

SYNERGY

2017 TRANSPLANT MEDICINE REPORT

LUNG

The lung transplant process is composed of multiple phases, each of which is part of a synergetic program of care focused on a single, overall goal: the delivery of exceptional outcomes to patients, their families, and referring physicians.

Lung Transplant Program remains No. 1 in Texas, among top 10 in nation

In 2017, the UT Southwestern Lung Transplant Program once again set a “personal best” record by transplanting 79 lungs – the most in a single year since the program began in 1990.

Like last year’s annual total, that number represented the highest volume of any transplant center in Texas and one of the highest in the nation.

More importantly to program directors and their large teams of subspecialists are the lives saved that those transplanted lungs represent – one-year survival rates exceeded the national average.

It takes a village of subspecialists

There are solid reasons for the Lung Transplant Program’s overwhelming success. According to Medical Director Fernando Torres, M.D., it’s due, at least in part, to having the necessary resources in place.

“We have the expertise, the facilities, and the technology to get patients through their illnesses,” he says. “We’re part of a real multidisciplinary, multi-department health program that has the synergy of the whole institution aimed at helping these patients.”

Part of that synergy is the program’s extremely close collaboration with UTSW’s Interstitial Lung Disease Program – one of only two Pulmonary Fibrosis Foundation Care Center Network sites in North Texas – as well as UTSW’s Pulmonary Hypertension Program and the Adult Cystic Fibrosis Program, all of which are part of a wide-ranging program of care in advanced lung disease at UT Southwestern.

“Each of these subspecialty programs has the national reputation and expertise to help patients,” Dr. Torres says. “Sometimes, the help patients need is adjustment of their medications or newer medications they’ve perhaps not been exposed to, or to enlist in a clinical trial and try a medication that’s not otherwise available in the community.

“Lung transplantation is the safety net for these patients when all else fails,” he adds, “and when transplantation is called for, our program offers a large, experienced team trained specifically in lung transplant care. All of that together makes a difference – makes *the* difference – and enables us to offer the highest level of care throughout all types of lung disease.”

Shorter wait times, better outcomes

Surgical Director Michael Wait, M.D., notes that the program’s shorter-than-average wait times and groundbreaking inroads to expanding both the donor pool and recipient pool have also directly attributed to the Lung Transplant Program’s continued growth.



Fernando Torres, M.D.
Medical Director

Less than two years ago, UT Southwestern surgeons performed the first lung transplant in Texas using donated lungs treated with ex-vivo lung perfusion (EVLP) technology. EVLP allows physicians to evaluate and recondition lungs, making lungs that would have been unsuitable for transplantation potentially viable – and significantly expanding the number of donor lungs available for transplantation.

“Every year, hundreds of people die while awaiting a lung transplant, and we’re doing all we can to

change that fact,” Dr. Wait says. “Our EVLP program is helping to make that change, and so is our ECMO (extracorporeal membrane oxygenation) program.”

A compact and portable life-support system, an ECMO machine can quickly be connected in emergency situations to replace or assist a patient’s circulation and respiration, giving patients and physicians alike valuable time. Dr. Wait participated in UT Southwestern’s first use of this technology during a lung transplant.

“With ECMO, we are now able to keep patients alive while waiting for that organ, and often the importance of that really cannot be overstated,” Dr. Wait says. “Meanwhile, our patients’ average waitlist time is 90 days, which is half the time of others, and that is significant, too.

“It’s all about having everything in place and the clinical experience to back it up,” he adds. “And because we have that, we’re able to accept the referrals of patients who are turned down by other transplant centers because the patient’s case is too complex – whether because of age or different comorbidities.”



Michael Wait, M.D.
Surgical Director

Dr. Torres notes that even though the UTSW program’s patients tend to be sicker than at other places, the program’s survival rates continue to improve.

“It’s the reason we’re the referral center for other transplant centers in North Texas,” he says.

CASE STUDY

Although medical teams running lung transplant programs across the country are highly skilled and specialized in managing post-transplant care, they often need to rely on other specialists to co-manage complex patients with advanced lung diseases in the pre-transplant period as they await availability of suitable organs. In this regard, the availability of specialized clinics and medical professionals under one roof can mean the difference between patients successfully making it to transplant versus dying on the waitlist. A significant strength of the Lung Transplant Program at UT Southwestern is the availability of all pertinent subspecialties under the umbrella of the Division of Pulmonary and Critical Care Medicine, where pre-transplant patients with advanced lung diseases are managed collaboratively.

The presentation and course of one such patient who was referred to the lung transplant clinic in January 2014 is a case in point. The patient had a rapidly progressive form of interstitial lung disease that was causing him marked functional limitations. Lung functions had declined >50% in the last six months with remaining vital capacity (FVC) of only 28% of predicted, and he needed 15 L of oxygen during the walk. He had been placed on high doses of daily prednisone (60 mg), which were causing several undesirable side effects, including weight gain. He was clearly in need of transplant evaluation, but there was concern that he might not be able to survive long enough on the waitlist.

The patient was immediately started on the workup for transplant and also referred to the interstitial lung disease (ILD) clinic for an urgent evaluation. In the ILD clinic, he was started on aggressive medical therapy in the hopes of stabilizing his lung disease. Over the next six months, not only did he have stable lung functions and oxygen requirements, he was successfully weaned down on prednisone to 10 mg a day. During follow-ups in the transplant clinic, his 6-minute walk distance improved from 86 m at presentation to 335 m with stable oxygen requirements. He eventually underwent successful lung transplantation in January 2016 with an uneventful post-transplant course that appeared highly improbable when he had initially presented to UT Southwestern.



“I took my trumpets, put them in their cases, and put them in a closet because I no longer had the lung capacity to play. My transplant allowed me to use someone else’s lungs to accomplish my dream of performing the national anthem at a professional sporting event.”

— Tim Ervin
Lung Transplant Patient

Lung Transplant Volume	2008	21
	2009	13
	2010	25
	2011	50
	2012	65
	2013	66
	2014	62
	2015	63
	2016	77
2017	79	

RESEARCH SPOTLIGHT

The Lung Transplant Program at UT Southwestern has a robust and active outcomes research program. We are evaluating novel clinical variables that may be associated with survival after lung transplantation. One such project evaluated the prognostic significance of the length of hospital stay after lung transplantation surgery.

This study analyzed the data on more than 14,000 patients who underwent lung transplantation surgery across the United States between 2006 and 2014. We found that survival rates at one, three, and five years after transplant were lower if patients needed to stay in the hospital longer after their surgery. We determined that the best cutoff for defining “prolonged length of stay” was 25 days, which occurred in more than a quarter of all patients across the U.S. during this period. Data showed a marked reduction in survival over a five-year period among patients who had a prolonged length of stay after their transplant surgery versus those who didn’t (46.4% vs. 64.2%).

We also sought to determine ways to identify patients before their surgery who were at risk of spending longer time in the hospital. We found that, among other things, the level of albumin in the blood (which can be affected by the nutritional status of the individual) and the physical conditioning of patients were strongly linked to the length of hospital stay. These findings have been published in the *The Journal of Heart and Lung Transplantation* ([jhlonline.org/article/S1053-2498\(16\)30281-9/pdf](http://jhlonline.org/article/S1053-2498(16)30281-9/pdf)).

The findings from this project have formed the basis of developing a customized approach toward managing patients at UT Southwestern. Not only are we closely tracking the length of stay of all our transplant patients after surgery (the median length of stay at UT Southwestern is 15 days), we make efforts to improve the nutritional status and physical conditioning of transplant candidates before surgery in an attempt to reduce the hospital length of stay and improve survival.

UTSW Transplants by the Numbers

185



Heart transplants in the past five years (16th nationally in volume)

346



Lung transplants in the past five years (9th nationally in volume)

36%



Percentage of kidney transplants in 2017 with living donors (highest in North Texas)

13.5%



Liver program compounded adjusted growth rate over the past 10 years (among the top 10 nationally)

To refer a patient to UT Southwestern for transplant, call **877-391-1528** (Heart, Lung) or

877-392-1528 (Kidney, Liver).

Answered 24/7 by a registered nurse.

Solid Organ Transplant Program

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UT Southwestern
Medical Center™