

Licking Memorial Health Systems Quality Report Card

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PATIENT SAFETY



Best Practices for Safe Antibiotic Use

Antibiotics are medications that kill and stop the growth of bacteria and are critical tools for preventing and treating infections. Life-threatening conditions, such as sepsis, are treated using these powerful medicines. However, unnecessary antibiotic use or misuse of the drug can cause bacteria to evolve and become resistant, making infections harder to treat which can result in a significant threat to public health. Following best practices for safe antibiotic use preserves the effectiveness of medications in the future.

Although penicillin was discovered in 1928, the widespread use of antibiotics did not begin until the mid-20th century. World War II prompted an urgent need for effective infection treatments, which initiated large-scale production of the antibiotic, making the drug widely available and revolutionizing medicine. Since then, many new antibiotics have been discovered and used in treating bacterial infections.

Antibiotic resistance occurs when bacteria develop the ability to defeat the medications that are designed to kill the germ. Resistant strains of bacteria emerged shortly after the widespread use of antibiotics began and have continued to develop, including multi-drug-resistant organisms that are impervious to “last-resort” antibiotics, which are only used to treat the most severe pathogens.

Infections caused by drug-resistant bacteria are associated with an increase in severe illness and death and contribute to longer hospital stays, increased healthcare costs, and the spread of infections within

healthcare facilities. More than 2.8 million antibiotic-resistant infections occur in the United States each year, and 35,000 people die as a result.

Unnecessary antibiotic use occurs when an individual takes antibiotics that they do not need, such as for colds and the flu. While sinus infections and ear infections are sometimes caused by bacteria, most are caused by viruses, and symptoms improve without the use of antibiotics. Viruses are germs that are different from bacteria; therefore, antibiotics are not effective against viruses. Infections caused by viruses include colds, influenza, and most sore throats and chest colds.

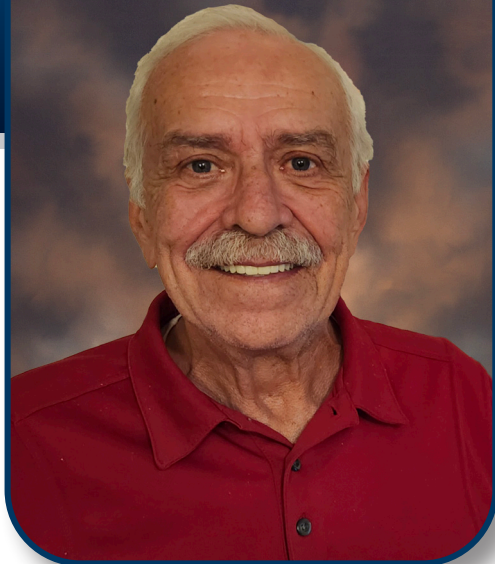
Antibiotics are effective in treating certain infections caused by bacteria, such as strep throat, whooping cough, and urinary tract infections. The misuse of antibiotics occurs when a patient is prescribed the wrong antibiotic, takes an incorrect dosage, or uses the antibiotic for the wrong length of time. It is important for people to take antibiotics only when needed and exactly as prescribed. Individuals can help prevent antibiotic resistance by adhering to the following guidelines:

- Take antibiotics only when prescribed by a healthcare provider.
- Complete the full course of antibiotics, even when feeling better. Stopping early can allow bacteria to remain and become resistant.
- Take the correct dosage and follow the prescribed schedule.
- Do not share antibiotics, and do not take antibiotics that are prescribed to someone else.

The overuse of antibiotics is a contributing factor to the development of other serious complications, such as *Clostridium difficile* infection (*C. diff*). *C. diff* is a bacterium that can cause diarrhea or inflammation of the colon (colitis) and can be life-threatening. The intestines and stomach contain a collection of good and bad bacteria, also known as the microbiome. Some germs can cause illness; however, good bacteria help to protect people from infections. Antibiotics disrupt a person’s microbiome by killing both good and bad bacteria. Without the protection from good bacteria, harmful germs such as *C. diff* can flourish and cause serious illness.

It is also important to practice good health hygiene by washing hands frequently, covering the mouth and nose when coughing or sneezing, staying home when sick, and avoiding contact with people who have colds or other respiratory infections. Receiving recommended vaccines for influenza, pneumonia, respiratory syncytial virus (RSV), and COVID-19 can also prevent the spread of illness.

Antibiotic resistance is an ongoing, evolving problem. The development of new antibiotics is crucial for success; however, responsible antibiotic stewardship remains the best defense. Healthcare providers must adhere to evidence-based prescribing guidelines, and patients need to follow treatment instructions carefully. Promoting awareness and education about antibiotic resistance can also help preserve the effectiveness of existing medications for current and future generations.



Patient Story – Mark Peters

Many of the staff members of the Intensive Care Unit (ICU) at Licking Memorial Hospital (LMH) consider Mark Peters to be the miracle patient. Mark was hospitalized for a total of 29 days after being brought to the Emergency Department (ED) for a suspected ulcer. While undergoing medical testing to diagnose his condition, Mark's heart stopped. The medical team was able to resuscitate him. After surgery and being intubated, Mark recovered and continues to grow stronger every day.

"I believe my wife's quick actions and the staff at LMH saved my life," Mark shared. "I do not remember much of what happened, but I do remember the compassion and kindness of the staff and physicians who worked diligently to discover what was causing my issues and make sure I would recover."

Mark's ordeal began in late July while he was home convalescing from oral surgery. In order to avoid taking the prescribed pain medication, he was using over-the-counter medications, such as ibuprofen, which can cause stomach issues. While his wife, Marci, was at work, Mark began to feel weak and nauseous. He called Marci after becoming seriously ill and said that he needed her immediately. Marci rushed home and discovered evidence that Mark may be bleeding internally. She suspected an ulcer. Marci formally worked in the Surgery Department at LMH. She tried to get Mark to the car to take him to the ED, but he was too weak, and she had to call for an ambulance.

Upon arrival at LMH, Mark was admitted, and the physician ordered an endoscopy procedure to confirm the bleeding was from an ulcer. During the procedure, an ulcer was discovered; however, it was not

currently bleeding, so it was determined that Mark should spend the night to ensure that the ulcer would not start bleeding again. The next morning, Mark was told that he would likely be released, but he was still weak, and results from a follow-up blood test showed his blood count was very low. Blood transfusions were ordered and Mark spent another night at LMH.

The following day, Mark was told again that he would likely be released, so he called Marci to tell her to be ready to take him home. Before she arrived, Mark collapsed and lost consciousness. He was revived and moved to ICU to be closely monitored. Another endoscopy procedure was performed with the same result. The ulcer was not bleeding; however, Mark's condition continued to deteriorate and the staff had difficulty keeping him stable. Finally, he had to be intubated to assist with his breathing.

"I do remember a nurse, Shelby Malcolm, who had to sit with me all night," Mark said. "She was so nice to me. I felt bad that she had to stay there, and I am sure I scared her a number of times as she worked to keep me stable through the night."

Summiyah Nasir, M.D., began to search for other causes of internal bleeding. Mark had aspirated during intubation, so Dr. Nasir ordered an X-ray of his lungs. She was concerned when she discovered air in the abdomen that could be seen on the X-ray. Dr. Nasir then ordered a computed tomography (CT) scan and conferred with Victor F. Ferrini, M.D., of the LMH Surgery Department, and decided that exploratory surgery was required. During the procedure, Dr. Ferrini discovered that Mark's spleen had ruptured and was the root cause of the internal bleeding. He removed the organ immediately.

"Up to that point, none of the testing or symptoms pointed to damage to the spleen," Marci shared. "Had the air in the abdomen not been discovered, Mark may have continued to bleed."

After his surgery, Mark remained in the ICU. After a short time, the nursing staff

noticed the skin on his left hand looked gray, as if there was no circulation. Another CT scan was ordered to try to determine if a blood clot had formed. In the Radiology Department, Mark again lost consciousness. The two nurses who escorted him to Radiology, Torie Miller and McKenzie Brookbank, alerted the Rapid Response team and stayed by Mark's side until he was stabilized again.

"Mark's heart stopped, and they had to escalate the call to a Code Blue. The ED and ICU cardiac team worked on Mark for 15 minutes before they were able to resuscitate him," Marci said. "The staff was amazing. They never gave up on him and they were able to bring him back."

Dr. Nasir continued to care for Mark and determined the circulation issue was due to severe peripheral vascular disease. She feared he would require amputation, and suggested he be sent to a hospital in Columbus to receive further care.

"I could tell that Dr. Nasir was thinking about Mark's case even when she was not on duty," Marci said. "She felt she had taken his care as far as she could, but the Columbus hospital did nothing different from the care LMH was providing. It just took Mark time to decide he was going to get stronger." Miraculously, Mark avoided amputation.

To show appreciation for the dedication and care the staff at LMH provided, Marci has taken Mark to the ICU several times to meet the men and women who worked to save his life and thank them personally. "My faith is strong, and I saw God's hand at work at every step. We were blessed to have such an amazing team care for Mark," Marci shared. "When they see him walking and doing so well, the staff is simply overwhelmed with joy. They all said they did not think he would survive, but he has, and he is getting better every day."

Mark continues to visit his vascular surgeon and has follow-up appointments with Cardiology. He cannot express the amount of gratitude he has in his heart for his care team. In addition to his heart care, Mark participated in rehabilitation to regain strength in his arms and legs.

Patient Safety – 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. The Institute of Medicine published a report in 2000 that highlighted the stunning effects of medication errors. The report set forth a national agenda for reducing errors and improving patient safety by designing a safer health system. Although the medication error rate at Licking Memorial Hospital (LMH) is significantly better than the national benchmark, we make continuous efforts to improve the process. LMH dispensed 1,032,878 doses of medication in 2022.

	LMH 2021	LMH 2022	LMH 2023	National ⁽¹⁾
Medication error rate per 1,000 doses	0.01%	0.01%	0.01%	0.31%

2. Protecting patients from hospital-acquired infections is a primary patient safety goal. LMH has an ongoing program to prevent and treat infections in patients. Per the Centers for Disease Control and Prevention (CDC) recommendations, LMH tracks high-risk patients, including those with an increased risk of infection due to the presence of an invasive device, such as a ventilator, catheter, or central venous line. The following data reflects the number of infections per every 1,000 patient days compared to the national benchmarks.

	LMH 2021	LMH 2022	LMH 2023	National ⁽²⁾
Central line-associated bloodstream infections (ICU and select wards)	0.000	1.221	1.085	0.717
Catheter-associated urinary tract infections (ICU and select wards)	0.000	0.228	0.265	0.583
Surgical site infections – colon surgery	0.000	0.000	0.000	0.899
Surgical site infections – abdominal hysterectomy	0.000	N/A*	N/A*	1.047
Methicillin-resistant staphylococcus aureus (MRSA) bacteremia	1.126	0.814	2.521**	0.752
Clostridium difficile (C. Diff)	0.537	1.449	0.849	0.416
*Not statistically significant – 1 case reported in 2023.				
**3 total cases.				

3. LMH conducts a comprehensive assessment to determine if a patient is at risk for a fall at admission and during the Hospital stay. Personal alarms and bed sensors help alert staff to prevent a potential fall.

	LMH 2021	LMH 2022	LMH 2023	Goal
Inpatient falls, per 1,000 patient days	3.6	4.2	3.2	less than 3.0

4. Acute care mortality refers to patients who pass away while admitted as inpatients in the hospital. While mortality within the hospital is not uncommon, it can be a valuable indicator in determining how effectively the hospital manages crisis situations as well as its ability to rescue the patient in an emergency. Other factors, such as nurse staffing levels, staff knowledge and experience, and early recognition of patient deterioration all can have an impact on inpatient mortality. Sepsis is a body's overwhelming and life-threatening response to an initial infection of microbes that can be bacterial, viral, or fungal. It can be difficult to diagnose. LMHS has safety measures in place to detect early signs of sepsis. Lower rates are preferable.

	LMH 2021	LMH 2022	LMH 2023	National ⁽³⁾
Inpatient mortality	2.18%*	2.14%*	1.76%*	2.22%
Sepsis mortality rate	10.9%*	10.9%*	8.79%*	State ⁽⁴⁾ 14.9%
*Deaths definitively or potentially related to COVID-19 have been excluded.				

5. During the annual influenza (flu) season, keeping the LMHS employees healthy by providing flu vaccinations can, in turn, protect patients from potential influenza infections. LMHS is committed to encouraging and providing free, easily accessible flu vaccines to all employees.

	LMHS 2021	LMHS 2022	LMHS 2023	LMHS Goal	National ⁽⁵⁾
LMHS employees receiving the seasonal influenza vaccine	85%	82%	83%	greater than 80%	81%

- 6.** Warfarin (also known as Coumadin) is a blood thinner, which also is called an anticoagulant. It is used to help prevent and treat blood clots. The most common side effect of warfarin is bleeding in any tissue or organ. It is important for patients to have a prothrombin time (PT) and International Normalized Ratio (INR) blood test regularly to help the physician determine the blood clotting rate and whether the dosage of warfarin should change. The testing is very important and must be accomplished at recommended intervals in order to keep the PT/INR result in the best and safest range for the medical condition. Licking Memorial Health Professionals (LMHP) has adopted this recommendation as a safety measure.

	LMHP 2021	LMHP 2022	LMHP 2023	LMHP Goal
LMHP patients on warfarin having a current PT/INR within recommended guidelines	97%	98%	98%	greater than 90%

- 7.** Metformin (trade name Glucophage) is a medication that is used in the treatment of diabetes mellitus and polycystic ovarian disease. It is an effective medication for treatment of both of these unrelated disease processes, but must be used cautiously in patients with compromised renal (kidney) function. It is recommended to monitor renal function prior to initiation of therapy and at least annually thereafter. LMHP has adopted this recommendation as a safety measure.

	LMHP 2021	LMHP 2022	LMHP 2023	LMHP Goal
LMHP patients on Metformin with a renal function test within last year	92%	89%	88%	greater than 90%

Data Footnotes: (1) *To Err Is Human – Building a Safer Health System*, National Academy Press, Washington D.C., 2000. (2) *National performance from Hospital Compare Preview Report, Q1 2023 – Q4 2023*. (3) *Comparative Data from the Midas Comparative Database*. (4) *OHA* (5) *Centers for Disease Control and Prevention (CDC)*. *Influenza and Up-to-Date COVID-19 Vaccination Coverage Among Health Care Personnel – National Healthcare Safety Network, United States, 2022-23 Influenza Season*.

Tips to be a Safe Patient

- Bring a list of all current medications being taken, including the names, dosage amounts, and dosage intervals. Also be sure to include any over-the-counter drugs, vitamins or supplements taken.
- While in the hospital, do not take any home medications without checking first with the nurse or physician.
- If possible, have a family member or friend present to act as an advocate when speaking with the physician. This person may be helpful in answering the physician's questions and remembering details of the conversation.
- Prevent falls by asking for assistance before arising from bed if feeling lightheaded or weak. Also keep bedrails in the upright position while in bed.
- Wash hands frequently to prevent the spread of germs and ask visitors to wash their hands when they enter the room. Patients should speak up if any caregivers forget to wash their hands before making physical contact.
- Stop smoking before any hospital admission, especially if having surgery. Smoking increases the risk of infection and slows the body's ability to heal.
- Adjust position in bed at least every two hours to prevent the development of pressure ulcers.
- Complete all Advance Directive forms to ensure that medical preferences will be followed in the event that the patient is unable to speak for themselves. Individuals should proactively discuss their wishes with their healthcare provider and loved ones, preferably before any serious health issues arise. Assistance in completing Advance Directive forms is available by contacting a hospital's Case Management Department.
- Adhere to food and beverage restrictions. It is especially important that patients follow instructions to avoid all food and drink before surgery to reduce the possibility of dangerous complications.
- Keep up to date on all recommended vaccinations.
- Visitors who are immunocompromised and those who have an illness or a cough should wear a mask while in a hospital to protect themselves, the patients, and staff.



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Please take a few minutes to read this month's report on **Patient Safety**. You will soon discover why Licking Memorial Hospital 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) 564-1561 to receive future mailings.

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