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Christian Hospital has new technology to biopsy lung tumors with less risk

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Suspicion of lung cancer is scary enough, but invasive procedures that have been used in certain biopsies add to that fear and risk to the patient.

For example, traditional sampling of lymph nodes in the middle of the chest required surgeons to make an incision at the top of the breastbone and insert a metal rod underneath to reach target areas. Such surgical procedures typically require hospitalization, general anesthetics and a longer recovery period.

However, new technology allows less invasive outpatient sampling methods with far less risk. Such is the case at Christian Hospital, which has the inReach electromagnetic navigation system and EBUS, or endobronchoscopic ultrasound scope, in which a narrow flexible tube called a bronchoscope is inserted through the mouth and into the airway.

The inReach system, developed by medical device company superDimension Ltd., involves a computer-based program that guides a flexible catheter during bronchoscopy to any area of the lung, including areas previously thought too small or far out to reach.

A CT scan of the chest allows a doctor to create a three-dimensional virtual "road map" of the lungs and then, during bronchoscopy, link those CT images on a computer to the patient's internal anatomy. This provides computerized markers in the airways and allows a doctor to maneuver the flexible inReach catheters through multiple branches of the bronchial tree to reach targeted lesions.

Dr. Doug Zweig, an interventional pulmonologist and member of Christian Hospital's Center for Advanced Pulmonary Medicine, said the computerized

markers are like "cookie crumbs" or "lampposts" that guide physicians to the targeted area.

"It's like GPS in your car," he said. "You know where you're starting and where you want to go. It simply tells you how to get there."

Once the guide catheter reaches a targeted lesion, Zweig said, he locks the catheter in place and removes the navigational probe from inside. He then inserts a wire through the catheter that has a tool to collect tissue samples.

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