



Licking Memorial Health Systems

1320 West Main Street
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Please take a few minutes to read this month's report on **Heart Care**.

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Quality Report Card

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Health Tips – Signs and Symptoms of a Heart Attack

Heart attacks are life-and-death emergencies, and every second counts in receiving treatment. If you, or someone else, has any of the following signs and symptoms of a heart attack, call 911 immediately.

Warning signs and symptoms of a heart attack

- Most heart attacks start slowly, with mild pain or discomfort.
- Most heart attacks involve discomfort in the center of the chest that lasts more than a few minutes or goes away and comes back. It can feel like uncomfortable pressure, squeezing, fullness or pain.
- Discomfort in other areas of the upper body can also indicate a heart attack. Symptoms can include pain or discomfort in one or both arms, the back, neck, jaw or stomach.
- Shortness of breath may occur with or without chest discomfort.
- A cold sweat may develop.
- Other symptoms may include nausea or light-headedness.

Not all these signs occur in every heart attack. If chest discomfort is present (especially with one or more of the other signs) wait no longer than five minutes before calling 911 for help.

Heart Care – How do we compare?

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

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 them to benchmark measures. Then, we publish them so you can draw your own conclusions regarding your healthcare choices.

1 Angiotensin-converting enzyme (ACE) inhibitors reduce the risk for mortality in patients with left ventricular systolic dysfunction (LVSD) after heart attack. LVSD refers to the reduced squeezing ability of the left ventricle that can occur after heart attack. Additionally, the likelihood of the patient having another heart attack can be reduced if an ACE inhibitor is administered.

	LMH 2010	LMH 2011	LMH 2012	National Average ⁽¹⁾
ACE/ARB at discharge for LVSD	100%	100%	100%	100%

2 The first step in heart attack treatment is to confirm that the patient is truly experiencing the symptoms of an attack. An electrocardiogram (EKG) measures the electrical activity of the heart and can determine if a heart attack is occurring.

	LMH 2010	LMH 2011	LMH 2012	National Average ⁽²⁾
Median time from arrival to completion of EKG	4.9 minutes	2.5 minutes	3.0 minutes	7.3 minutes

3 In patients having a heart attack, emergency angioplasty restores blood flow to the heart muscle by re-opening blocked or clogged arteries. This is done by inserting a catheter into the artery that feeds the heart, inflating a balloon and placing a stent inside the artery to keep it open. This procedure can help reduce damage to the heart muscle, and has the best results when performed within 90 minutes after arriving in the Emergency Department. Licking Memorial Hospital (LMH) began performing this procedure in 2008.

	LMH 2010	LMH 2011	LMH 2012	National Average
Mean time from arrival until balloon angioplasty performed	N/A	51 minutes	56 minutes	less than 62 minutes ⁽²⁾
Time to balloon within 90 minutes	N/A	100%	96%	greater than 94% ⁽¹⁾

4 During a heart attack, the heart is severely stressed. Beta blocker medications help decrease this stress by reducing heart rate, blood pressure and the heart's demand for oxygen. Additionally, aspirin has been shown to prevent further blood clotting in heart attack patients.

	LMH 2010	LMH 2011	LMH 2012	National Average ⁽¹⁾
Aspirin within 24 hours of patient arrival	100%	99%	100%	100%
Aspirin ordered at hospital discharge	93%	99%	99%	99%
Beta blocker ordered at hospital discharge	100%	100%	99%	100%

5 Cardiac rehabilitation programs aid people who have experienced heart attacks. LMH's program provides medical oversight and heart monitoring for individuals as they exercise and strengthen their hearts. LMH also measures participants' progress in improving certain indicators of heart health. The following results were reported by cardiac rehabilitation patients.

Health Indicator	LMH 2010	LMH 2011	LMH 2012	Goal ⁽³⁾
Stopped smoking	78%	66%	68%*	greater than 75%
Improved weight	57%	55%	69%*	greater than 75%
Increased exercise time	100%	100%	100%*	100%

*The cardiac rehabilitation goals are customized for each individual patient. LMH offers nutritional counseling, supervised wellness sessions and an incentive program to reinforce the importance of making healthy lifestyle choices, but it is the individual patient's efforts to attain these goals that achieve the highest rates of success.

6 The left ventricle is the chamber of the heart that pumps blood out of the heart and into the body. Measuring left ventricular function (LVF) helps determine how well a chronic heart failure (CHF) patient's left ventricle is working.

	LMH 2010	LMH 2011	LMH 2012	National Average ⁽¹⁾
LVF assessment completed	99%	99%	100%	99%

7 Medications beneficial to many heart failure patients include ACE inhibitors, beta-blockers, and angiotensin-receptor blockers (ARBs). ACE inhibitors and ARBs have been shown to lower mortality and improve functional capacity and quality of life. Beta-blockers can reverse or prevent some of the health effects associated with heart failure. Patients treated with beta-blockers may see significant improvement in heart function after three months.

	LMH 2010	LMH 2011	LMH 2012	National Average
CHF patients on ACE or ARB at discharge	94%	97%	100%	96% ⁽¹⁾
CHF patients on beta-blockers at discharge	94%	96%	100%	90% ⁽³⁾

8 It is vital that heart failure patients be involved in their own care to reduce health complications and improve quality of life. They must monitor their weight, limit their salt intake, and take their medications regularly. Healthcare providers need to give thorough discharge instructions to help these patients effectively manage their condition.

	LMH 2010	LMH 2011	LMH 2012	National Average ⁽¹⁾
All discharge instructions given	93%	92%	98%	93%

9 Licking Memorial Health Professionals (LMHP) physicians also monitor the usage of antiplatelet drugs, such as aspirin or an antithrombotic drug, in patients with coronary artery disease (CAD). The usage of these medications lowers the risk of myocardial infarction (MI) or death in patients with CAD.

	LMHP 2010	LMHP 2011	LMHP 2012	Goal ⁽⁴⁾
LMHP CAD patients with aspirin and/or antithrombotic prescribed	92%	93%	93%	greater than 80%

10 LMHP physicians monitor the cholesterol levels, specifically the LDL (bad cholesterol) levels of their patients with diagnoses of CAD. Elevated LDL cholesterol level is a risk factor for myocardial infarction (MI), but is reversible through medication, diet and exercise.

	LMHP 2010	LMHP 2011	LMHP 2012	National Average ⁽⁵⁾
LMHP CAD patients with LDL less than or equal to 100 mg/dl	58%	64%	66%	greater than 50%

Data Footnotes: (1) *Hospitalcompare.hhs.gov national benchmarks.* (2) *Midas and CPMS Comparative Database, 2011-2012.* (3) *Benchmark indicates LMH Goal.* (4) *Benchmark indicates LMHP Goal.* (5) *National Committee for Quality Assurance, "State of Health Care Quality 2012."*

Patient Story – Josh Pennington

A series of intuitive decisions led Josh Pennington, Pastor of More Life Church in Newark, to the right place at the right time on September 4, 2013. A few minutes' difference in that day's timeline could have been deadly for Josh when he suffered a heart attack at the young age of 35 years.

The day had started out normally for the Pennington family, which includes Josh, his wife, Angie, and their four children: 14-year-old twins Jacob and Julia, 12-year-old Audrianna and 11-year-old Alex. Josh had just taken Alex to school when he noticed an unusual sensation. "It was a slight discomfort in my chest," Josh recalled. "It was nothing major, but it was enough that I mentioned it to Angie."

Josh has a strong family history of heart disease. Each of his grandfathers had suffered heart attacks – one at the age of 47, the other at the age of 51 – and his father survived a heart attack at the age of 55. However, Josh was pretty confident that his heart was in good shape. He was preparing to celebrate his 36th birthday in four days, and he led an active lifestyle.

The chest pain soon subsided. "But then I began to feel a dull pressure in my left arm," Josh remembered. "I knew that pain



Josh and Angie Pennington enjoyed hiking and rock climbing in Joshua Tree National Park in California in November 2013.

in the arm is a warning sign of a heart attack." Even so, he was still unsure whether he was experiencing a serious problem.

Josh called his sister-in-law, a certified nurse practitioner, for advice. Her response was firm. "She said I needed to go to the emergency room right away," Josh said, "but I was still in denial. I decided to take a shower and change clothes. If I still had the pain, I thought I would have Angie drive me to the Hospital."

Reflecting on his reluctance to call 911 for help, Josh admits that he was irrationally trying to avoid possible embarrassment. "In my mind, I thought I could not be having a heart attack because I was only 35. I did not want to be the guy who called the squad for a case of indigestion or gas," he explained.

Josh noticed the discomfort was following a pattern – after a period of chest pressure, his arm would hurt, then all pain would subside for a while. In the shower, his symptoms returned with more intensity, and he asked Angie to call 911.

"I really had intended to have Angie drive me to the Hospital, but at the last minute, I just had a feeling that we should call the

squad. That was a very big decision. The squad was there in seven minutes, and began giving me care immediately. Before they arrived, the mental side of my condition was very distressing. They brought a sense of calm, and I felt as though I could relax.”

The emergency medical technicians (EMTs) transmitted Josh’s vital signs and EKG results directly to the Emergency Department at Licking Memorial Hospital (LMH). His heart rate and blood pressure appeared to be normal, but Emergency Medicine Physician Scott D. Jolly, D.O., instructed the EMTs to give Josh a dose of nitroglycerin in case a heart attack was occurring.

When Josh arrived at LMH, the squad’s transmitted information allowed him to bypass the normal registration and triage processes. Josh remembered, “They brought me straight back to one of the patient examining rooms, and I saw Dr. Jolly right away. I know that arriving by the squad gave me access to more expedient care than I would have had otherwise.”

Josh’s signs and symptoms were not following a typical course for a heart attack. His EKG results were inconclusive, and he had not felt any chest or arm pain since the squad arrived at his home. Despite Josh’s young age and apparent lack of symptoms, Dr. Jolly suspected that some cardiac condition existed. He recommended that Josh be admitted overnight for observation and testing.

While Josh was being set up in the Coronary Care Unit, Hospitalist Khanh V. Dang, M.D., stopped by to introduce himself and explain the tests that would be performed. “I had a heart attack right in front of him, and a STEMI (ST segment elevation myocardial infarction) alert was announced,” Josh said. “The room filled up immediately with at least 15 staff members. The pain was terrible, but I knew that they were going to take care of it.”

Another EKG test was quickly performed, and it verified that a heart attack was occurring. Josh was quickly taken to the cardiac catheterization lab, where Interventional Cardiologist Hassan Rajjoub, M.D., found that Josh’s left anterior descending artery was 99 percent blocked, a condition commonly called “the widow maker.” Dr. Rajjoub implanted a stent in Josh’s artery, and blood flow was successfully restored.

Josh was dismissed from the Hospital on September 6, and has resumed normal activities. He is confident that if he had not already been at LMH when he went into full cardiac arrest, he would not have celebrated his 36th birthday. For the sake of his family, he is thankful that he fought through his fear of embarrassment to call 911. He is appreciative of the prompt, reassuring care that he received from the EMTs, and he is grateful to the skilled, attentive medical team at LMH whose professional training and intuitive attention to detail saved his life.

Call 911 for Speediest Heart Attack Response

The catch phrase of cardiology is “Time equals muscle” – a reminder to medical personnel that thousands of irreplaceable heart muscle cells die every minute that a heart attack goes untreated. For that reason, 911 should be called for emergency assistance when anyone exhibits the signs of a heart attack. (See Health Tips on back page).

“Some individuals with good intentions try to rush a heart attack patient to the hospital in their own vehicle, but they are inadvertently placing the patient’s life at further risk,” Interventional Cardiologist Hassan Rajjoub, M.D., said. “Patients who are treated for heart attacks have better outcomes if they arrived at the hospital by EMS (emergency medical squad) rather than private transportation.”

Licking County EMA/911 reports that the average EMS response time is approximately 7.5 minutes within the county. Emergency medical technicians (EMTs) begin the triage and treatment processes as soon as they reach the patient’s location, and they have resuscitation equipment readily available if the patient’s condition worsens.

En route to Licking Memorial Hospital (LMH), the EMTs transmit the patient’s EKG results and other vital data to the LMH Emergency Department (ED). The EMTs are able to administer oxygen and begin an intravenous line for fluids. If the transmitted



Heart attack patients who arrive at LMH by emergency squad can often be taken directly to a treatment room.

data confirms that a heart attack is in progress, the on-call interventional cardiologist is alerted and the cardiology team prepares for the patient’s arrival.

Within a few minutes after the EMS arrives at LMH, the heart attack patient can receive life-saving treatment in the catheterization lab. “Treatment for patients who arrive by EMS can be expedited because the preliminary diagnosis and registration information have been completed en route,” Dr. Rajjoub said. “Since time is muscle, those saved minutes can make the difference between life and death for a patient, or between

total recovery and severe disability. Furthermore, you should never drive yourself to the hospital except as a last resort if you are the one experiencing the symptoms of a heart attack.”

In addition to the time saved toward triage, diagnosis and registration, heart attack patients benefit from EMS transport for the following reasons:

- EMTs can begin treatment medication immediately.
- EMS vehicles are equipped with life-saving equipment if the patient should lapse into total cardiac arrest, and EMTs can perform CPR as the patient is being transported to the hospital.
- EMS vehicles have the right-of-way in congested traffic.
- EMS personnel are professionally trained to remain calm and drive safely during stressful situations.