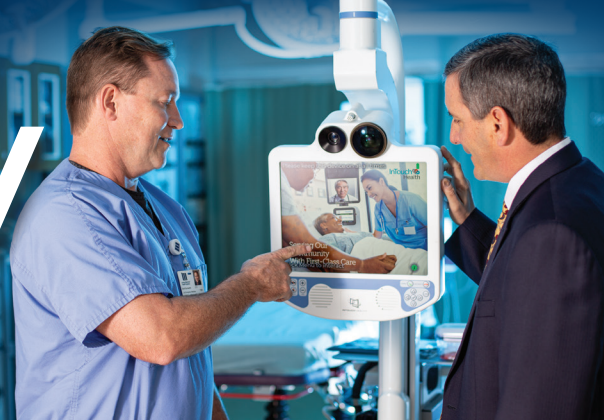


Licking Memorial Health Systems Quality Report Card

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STROKE CARE



Different Types of Stroke

Stroke is a disease that affects the arteries leading to and within the brain. It is the number four cause of death and the leading cause of disability in the United States. A stroke occurs when the blood supply is blocked or reduced to an area of the brain preventing brain tissue from receiving oxygen and nutrients. Stroke can cause lasting brain damage, long-term disability, or even death. Symptoms of a stroke are persistent for greater than 24 hours. There are different types of strokes, and it is important to understand the symptoms and risk factors of each. All types of strokes are medical emergencies and require immediate intervention.

There are three primary types of strokes: Ischemic, Hemorrhagic, and Transient Ischemic Attack (TIA). Ischemic stroke is the most common type and accounts for nearly 90 percent of all cases. An ischemic stroke occurs when a blood vessel supplying the brain becomes blocked by a blood clot or plaque. A thrombotic clot is a clot that forms in an artery leading to the brain. An embolic clot forms in another area of the body and travels to the brain. Symptoms of an ischemic stroke include sudden numbness or weakness, particularly on one side of the body, confusion, difficulty speaking, or vision loss.

The primary risks of ischemic stroke involve conditions that can narrow the arteries or cause blood to clot more easily, such as high cholesterol, atrial fibrillation (AFib), diabetes, smoking, and carotid artery disease. High levels of low-density lipoprotein (LDL) cholesterol, also known as “bad” cholesterol, can cause the buildup

of plaque in the arteries which can reduce or block blood flow to the brain. AFib is an irregular heart rhythm that can cause blood to pool in the heart, which can form clots that travel to the brain. High glucose levels due to diabetes can damage blood vessels over time, making clots more likely to develop. Smoking can increase plaque buildup because the chemicals in tobacco smoke promotes clotting in the bloodstream. Carotid artery disease is a narrowing of the neck arteries caused by atherosclerosis, a buildup of plaque in the artery walls, that can lead to a stroke if left untreated.

A hemorrhagic stroke occurs when a blood vessel in the brain leaks or ruptures. The bleeding compresses brain tissue, causes swelling, and kills brain cells. Hemorrhagic strokes can be caused by aneurysms, which are weak spots in blood vessel walls. This type of stroke is often characterized by a sudden, extremely severe headache. Many people describe it as the worst headache of their life. Nausea, vomiting, and loss of consciousness are also symptoms of a hemorrhagic stroke.

Risks associated with hemorrhagic stroke are conditions that weaken the vessel walls or increase the pressure within the walls. High blood pressure, aneurysms, blood thinning medication, and heavy alcohol or drug use can increase the risk of hemorrhagic stroke.

High blood pressure is a major risk factor for stroke. High blood pressure is defined as a systolic blood pressure above 140 mmHg and/or a diastolic blood pressure above 90 mmHg. Systolic blood pressure

is the maximum pressure in the arteries when the heart contracts. Diastolic blood pressure is the minimum pressure in the arteries between contractions of the heart. Left uncontrolled, high blood pressure can weaken the vessels and cause damage which can lead to a stroke.

An aneurysm is a weakened, bulging area in an artery wall that can fill with blood and can pose a risk of rupture and life-threatening bleeding. A cerebral aneurysm occurs in the brain and can be caused by high blood pressure, smoking, or atherosclerosis. Individuals who take anticoagulants, or blood-thinning medications, have a higher risk of hemorrhagic stroke because the medication can increase the risk of bleeding if there is a blood vessel leak.

Excessive alcohol use damages the liver, which can prevent it from producing coagulating substances that help blood to clot, increasing the chance of a hemorrhagic stroke. Using illicit drugs, such as cocaine, can cause sudden, massive spikes in blood pressure that can trigger a rupture in the blood vessels.

A transient ischemic attack (TIA) is commonly referred to as a mini stroke. A TIA is a brief blockage of blood flow to part of the brain, spinal cord, or retina that can cause stroke-like symptoms including numbness or weakness on one side of the body, dizziness or loss of balance, trouble speaking or understanding speech, and vision problems. Symptoms can last anywhere from just a few minutes up to 24 hours. TIA does not cause damage to brain cells or permanent disability. TIA is

Different Types of Stroke (continued on next page)

Different Types of Stroke (continued from front page)

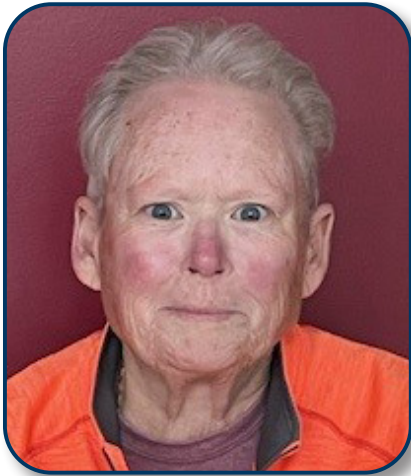
often an early warning sign that a person has an increased risk of experiencing a stroke.

The risk factors for a TIA are identical to those of an ischemic stroke. TIA also shares the same underlying causes as an ischemic stroke. Individuals who have had prior TIAs are at a significantly greater risk to experiencing another one or having a

stroke. Age and family history are also risk factors for TIA.

Obesity, physical inactivity, poor diet, smoking, and sleep apnea increase the general risk for all types of strokes. A healthy diet helps to maintain a healthy weight and improve high blood pressure and high cholesterol. Limiting sodium in your diet works to lower blood pressure.

Consuming foods high in fiber and low in saturated fats, trans fat and cholesterol is helpful in preventing high cholesterol. It is recommended that adults participate in 150 minutes of moderate-intensity activity per week which is equivalent to 30 minutes a day for five days a week. Other healthy choices that can greatly reduce the risk of stroke include tobacco cessation and limiting alcohol consumption.



A lifelong resident of Licking County, Terisa Monroe grew up in Heath with her eight siblings. Her parents fostered children and adopted her and three other children. The large family, that now includes numerous nieces, nephews, grandnieces, and grandnephews, have been a source of support and comfort in the past few years as Terisa has worked to recover from a series of strokes.

Terisa's journey began in October 2024. She and her partner had spent the day in a car driving home from a vacation. They stopped to eat when Terisa noticed her arm was numb. Too tired to worry about the numbness and not experiencing any other symptoms, Terisa waited until the next morning to visit the Licking Memorial Hospital Emergency Department (ED). After a number of tests, Terisa was told that she had experienced a stroke. The staff then performed a bubble study to

Patient Story – Terisa Monroe

track the flow of blood to the heart to determine if she had a blocked artery. During the exam, a mixture of sterile saline and a small amount of air is shaken to create bubbles then injected into a vein. Staff then perform an echocardiogram to watch the bubbles circulate through the heart. This type of diagnostic testing is often utilized on people who experience an unexpected stroke but have no obvious stroke risk factors, such as high blood pressure or atrial fibrillation. The results can provide clues about a possible cause and assist in determining treatment.

After determining that the cause of the stroke was not due to issues with her heart, the staff decided to prescribe anti-platelet medication, or blood thinners, to prevent unwanted clots. Terisa was released and resumed her daily activities. In February 2025, Terisa was having difficulty speaking and went to the ED immediately. After testing and scans, the staff confirmed Terisa had experienced a second stroke. Again, no cause was found and she was advised to continue her anti-platelet medication.

Terisa then experienced a third stroke a few months later. Numerous blood tests were performed and staff members were able to determine the cause of Terisa's strokes. They determined that Terisa has a protein C deficiency, a disorder that increases the risk of developing

abnormal blood clots. Protein C is one of many natural anticoagulants in blood that prevents blood from clotting. Blood naturally needs to clot to stop internal bleeding. Without enough protein C in a person's system, an excessive amount of clotting may occur leading to life-threatening issues including stroke, deep vein thrombosis, and pulmonary embolism. Protein C deficiency is typically inherited and caused by a gene mutation.

"Once they determined I had protein C deficiency, my medications were completely changed," Terisa shared. "I have not experienced an episode since and I am able to participate in the activities I enjoy most including golf and mowing my yard. I really love the look of a freshly mowed lawn. I also like staying active. I visit the YMCA two to three times a week and ride my bicycle around the neighborhood when the weather is nice."

The staff at Licking Memorial Neurology, including Neurologist Gloria M. Galloway, M.D., worked with Terisa to manage her symptoms. She now takes an anticoagulant medication that prevents and treats dangerous blood clots. In November, Dr. Galloway noted that Terisa was doing very well on her current medications and released Terisa from her care. Now, Terisa just visits her primary care physician for check-ups.

Stroke Care – How do we compare?

At Licking Memorial Health Systems (LMHS), we take pride in the care we provide. To monitor the quality of that care, we track specific quality measures and compare to benchmark measures. Then, we publish the information so you can draw your own conclusions regarding your healthcare choices.

- 1.** Thrombolytic drugs, sometimes called “clot-busters,” often are effective in treating a stroke in progress, and may even reverse some of the neurological damage. However, thrombolytic drugs can have dangerous side effects. To lower the risk of complications, thrombolytic drugs can be given only to patients who have arrived at the Emergency Department (ED) quickly enough to have the drugs initiated within four and a half hours of their first symptoms of having a stroke.

	LMH 2023	LMH 2024	LMH 2025	LMH Goal
Eligible stroke patients who received timely thrombolytic drugs in the ED	96.9%	100%	93.8%	88%

- 2.** Tenecteplase (TNK) and tissue plasminogen activator (tPA) – FDA-approved medications for acute ischemic strokes, are given through intravenous therapy (IV) in the arm, and work by dissolving clots and improving blood flow to the part of the brain being deprived. tPA can help reduce damage to the brain and the long-term effects of stroke. Minimal time to administration produces brain-saving benefits.

	LMH 2023	LMH 2024	LMH 2025	LMH Goal
Median time from arrival to administration of tPA	57 Minutes	59 Minutes	57 Minutes	60 Minutes

- 3.** Quick access to brain scan results is critical to physicians when treating a patient with a suspected stroke. Clot-buster medications can be administered, but only for a short period of time after the patient’s stroke symptoms begin, and the medications may not be given until a brain scan is completed. Quick completion of a brain scan upon the patient’s arrival can reduce the amount of time elapsed before these important medicines can be given, which then increases the patient’s chance for improved recovery from a stroke.

	LMH 2023	LMH 2024	LMH 2025	National ⁽¹⁾
Stroke patients in the ED with brain scan results within 45 minutes	88%	100%	92%	69%

- 4.** Ischemic stroke is a type of stroke that results in damage to the brain caused by an interruption or blockage in blood flow. It is the most common type of stroke. A stroke can result in death, so seeking medical attention quickly is vitally important. Licking Memorial Hospital (LMH) measures the rate of in-hospital death of patients suffering an ischemic stroke. Prompt and comprehensive stroke treatment can reduce the risk of death and long-term complications. Lower percentages are preferable.

	LMH 2023	LMH 2024	LMH 2025	National ⁽²⁾
Ischemic stroke – inpatient mortality rate	0.00%	0.80%*	0.00%	1.85%

*In 2024, one individual suffered a fatal ischemic stroke.

- 5.** The “incidence rate” is a measure of how often ischemic strokes occur in our community, as compared to national averages. It is measured as the number of patients who are admitted with a stroke, out of every 1,000 admitted patients. Rates higher than average mean that more patients are admitted to the Hospital with strokes than the national average, while lower rates indicate fewer strokes occur in the community than the national average. Lower numbers are preferable.

	LMH 2023	LMH 2024	LMH 2025	National ⁽²⁾
Incidence rate	16.06	20.29	19.47	19.38

- 6.** Atrial fibrillation, also known as “AFib,” is a condition in which the heart does not pump blood effectively. Patients with AFib are five times more likely to suffer a stroke than the general population, and many patients may be unaware that they have it. Patients with AFib are at risk of having blood clots form inside their heart, which can travel to the brain, causing a stroke. This measure reflects the percentage of patients, diagnosed with stroke who had underlying AFib. Patients with AFib typically are treated with blood thinners to help reduce the likelihood of clots forming inside the heart. Lower percentages are preferable.

	LMH 2023	LMH 2024	LMH 2025	National ⁽²⁾
Ischemic stroke – percentage with AFib	14.29%	20.00%	21.55%	24.24%

Stroke Care – How do we compare? (continued on back)



Check out our Quality Report Cards online at LMHealth.org.

- 7.** In some cases, after the immediate crisis is stabilized and the patient no longer requires hospital care, ongoing care may be required depending on the needs of the patient. Patients may be transferred to post-hospital care settings such as inpatient rehabilitation, skilled nursing facilities, or home health agencies. The LMH goal is for the patient to return to baseline functioning and be discharged directly home from the Hospital.

	LMH 2023	LMH 2024	LMH 2025	National ⁽²⁾
Ischemic stroke – percent discharged home	50.00%	52.80%	50.00%	54.73%

- 8.** Licking Memorial Health Professionals (LMHP) office-based physicians use evidence-based measures in order to provide excellent, quality care to patients. The American Stroke Association and American Heart Association recommend the use of blood-thinning medication in order to reduce the risk of blood clots in patients with coronary artery disease.

	LMHP 2023	LMHP 2024	LMHP 2025	National ⁽³⁾	LMHP Goal
% LMHP coronary artery disease patients seen receiving blood-thinning medication	88%	85%	82.4%	>80%	>85%

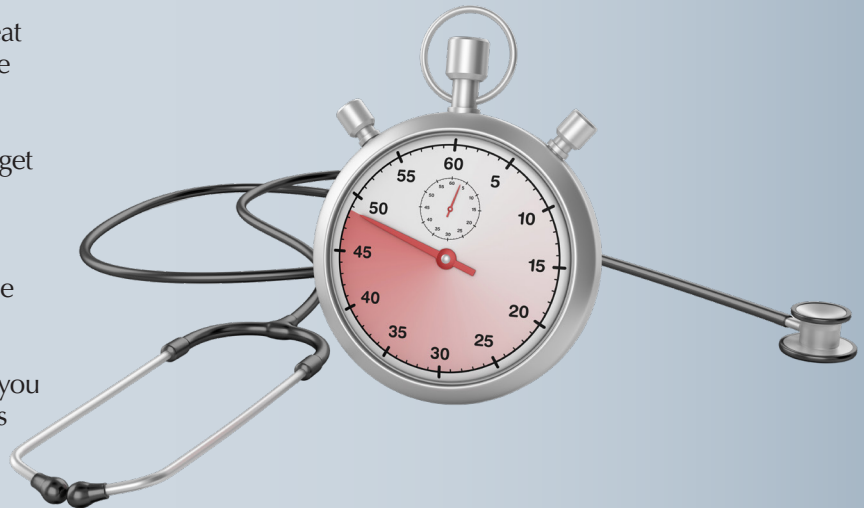
Data Footnotes: (1) Comparative data from www.medicare.gov/care-compare. (2) Comparative data from the Midas Comparative Database. (3) American Heart Association/American Stroke Association/National Committee for Quality Assurance Heart/Stroke Recognition Program.

B.E.F.A.S.T. to Recognize Stroke Symptoms

During a stroke, every minute counts. Recognizing the signs and symptoms of a stroke can save a person's life. Treatment works best if the stroke is recognized and diagnosed within three hours of the first symptoms. The American Stroke Association urges people to learn the warning signs of stroke, and "BE FAST" by calling 911 immediately if any of the following symptoms are present:

- **Balance:** Is the person suddenly having difficulty with balance or coordination?
- **Eyes:** Is there sudden blurred, double, or lost vision?
- **Face drooping:** Does one side of the face droop or is it numb? Ask the person to smile. Is the person's smile uneven?
- **Arm weakness:** Is one arm weak or numb? Ask the person to raise both arms. Does one arm drift downward?
- **Speech difficulty:** Is speech slurred? Are they unable to speak or difficult to understand? Ask the person to repeat a simple sentence like, "The sky is blue." Is the sentence repeated correctly?
- **Time to call 911:** If the person shows any of these symptoms, even if the symptoms go away, call 911 and get them to the hospital immediately.

The key to recognizing stroke is the sudden onset of the symptoms. In addition to the conditions mentioned, someone experiencing a stroke may also suffer numbness in the face, arm, or leg, vision changes, loss of balance or coordination, confusion, trouble walking, or a sudden severe headache. If you or someone you are with have any type of unusual symptoms that occur suddenly, call 911.



Licking Memorial Health Systems

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Visit us at LMHealth.org.

Please take a few minutes to read this month's report on **Stroke Care**. You will soon discover why Licking Memorial Health Systems is measurably different ... for your health!

The Quality Report Card is a publication of the LMHS Public Relations Department. Please contact the Public Relations Department at (220) 564-1572 to receive future mailings.

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