed a fellowship in endovascular neurosurgery at Thomas Jefferson.

Gould is the author of chapters in textbooks including "Operative Neurosurgical Tech-

niques" and "The Comprehensive Treatment of the Aging Spine: Minimally Invasive and Advanced Techniques" and has been published in a variety of medical journals. He and six other inventors hold a patent on an intraventricular brain-cooling catheter.

Hesham Masoud has expertise in endovascular surgical neuroradiology and vascular neurology. He comes to Upstate from Boston Medical Center and the Boston University School of Medicine, where he was an assistant professor of neurology.

Masoud received his medical degree from Ain Shams University in Cairo. He completed his internship and residency in neurology at Case Western Reserve School of Medicine in Cleveland, where he was selected to serve as chief resident his senior year. He then went on to complete a combined fellowship in vascular neurology and endovascular surgical neuroradiology at Boston Medical Center.

He lectures and writes about acute stroke therapy, intracranial stenting, endovascular management of cerebral aneurysms, neuroimaging of intracerebral hemorrhage and other topics.

In addition to the clinical care they provide to adult patients, both physicians have faculty appointments and will be involved in research as well as teaching the next generation of physicians and surgeons.

The presence of Gould, a neurosurgeon, Masoud, a stroke neurologist, and Swarnkar, a neuroradiologist — all three with expertise in acute stroke rescue therapy — highlights the three-disciplinary approach to endovascular management of stroke at Upstate.



# MEET UPSTATES STROKE NEUROLOGISTS



**Antonio Culebras, MD**

Professor of Neurology  
 Education/Training  
 MD: University of Madrid, Spain  
 Residency: Cleveland Clinic Foundation  
 Fellowship: Cleveland Clinic Foundation  
 Specialties/Certification:  
 Neurology  
 Sleep Medicine  
 Neurophysiology  
 Vascular Neurology  
 Treats: Adults  
 Treatment/Services:  
 Acute Stroke Care  
 Cerebrovascular diseases  
 Sleep disorders  
 Sleep Apnea  
 Narcolepsy  
 Parasomnias  
 Sleep studies  
 EEG  
 Tissue plasminogen activator treatment



**Hesham Masoud, MD**

Assistant Professor of Neurology, Neurosurgery and Radiology  
 Education/Training  
 MD: Ain Shams University, Egypt  
 Residency: Case Western Reserve University SOM, OH  
 Fellowship: Boston Medical Center, MA  
 Specialties/Certification:  
 Neurology  
 Vascular Neurology  
 Endovascular  
 Neuroradiology  
 Treats: Adults  
 Treatment/Services:  
 Acute Stroke Intervention  
 Acute Stroke Care  
 Cerebrovascular diseases  
 Tissue plasminogen activator treatment  
 Carotid stenosis  
 Intracranial atherosclerosis  
 Brain aneurysm  
 Head and neck tumor embolization  
 Cerebral vasospasm  
 WADA test  
 Cerebral angiogram  
 Mechanical thrombectomy for stroke



**Carmen Martinez, MD**

Assistant Professor of Neurology  
 Education/Training  
 MD: Universidad Libre de Colombia, Colombia  
 Residency: New York Medical College, NY  
 Fellowship: Albert Einstein/Montefiore Medical Center, NY  
 Specialties/Certification:  
 Neurology  
 Vascular Neurology  
 Treats: Adults  
 Treatment/Services:  
 Acute Stroke Care  
 Cerebrovascular diseases  
 Tissue plasminogen activator treatment



**Elwaleed Elnour, MD**

Assistant Professor of Neurology and Neurosurgery  
 Education/Training  
 MD: Omdurman University, Sudan  
 Residency: Mount Sinai Hospital, NY  
 Fellowship: SUNY Upstate, NY  
 Specialties/Certification:  
 Internal Medicine  
 Vascular Neurology  
 Neurocritical Care  
 Treats: Adults  
 Treatment/Services:  
 Acute Stroke Care  
 Cerebrovascular diseases  
 Tissue plasminogen activator treatment  
 Neurocritical care  
 Intracranial hemorrhage  
 Subarachnoid hemorrhage  
 Status epilepticus  
 Myasthenia gravis  
 Guillain-Barre Syndrome  
 Traumatic brain injury  
 Traumatic spinal cord injury  
 Therapeutic Hypothermia  
 Anoxic brain injury  
 CNS infection  
 Multimodality  
 Neuromonitoring



**Julius Gene Latorre, MD, MPH**

Associate Professor of Neurology and Neurosurgery  
 Education/Training  
 MD: University of the East, Philippines  
 Residency: SUNY Upstate, NY  
 Fellowship: SUNY Upstate, NY  
 MGH/BWH/Harvard SOM, MA  
 Specialties/Certification:  
 Neurology  
 Vascular Neurology  
 Neurophysiology  
 Neurocritical Care  
 Treats: Adults  
 Acute Stroke Care  
 Cerebrovascular diseases  
 Tissue plasminogen activator treatment  
 Neurocritical care  
 Intracranial hemorrhage  
 Subarachnoid hemorrhage  
 Status epilepticus  
 Myasthenia gravis  
 Guillain-Barre Syndrome  
 Traumatic brain injury  
 Traumatic spinal cord injury  
 Therapeutic Hypothermia  
 Anoxic brain injury  
 CNS infection  
 Multimodality  
 Neuromonitoring

# A PATIENT'S STORY: HELPING A RUNNER REGAIN HIS FOOTING AFTER STROKE

Months after dragging himself across a hotel room floor to phone for help, Kyle Reger, 41, has diligently worked his way toward recovery from a stroke.

That meant weeks in a hospital bed, months of rehabilitation and — particularly hard for a lifelong athlete and runner who has finished marathons — having to depend on others for things like car rides as he struggled to regain the use of his left side.

Throughout his recovery, Reger was bolstered by the support of his family and friends, his hometown of Cazenovia and his employer, and he learned a new appreciation for the little things, like being able to pick up and use a pepper shaker.

Further, some long-awaited good news arrived during his rehabilitation. Reger and his wife, Marla Velky-Reger, were told that their son Max, a first-grader, is now considered cancer free.

Reger, who travels the Northeast for his sales job, was alone in a Massachusetts hotel room on Sept. 4 when he awoke with a calf cramp in the wee hours of the morning. He had run the night before.

"I remember trying to flex my toe, to prevent it from continuing, and I couldn't flex my toe, and I just thought it was odd," Reger said. Then he noticed his left side felt asleep, and he tried to jump out of bed to shake it out but crashed onto the floor instead.

It finally dawned on him: He was having a stroke.

He managed to drag himself to the phone and call for help.

He was admitted to Springfield's Baystate Medical Center, with a bleed in his brain, a hemorrhagic stroke. Six days later, he was transferred to Upstate University Hospital in Syracuse, where he stayed about three weeks.

"I don't think I could move anything when I arrived at Upstate," he says, but in the months of outpatient rehabilitation that followed — working with parallel bars, bikes and other equipment — he has been relearning how to use his left hand, arm and leg.

From the thrill of watching his thumb move a tiny bit to walking (at first with a cane) to being able to drive a car again in February, he estimates his abilities have come back about 90 percent, enough to play the piano.

His doctors concur.

"Having a positive attitude and an active lifestyle prior to his stroke have certainly helped him progress," says Shernaz Hurlong, DO, the physician overseeing Reger's rehabilitation.

"He made an excellent recovery in part because of his good health and excellent attitude, but also because he received expert care at the hospitals he was taken to. This gave his brain the best possible chance to heal itself. He's well on his way to a full recovery," agrees Lawrence Chin, MD, Upstate's chairman of neurosurgery. Reger's stroke resolved itself and did not require surgery.

Friends, neighbors and former college soccer teammates held fundraisers to defray his medical costs, brought meals, drove him to appointments and cheered him on.



*Physical therapist Daisy Sandbek works with Reger in University Hospital's Rehabilitation Center last September.*

His company hired a retiree to help cover his job, and Reger returned to work part time in December, then full time in February. Being able to drive again was "a huge gain to my mental health" he says, both restoring his independence and ability to work and relieving some of the strain on his wife.

The couple has two sons, Jackson, 3, and Max, 7, who was diagnosed with Wilms' tumor, a kidney cancer, at 16 months and underwent chemotherapy, the removal of a kidney and radiation treatments. Max recently achieved "survivor" status, meaning he has been free of cancer for five years.

Max ran the Chilly Chili 5K, a January race in Cazenovia, then returned to walk the route alongside his father, who was determined to finish the course, and did.

Reger hopes to be able to run again by the end of summer and to do a marathon again someday. He also considers himself blessed for the support and insights his stroke revealed.