

New thoracic oncologist spearheads development of lung cancer program

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Since joining Tulane's faculty this summer, Mark Sides, MD, PhD, has started developing a Thoracic Oncology Program. As a medical oncologist, Sides concentrates on lung cancer, and prior to his arrival, Tulane lung cancer patients were treated by one of the general medical oncologists. (Photo via Tulane Cancer Center)

[Mark Sides, MD, PhD](#), joined Tulane's faculty in July and is building a comprehensive Thoracic Oncology Program that offers the full spectrum of multidisciplinary care for lung cancer patients, from early detection to innovative research to genetic testing

and targeted therapies.

"Caring for cancer patients is a team sport," said Sides. "This is especially true with lung cancer. And here at Tulane, we've assembled an extremely strong and focused thoracic oncology team. From radiology to interventional pulmonology to radiation oncology, we have highly skilled and excellently trained people in place, all within the Tulane network."

As a medical oncologist who concentrates on lung cancer, Sides is a unique and pivotal member of this team. Prior to his arrival -- a homecoming, as Sides completed his PhD, postdoctoral training and received his MD at Tulane -- Tulane lung cancer patients were treated by one of the general medical oncologists.

"They offered excellent care; they just weren't exclusively focused on lung cancer," said Sides. "The benefit of our new program is that I am dedicated only to thoracic oncology patients. And because I'm an academic physician, I have a limited patient panel. I see fewer patients and so I spend more time with them, and they have better access to me than a clinical practice physician in the community who might see four or five times as many patients a week. Hopefully that translates into more personalized, focused and higher-quality care."

As an academic cancer center, Tulane offers other benefits as well, according to Sides. "Typically, academic centers are considered 'first choice, last resort' options for patients. First choice because you get the benefit of cutting-edge care from professionals on the front lines in terms of research and treatment. Patients come here because we are Tulane. We have ongoing research and access to knowledge and treatment options other community practices may not be aware of yet. Last resort because let's say a patient who has been treated by a community oncologist has progression of their disease. Now they need to come to Tulane because we offer access to clinical trials or the latest in targeted or immunotherapies -- options often not offered elsewhere."

According to the American Cancer Society, lung cancer (both small cell and non-small cell) is the second most common cancer in both men and women and is by far the leading cause of cancer death, accounting for almost 25% of all cancer deaths. Each year, more people die of lung cancer than of colon, breast, and prostate cancers combined.

Lung cancer incidence and mortality continue to decrease, partly because more people have given up smoking, but also because of advances in early detection and treatment.

[Low-dose CT lung cancer screenings](#) -- now offered at Tulane Lakeside -- can help detect lung cancers at their earliest stages, when they are most treatable.

"The earlier you find the cancer, the better the prognosis," said Sides. "This screening can save your life. Five-year survival rates go down dramatically with each stage of the disease. If we can catch stage 1 -- when lung cancer is typically asymptomatic -- then it's a surgical issue. The surgeon goes in, removes the tumor and the patient is cured."

Patients at high risk for lung cancer who may benefit from CT screening are between the ages of 55 and 74, are current smokers or quit within the last 15 years, or have a 30-pack-year history of smoking.

Radiation exposure from low-dose CT is slightly more than an X-ray but less than 10% of the radiation from a standard CT scan. "Anything actionable will be picked up with much less radiation," said Sides. "If a detected lesion is below a certain size, we simply watch it, do serial screenings, and if it doesn't change, it doesn't change. It's very unlikely it's cancer."

But if it is, it's the location more than the size of the mass that matters, according to Sides. "You can have a lot of cancer in an area that doesn't cause a problem or a little bit of cancer in an area that causes a big problem and it will get picked up easily with low-dose CT, before it has a chance to move out of the lung."

As a physician scientist, Sides is also very involved in lung cancer research. One of his major interests is to better understand adverse outcomes from lung cancer immunotherapies. He is currently working with [Tulane's Hayward Genetics Center](#) to identify patients who may be more genetically susceptible to these complications.

"Chemotherapy targets and attacks all rapidly dividing cells, including immune system cells," he said. "Therefore, chemo actually reduces our immune response. Immunotherapies, on the other hand, sensitize our bodies to cancer and ramp up our immune response, allowing it to identify and attack tumor cells. These are great treatments and the vast majority of patients receiving immunotherapies have terrific benefit for several years."

The problem is that when you ramp up the immune system, it can overwork and cause adverse reactions in some patients, and these can be severe. The complication that most concerns Sides is autoimmune pneumonitis. "Less than 5% of immunotherapy patients will experience this complication, but the mortality rate can be as high as 50%," he said.

It starts out as a little shortness of breath and a cough that develops between 12 and 15 weeks after immunotherapy treatment begins, when patients don't think the symptoms are related to their therapy. "We're often unaware it's even happening until the patient ends up in the ER unable to breathe," Sides said.

Because of this, he wants to find biomarkers that will help to identify which patients are more at risk for autoimmune pneumonitis so that physicians can monitor them much more closely. "If we catch it early, steroids can be given to turn down the immune system for a short time until everything resolves and then the patient can resume therapy again."

"If you equate the treatment of cancer as a war on that cancer, then the first and most important step is to know your enemy," Sides said. "That's where targeted therapies come in."

Over the last five months, there have been three drugs approved as targeted therapies for lung cancer - treatments aimed at the specific genetic mutations in an individual's tumor - and these are the most exciting developments on the lung cancer treatment horizon, according to Sides.

Tulane's Thoracic Oncology Program can offer these personalized treatment options. "Of course, genetic testing is essential," Sides said. "I can't give the proper therapy to my patients without it. I've got to use the right tools." Sides equates it as using a power drill rather than a butter knife or a screwdriver to turn a screw.

Once the genetic mutation is identified and the targeted therapy begins, the average patient can remain on maintenance treatment for two to two and a half years before disease progression. "Then we can switch to something else."

"The question I've had more and more from fellow clinicians is 'what do we do after the two years?' I asked one, 'where is the burden of disease?' and he told me 'we can't find it.' This was a stage IV metastatic lung cancer termed incurable and now we have NED - no evidence of disease. This is the type of reaction we're getting with

these new targeted therapies, and as we continue to identify mutations that cause lung cancer, we can come up with additional targeted therapies to address them."