

Licking Memorial Health Systems Quality Report Card

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STROKE CARE

Hardening of the Arteries Can Lead to Stroke

Atherosclerosis, commonly known as hardening of the arteries, is the gradual buildup of plaque inside the arterial walls. Arteries are blood vessels that carry oxygen-rich blood to organs and tissues in the body. Plaque is comprised of cholesterol, fatty substances, cellular waste, calcium, and fibrin. Over time, plaque accumulation narrows the arteries and restricts blood flow which can lead to the formation of blood clots. If the arteries that supply blood to the brain are affected by this process, the risk of stroke is significantly increased.

A stroke occurs when the brain is deprived of oxygen-rich blood. Two types of strokes that are associated with atherosclerosis are ischemic and hemorrhagic. Ischemic strokes, which account for 87 percent of all strokes, typically result from a blockage. Plaque buildup can rupture leading to the formation of a blood clot. If the clot obstructs an artery leading to the brain, blood is prevented from reaching brain tissue, causing cell death in minutes.

Atherosclerosis also contributes to high blood pressure, forcing the heart to work harder to circulate blood through narrowed arteries. Over time, this pressure can weaken the arterial walls causing a vessel to rupture and bleed into the surrounding brain tissue. Hemorrhagic strokes are less common than ischemic strokes but are associated with a higher risk of death and long-term disability.

Recognizing the signs of a stroke early is important. Stroke symptoms occur suddenly and vary from person to person, depending on what part of the brain is being deprived of oxygen. Remembering the acronym B.E.F.A.S.T. can help individuals identify the signs of stroke:

- Balance – loss of balance, severe headache, or dizziness
- Eyes – blurred vision
- Face – one side of the face is drooping
- Arms – arm or leg weakness
- Speech – slurred words or difficulty speaking or understanding speech
- Time – call 9-1-1 immediately

Atherosclerosis is a slow, lifelong progression of changes in the blood vessels that begins forming in childhood and worsens as people age. Symptoms may not appear until a medical emergency occurs, such as a heart attack or stroke. Several risk factors contribute to the development of atherosclerosis, including smoking, hypertension, high cholesterol and triglyceride levels, diabetes, obesity, and unhealthy lifestyle habits. A family history of cardiovascular disease can also play a significant role in atherosclerosis and stroke risk.

Most people can prevent or delay atherosclerosis from developing by making lifestyle modifications such as adhering to a heart-healthy diet, quitting tobacco use, exercising regularly, managing stress, and maintaining healthy blood pressure, cholesterol, and glucose levels. In some cases, medications or surgical interventions

may be necessary such as stent placements or carotid endarterectomy, a procedure that removes plaque buildup from the carotid arteries in the neck. Individuals who think they may have atherosclerosis should consult with their primary care physician or cardiologist.





Patient Story – Ben Reed

Ben Reed is 36 years old and a lifelong Licking County resident. Growing up in Newark, Ben attended Newark High School and studied Computer Networking Technology at C-TEC. He currently works in the Information Technology Department at Kokosing Construction.

Ben awoke one morning in August with a strange feeling in his right eye. He could not identify the problem, but something did not feel right. As he was getting ready to drive to work, Ben began losing vision in his eye. He called his manager to inform him of the situation and that he was going to the eye doctor. Ben did not feel

that he could drive himself, so his wife, Rachel, drove him to the optometrist.

“My wife had to go to work, so she dropped me off at the eye doctor,” Ben explained. “I called my parents to let them know what was happening and ask if they could provide a ride for me after the appointment.”

The optometrist performed a visual field test which revealed dense temporal visual field loss on the right and mild left temporal visual field loss. After consulting with other physicians at Center For Sight, the optometrist determined that Ben was having a stroke and instructed him to go to the Licking Memorial Hospital (LMH) Emergency Department.

Ben’s parents drove him to the ED. When he arrived, he registered and was taken to an exam room. He does not recall what occurred while he was in the ED, as he was very overwhelmed and was trying to process his diagnosis. He remembers that he could not see well, and his mom advocated for him with the nurses and physicians.

A Computed Tomography Angiogram (CTA) head and neck scan was ordered to determine if there was a blockage in Ben’s arteries. A CTA is a medical imaging technique that uses CT scans and contrast dye to visualize the blood vessels in the head and neck. The CTA revealed no evidence of obstruction in Ben’s carotid or vertebral arteries; however, the scan did reveal indications of a previous lacunar infarct in the right cerebellum. A lacunar infarct is a type of stroke that occurs when a small artery deep in the brain is blocked, leading to a small area of brain tissue damage.

Ben was admitted to LMH and underwent a magnetic resonance imaging (MRI) on his brain that showed an area of ischemia in the left occipital region of the brain, which is responsible for processing visual information. He was treated by Noman M. Ahmed, M.D., of Licking Memorial Neurology. Ben was administered a cholesterol medication and an antiplatelet medication, and by the next morning, his vision had almost returned to normal.

Ben was discharged from the Hospital after three days and was instructed to wear a heart monitor for two weeks and follow up with his primary care physician as well as Licking Memorial Neurology. He also could not operate a vehicle for 30 days, but his manager made arrangements for Ben to work remotely, for which he was grateful. For his own peace of mind and to be proactive about his health, Ben also underwent a procedure for an implantable loop recorder, a small, battery-powered device implanted under the skin to continuously monitor the heart’s electrical activity. The device can help identify atrial fibrillation, a common cause of strokes.

Just two months after Ben experienced his stroke, his wife Rachel delivered their first child; a daughter named Sonora. Ben is grateful to the physicians and staff at LMH for helping him through his stroke recovery and is happy to be able to spend time with his wife and daughter.

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 2022	LMH 2023	LMH 2024	LMH Goal
Eligible stroke patients who received timely thrombolytic drugs in the ED	91.7%	96.9%	100%	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 2022	LMH 2023	LMH 2024	LMH Goal
Median time from arrival to administration of tPA	65 Minutes	57 Minutes	59 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 2022	LMH 2023	LMH 2024	National ⁽¹⁾
Stroke patients in the ED with brain scan results within 45 minutes	84%	88%	100%	70%

- 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 2022	LMH 2023	LMH 2024	National ⁽²⁾
Ischemic stroke – inpatient mortality rate	0.79%*	0.00%	0.80%*	2.38%
*In 2022 and 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 2022	LMH 2023	LMH 2024	National ⁽²⁾
Incidence rate	21.43	16.06	20.29	20.14

- 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 2022	LMH 2023	LMH 2024	National ⁽²⁾
Ischemic stroke – percentage with AFib	14.96%	14.29%	20.00%	18.46%

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



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- 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 2022	LMH 2023	LMH 2024	National ⁽²⁾
Ischemic stroke – percent discharged home	58.27%	50.00%	52.80%	55.83%

- 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 2022	LMHP 2023	LMHP 2024	National ⁽³⁾	LMHP Goal
% LMHP coronary artery disease patients seen receiving blood-thinning medication	88%	88%	85%	>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.

Manage Blood Pressure to Prevent Stroke Risk

High blood pressure is the leading modifiable risk factor for stroke. Left uncontrolled, high blood pressure can cause blood vessels to weaken and predispose such to damage, which can lead to blockages and blood clots that can cause a stroke. However, there are many ways to successfully manage high blood pressure.

Eat a healthy diet

Eating a diet rich in whole grains, fruits, vegetables, and low-fat dairy products that are also low in saturated fat and cholesterol can lower high blood pressure considerably. Examples of eating plans that can help control blood pressure are the Dietary Approaches to Stop Hypertension (DASH) diet and the Mediterranean diet.

Increase physical activity

Regular exercise can reduce blood pressure significantly. Aim for at least 30 minutes of moderate physical activity each day. Activities such as walking, running, swimming, cycling, high-intensity interval training, and strength training are great methods to incorporate into an exercise routine.

Stop smoking

The nicotine in cigarettes can raise blood pressure and heart rate, narrow arteries, and make blood more likely to clot, which increases the risk of stroke. Quitting smoking helps lower blood pressure, can lower the risk of heart disease, and improve overall health.

Reduce salt and sodium intake

Avoid foods and beverages that are high in sodium. A general recommendation is to limit sodium intake to 2,300 milligrams (mg) or less per day. However, the American Heart Association recommends 1,500 mg a day of sodium as an upper limit for all adults. Individuals should talk with their physician to determine the appropriate amount of sodium in their diet.

Maintain a healthy weight

Blood pressure often increases as weight increases. Losing even a small amount of weight can help to lower blood pressure. A lifestyle with good nutrition, regular physical activity, stress management, and adequate sleep all help to sustain a healthy weight.



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!

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