

Pulmonology & Lung Surgery

The exemplary team of physicians, caregivers and researchers at Baylor St. Luke's Medical Center continues to push the boundaries of what is possible in patient care through meaningful medical advancements and notable clinical achievements. This document highlights just a few of the stories that reflect our commitment to advanced services, innovative technology and forward-thinking care. Together, these accomplishments demonstrate how we remain at the forefront of medicine—bringing leading-edge solutions, improved outcomes and exceptional care to the patients and communities we serve.

Baylor St. Luke's lung transplant program leads the nation in life-saving care for patients with complex end-stage lung disease.

The Lung Transplant Program at Baylor St. Luke's Medical Center is one of the most active in the country, with a record 108 lung transplants performed last year alone.

Over the past several years, Baylor St. Luke's thoracic and transplant surgeons have given more and more patients with end-stage lung disease a second chance at living full, active lives after receiving successful double-lung transplantations.

While every patient's situation is unique, many come to Baylor St. Luke's after living with lifelong lung problems caused by genetic disorders like Cystic Fibrosis and Primary Ciliary Dyskinesia (PCD), a rare condition where non-functioning cilia in the respiratory tract are unable to clear mucus and debris from airways, leading to recurrent infections and eventual lung damage.



Such was the case with two recent patients who received life-saving double-lung transplants at Baylor St. Luke's. The patients—a married couple in their early 50s—were each managing end-stage lung disease from these genetic disorders. In fact, the husband had undergone a double lung transplant decades earlier, and his lungs were rapidly declining. He knew he would need a second transplant to live. The wife's lungs were also failing after a lifetime of managing her PCD.

The complexity of their cases brought them to Baylor St. Luke's Medical Center, where each received double-transplants, two years apart from each other. The couple found it incredibly helpful to receive their lifesaving care at the same hospital, with many of the same medical staff.

Today, the couple are living healthy, active lives together at home in New Orleans.

Read about their remarkable story and the Baylor St. Luke's surgical team who provided their life-saving care

Baylor St. Luke's Medical Center surgeons make history performing first robotic-assisted double lung transplant in Texas—and one of the first in US.

Lung transplantation has come a long way since the first procedure was accomplished in 1963. Once just the stuff of science fiction has over the decades become a lifesaving treatment for patients with end-stage lung disease.

Now, a team of surgeons at Baylor St. Luke's Medical Hospital has made another historic breakthrough in lung transplantation when they performed the first robotic-assisted double lung transplant in Texas. The surgery, which was done in March 2025, was also one of the first in the nation.

Baylor St. Luke's thoracic and transplant surgeons used a state-of-the-art robotic system to remove and replace the failing lungs of the patient, who had advanced COPD. More than 250 million people worldwide suffer from COPD, a lung disease that slowly robs people of breath, energy and independence. For those with severe disease, when medications and oxygen no longer work, a lung transplant may be the only option.

Robotic surgery is making that option more accessible, more tolerable and more effective. While the use of robotics has been successfully used for years in urology, gynecology and general surgery, its use for lung transplants is still in its infancy. In fact, the first case in the U.S. took place in the Fall of 2024.

Traditional lung transplants are a tough surgery on patients, and typically involve large incisions, spread ribs and long, painful recoveries. But robotic surgery allows surgeons to operate through tiny incisions made between the ribs with unmatched precision and control. The system translates the surgeon's hand movements into micro-movements of robotic instruments, guided by a high-definition 3D camera. This level of accuracy is particularly valuable in lung transplants, where space is limited and the stakes are high.

Baylor St. Luke's surgeons were able to perform the double-lung transplantation on the patient with advanced COPD by making small incisions between the ribs, avoiding the need to split the chest. Following this history-making surgery, the patient was discharged just five days after surgery—the fastest lung transplant recovery ever at Baylor St. Luke's.

The Lung Transplant Program at Baylor St. Luke's already is one of the most active in the country, with a record 108 lung transplants performed last year alone. With robotic-assisted surgery now added to its toolkit, the surgical team is poised to help even more patients, especially those who might not tolerate traditional open surgery.

[Read more about this history-making surgery](#)



Baylor St. Luke's Medical Center researchers at The Texas Heart Institute are redefining organ preservation.

Lung transplantation is one of modern medicine's most complex and time-sensitive procedures. Unlike other organs, lungs are especially fragile, and less than 25% of donated lungs are ever deemed healthy enough to be transplanted. Meanwhile, more than 13% of patients on the lung transplant waiting list will pass away before receiving a match. Sadly, every day, lives are lost not because lungs aren't donated—but because donated lungs don't arrive in time, or arrive in poor condition for transplant.

But researchers at Baylor St. Luke's Medical Center are finding ways to keep donated lungs healthier, longer—and even improve them before they ever reach the operating room.

A multidisciplinary team at Baylor St. Luke's Texas Heart Institute has developed a groundbreaking new system that could transform the way lungs are preserved and transported for transplant.

The technology at the center of this innovation is called ex vivo lung perfusion (EVLP), a method that keeps donor lungs functioning outside the body by circulating fluids and gases through them, simulating real-life conditions.

The new system takes EVLP a step further. Unlike

traditional methods that offer limited support and transport time, this platform uses enhanced circulation, ventilation, and incubation features to mimic the human body more accurately. That means better preservation, more time to transport the organ safely across greater distances, and even the possibility to treat and improve lungs while they are en route.

The new EVLP system also offers more opportunities to match lungs with recipients regardless of location; and opens the door to recondition marginal organs, which today are routinely discarded.

This next-generation EVLP system is currently in preclinical testing, and early commercialization efforts are already underway. If successful, it could help reduce one of the biggest limitations in lung transplantation: geography.

Technologies like this are part of a larger movement to modernize organ preservation and transplantation, potentially benefiting liver, heart, and kidney transplants in the future.

[*Read more about the groundbreaking new system for organ preservation*](#)

Baylor St. Luke's Medical Center a leader in ECMO Life Support for lung and cardiac patients.

Baylor St. Luke's Medical Center has consistently increased the number of patients supported with ECMO (ExtraCorporeal Membrane Oxygenation). This form of lung support is available to patients when a traditional ventilator may not be enough.

The ECMO Program, under the leadership of Dr. Subhasis Chatterjee, Director of Thoracic Surgical ICU & ECMO Program at Baylor St. Luke's Medical Center, brings together a multidisciplinary team of more than 30 physicians—including cardiothoracic surgeons, interventional cardiologists and intensivists—who work in close collaboration with nurses, perfusionists, physical therapists and advanced practice providers to optimize outcomes for patients requiring extracorporeal life support.

The thoracic and transplant surgical team at Baylor St. Luke's employ ECMO as a bridge to recovery or to definitive therapies such as organ transplantation or durable mechanical circulatory support. During 2025, more than 200 patients were supported with this technology. That number is projected to increase even more for 2026.

The Baylor St. Luke's team is actively engaged in clinical trials, regularly publishes in peer-reviewed journals, and shares its expertise at national and international conferences. They are also committed to training the next generation of physicians in advanced ECMO management.

[*Read one patient's life-saving, long-term ECMO support after severe COVID*](#)