

A 3D medical illustration of blood vessels. The vessels are shown in cross-section, with a central lumen containing numerous red blood cells. The vessels are rendered in shades of red and orange, with a semi-transparent effect. The background is a soft, light green. A white rectangular box is centered over the vessels, containing the text "STROKE & CEREBROVASCULAR".

STROKE & CEREBROVASCULAR

The American Stroke Association reports that as of 2016, stroke is the 5th leading cause of death in the United States, killing almost 133,000 people every year and accounting for 1 in every 20 deaths. Fortunately, though, due to advanced treatment options and the early recognition of stroke symptoms, the past 10 years have seen a decline in the death rate from stroke by about 29%. Still, almost 800,000 people have a stroke every year, which averages to about one stroke every 40 seconds.

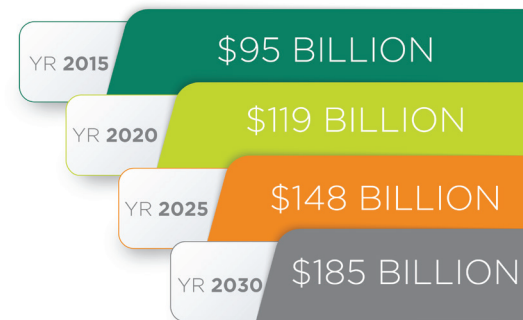
The decreased rate of stroke mortality over the past decade is a major improvement in population health seen in both sexes across all age groups and races, and is largely contributed to significant improvements with cardiovascular risk factors and their control. Better management of diabetes and high cholesterol, along with smoking cessation and advanced hypertension treatments, also appear to have led to the decline in the number of stroke deaths.

Despite the decline in deaths, the incidence of stroke is still on the rise and continues to be the leading cause of long-term disability in the United States. Furthermore, the prevalence of stroke in younger adults and even children has increased, leading to focused efforts on not only the management of stroke risk factors, but also the education of the population to identify stroke symptoms and seek treatment sooner.

In order to maintain our status as a leader in cutting-edge stroke treatments and protocols, Aurora Health Care has established evidence-based care guidelines at all sites for all types of stroke patients to ensure that best clinical practice is followed to maximize recovery, manage complications, and prevent long-term deficits for our patients. In addition to that, highly functional and specialty-trained teams have been constructed to guide the stroke patient through every step of the diagnosis and treatment process including neuroscience nurse practitioners, physician assistants, nurse navigators, and trained stroke responders. Coupled with an extensive team of stroke, cerebrovascular, endovascular and critical care neurologists, stroke patients at Aurora are cared for by the highest level of medical professionals available.

AT A GLANCE

COST OF STROKE IN THE U.S.



PREVALENCE OF STROKE

	AGE	%
Men	20-39	0.20
Women		0.70
Men	40-59	1.90
Women		2.20
Men	60-79	6.10
Women		5.20
Men	80+	15.80
Women		14



Stroke kills someone in the US

every 4 minutes



Stroke is the **leading cause of long-term disability**

STROKE CERTIFICATION

Meeting the highest standards to support better outcomes from stroke care

Primary Stroke Certification

Primary Stroke Certification recognizes hospitals for going above and beyond the standard of care to ensure ischemic stroke patients receive the highest level of treatment options and quality measures. Eligibility standards set by the American Heart Association/American Stroke Association include:

- A dedicated stroke-focused program and stroke unit
- Staffing by qualified medical professionals trained in stroke care
- Individualized care to meet stroke patients' needs
- Coordination of best practice care of stroke patients across the continuum
- Participation in stroke care databases to continually assess improve quality of care

Comprehensive Stroke Certification

In addition to this, some hospitals may also qualify for Comprehensive Stroke Certification, which meets all of the primary requirements, as well as sets the highest standards for the care of hemorrhagic patients and the most complex stroke patients eligible for surgical or endovascular intervention. Comprehensive eligibility standards include the following:

- Availability of advanced imaging techniques, including MRI/MRA, CTA, DSA, and TCD
- Availability of personnel trained in vascular neurology, neurosurgery, and endovascular procedures
- 24/7 availability of personnel, imaging, operating room, and endovascular facilities

- ICU/neuroscience ICU facilities and capabilities
- Experience and expertise treating patients with large ischemic strokes, intracerebral hemorrhage, and subarachnoid hemorrhage

According to the Joint Commission, the governing body currently certifying the Primary and Comprehensive Stroke Centers at Aurora Health Care, the benefits of certification reach far beyond the accolades of the accomplishment. Certification signifies that our organization has established a consistent approach to stroke care, reducing the risk of error, and has maintained a consistently high level of quality using effective data-driven performance improvement.

Get With the Guidelines®

Aurora Health Care is proud to be a participating member in the American Heart Association's (AHA) Get With The Guidelines® (GWTG) program, an in-hospital database that promotes consistent adherence to the latest scientific treatment guidelines for stroke. Participation with GWTG allows our stroke care teams to have constant access to the most up-to-date research and scientific publication, gives us a competitive advantage in the healthcare marketplace, and provides performance feedback reporting for continuous quality improvement.

Target Stroke Awards

- **Target: Stroke Honor Roll:** Time to therapy within 60 minutes in 50% or more of acute ischemic stroke patients treated with IV tPA
- **Target: Stroke Honor Roll-Elite:** Time to therapy within 60 minutes in 75% or more of acute ischemic stroke patients treated with IV tPA
- **Target: Stroke Honor Roll-Elite Plus:** Time to therapy within 60 minutes in 75% or more of acute ischemic stroke patients treated with IV tPA & DTN, within 45 minutes in 50% of acute ischemic stroke patients treated with IV tPA

PRIMARY STROKE CENTERS:

Aurora BayCare Medical Center	Gold Plus, TARGET Stroke Honor Roll-Elite Plus
Aurora Medical Center Manitowoc County	
Aurora Medical Center Oshkosh	Gold Plus
Aurora Sheboygan Memorial Medical Center	Gold Plus, TARGET Stroke Honor Roll-Elite
Aurora Medical Center Summit	Gold Plus, TARGET Stroke Honor Roll-Elite Plus
Aurora Medical Center Grafton	Gold Plus, TARGET Stroke Honor Roll-Elite
Aurora St. Luke's Southshore	Gold Plus
Aurora Sinai Medical Center	Gold Plus, Target Stroke Honor Roll
Aurora West Allis Medical Center	Gold Plus
Aurora Memorial Hospital of Burlington	Gold Plus
Aurora Medical Center Kenosha	Gold Plus
Aurora Lakeland Medical Center	Gold Plus

COMPREHENSIVE STROKE CENTERS:

Aurora St. Luke's Medical Center	Gold Plus, TARGET Stroke Honor Roll-Elite Plus
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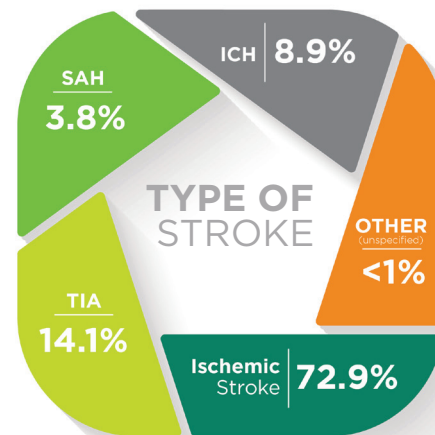
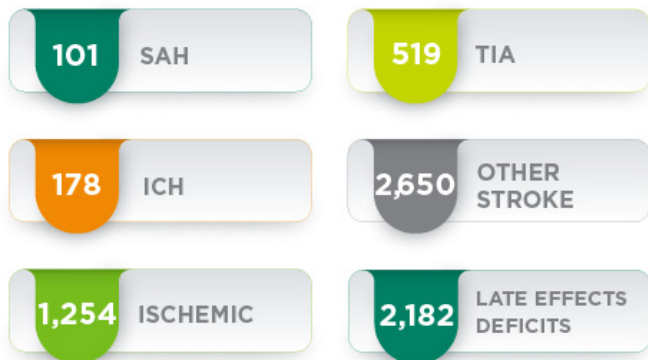
Of the 44 certified stroke centers in the state of Wisconsin, Aurora Health Care locations are 13 of them, representing about **30% of the entire state.**



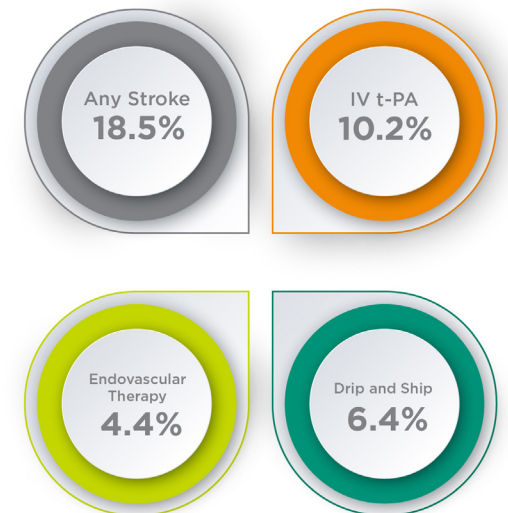


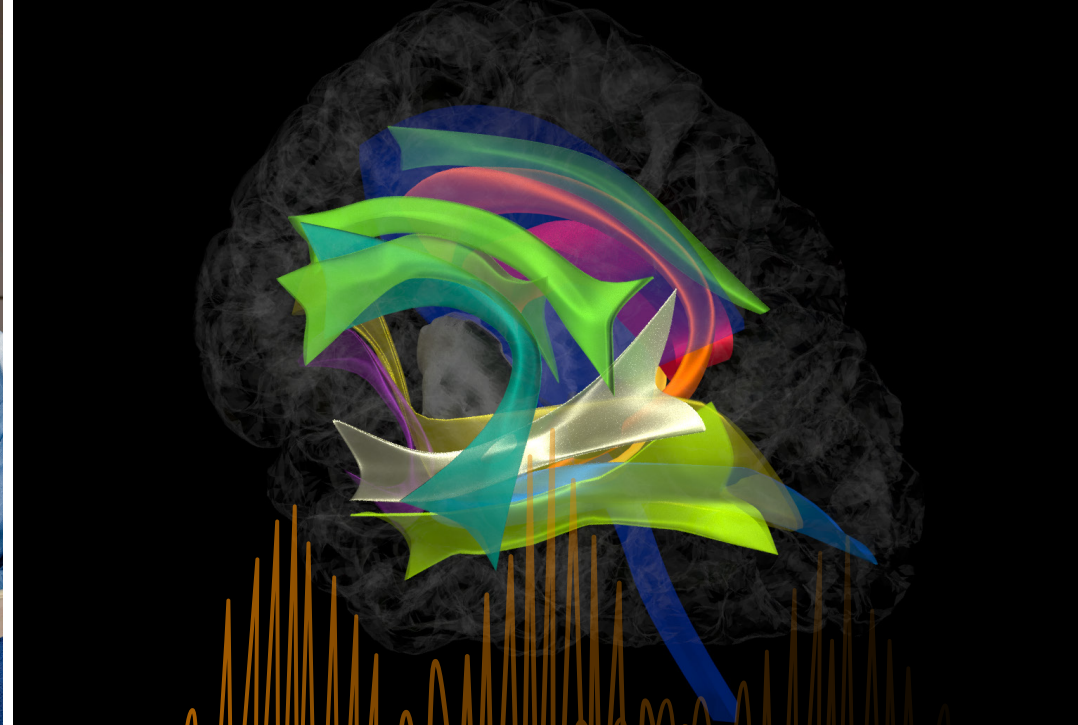
BY THE NUMBERS

OUTPATIENT STROKE VISITS



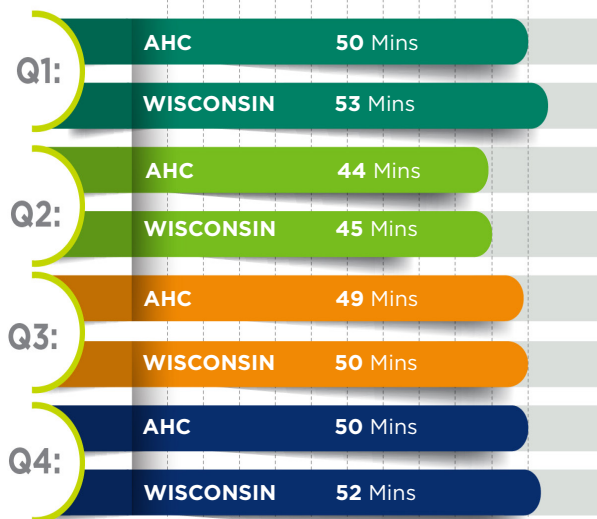
THROMBOLYTIC THERAPY



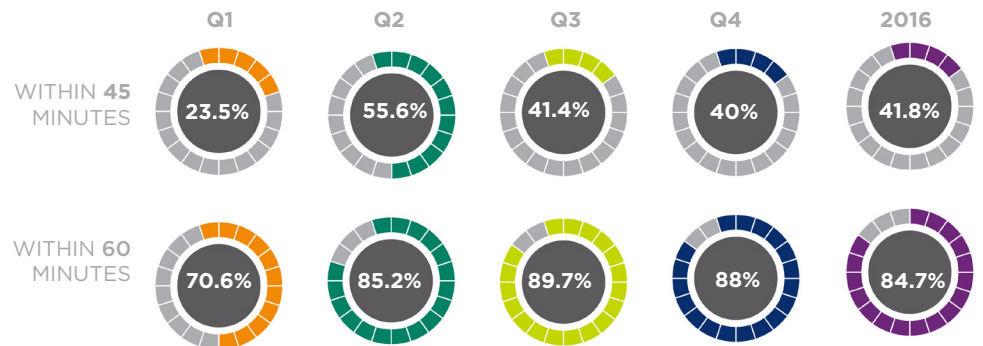


MEDIAN TIME DOOR TO NEEDLE

00 05 10 15 20 25 30 35 40 45 50



DOOR TO NEEDLE



NEUROENDOVASCULAR INTERVENTION

Neuroendovascular conditions are complex conditions of the central nervous system—the brain, spine, and peripheral nerves. In the past, no treatment may have existed. Today, the neuroendovascular subspecialty makes it possible for highly trained physicians to diagnose and treat these conditions, including strokes, aneurysms, and arteriovenous malformations, in addition to a variety of other diseases.

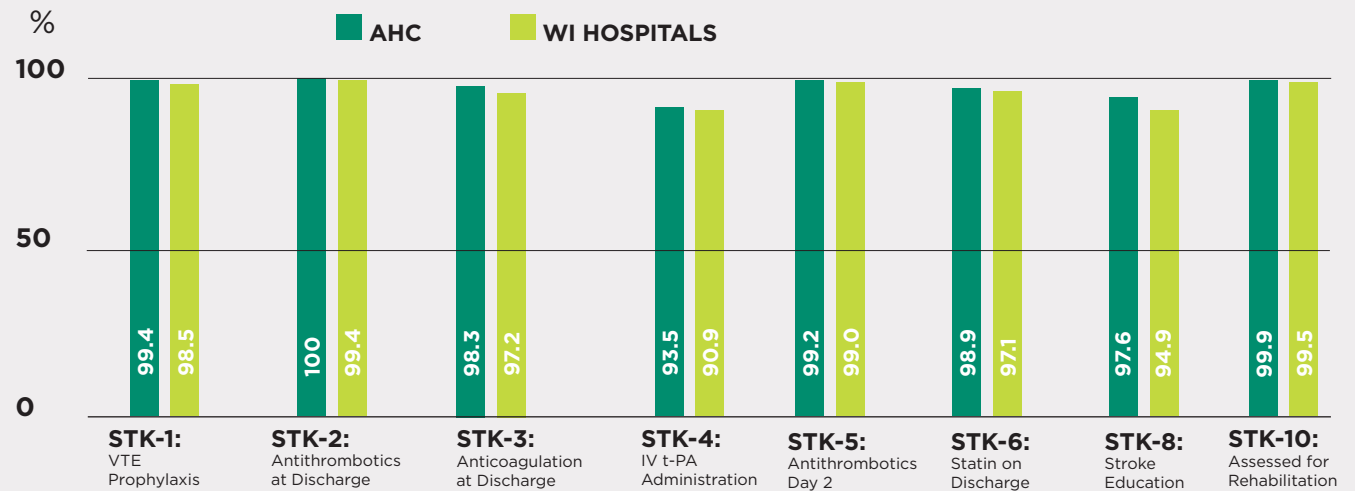
Our expert physicians at Aurora St. Luke’s Medical Center and Aurora BayCare Medical Center perform the very latest procedures using first-in-class minimally invasive technology. Also known as endovascular surgical interventional neurology or neurointerventional surgery, neuroendovascular care allows physicians to use high-tech radiology to view, isolate, and treat the source of a wide variety of central nervous system conditions.

Our innovative treatments are designed to save lives and minimize disability. High-tech, less-invasive procedures also have the benefit of shorter hospital stays and easier recovery periods.

Time matters after a stroke. After a certain window of time has passed, patients who have had an ischemic stroke are no longer suitable to receive medication designed to break up the clot. With 24/7 access to neurointervention care, stroke patients at Aurora can be treated by a team that specializes in stroke care. For specific cases, a specially trained physician can use minimally invasive procedures to enter the affected brain vessels and break up or pull out the blood clot.

Primary Core Measures

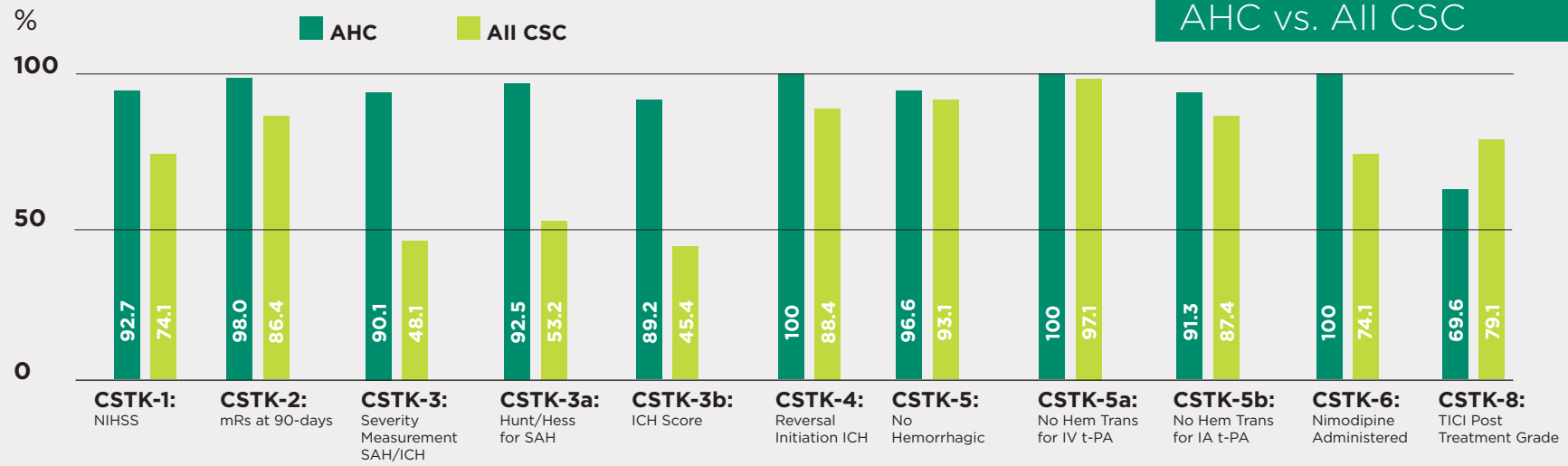
AHC vs. WI Hospitals





Comprehensive Core Measures

AHC vs. All CSC



CSTK-7:
Median Time to Revascularization

118 mins	121 mins
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CSTK-9:
Median Time to Skin Puncture

62.5 mins	81 mins
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BY THE NUMBERS

Mortality of hemorrhagic stroke was **6.47%**, with risk-adjusted expectation at **7.55%**

Overall readmission rate for stroke was **7.17%**, with risk-adjusted expectation at **8.82%**

INTERVENTIONAL PROCEDURES



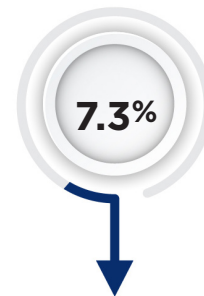
Elective
Carotid
Intervention



Cerebral
Angiogram



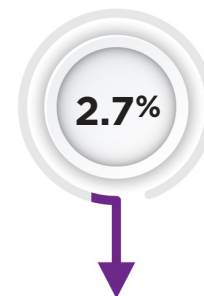
Aneurysm
Clipping



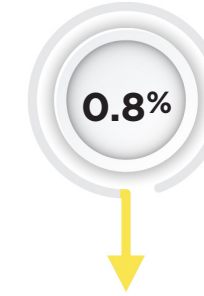
Aneurysm
Coiling



Carotid Angio
w/ Intervention



Cerebral
Embolization



WADA

In a recent study by the American Heart Association and the American Stroke Association, the FAST (Face Arms Speech Time) stroke recognition tool identified anywhere from 69% to 90% of strokes. However, FAST missed up to 40% of those with posterior circulation events and also does not include the cardinal sign of hemorrhagic strokes—a sudden onset of the worst headache of someone’s life. Further, it was found the use of BE FAST (Balance Eyes Face Arms Speech Terrible headache) could reduce the missed stroke diagnoses to as low as 4.4%. For these reasons, in October of 2016, Aurora adopted the more inclusive BE FAST stroke recognition tool. This change will be used in the foreseeable future to more comprehensively educate our communities on the signs, symptoms, and response to stroke.

A stroke is an emergency. Every minute counts.

B.E. F.A.S.T

BALANCE: Sudden loss of balance or coordination

EYES: Sudden change in vision; loss of vision, blurry vision or double vision

FACE: Facial droop , uneven smile

ARMS: Arm or leg weakness or numbness

SPEECH: Slurred speech, trouble speaking , trouble understanding speech

TERRIBLE HEADACHE: Sudden onset of a terrible headache

Call 911. Get to the hospital immediately. **Have the ambulance take you to the nearest hospital with a certified stroke center.**