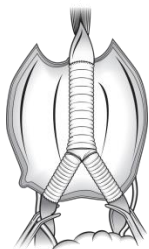


# Endobronchial Ultrasound

## Endobronchial Ultrasound



### Technology In Brief

#### What Is It?

- Endobronchial ultrasound (EBUS) is a noninvasive imaging modality that locally visualizes lesions in the lungs and mediastinal lymph nodes for real-time staging of lung cancer

#### How Does It Work?

- EBUS utilizes an ultrasound transducer affixed to a specially-designed bronchoscope that is inserted into the lungs to locally visualize lesion depth and size for lung cancer detection and staging
- EBUS can also be utilized with trans-bronchial needle aspiration (TBNA) to acquire tissue specimens for testing, or in some cases, deliver targeted neoadjuvant therapy

#### Adoption Status:

- Limited to large oncology programs or institutions with extensive interventional pulmonology programs

#### FDA Status:

- FDA approved

#### Major Vendors:

- Olympus, Pentax

#### Competing Products:

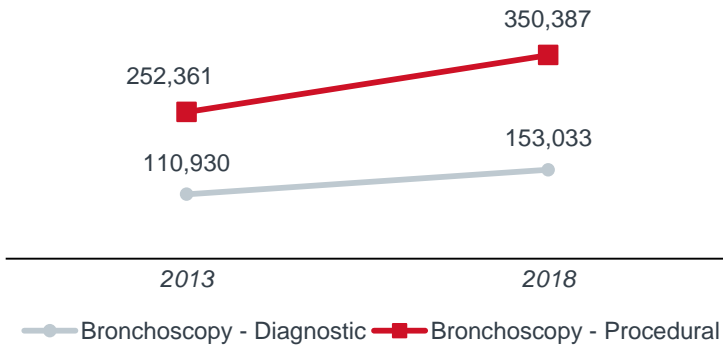
- Computed tomography (CT); electromagnetic navigation bronchoscopy; ultrasound; fluoroscopy

Consideration	Service Line Strategy Advisor's Take
<b>Clinical</b>	<ul style="list-style-type: none"> <li>• Visualization of lung tumors; image guidance of transbronchial needle aspiration (TBNA) biopsy</li> <li>• EBUS is especially useful for the diagnosis of non-small cell lung cancer (NSCLC), which accounts for approximately 80 percent of all lung cancers.</li> </ul>
<b>Reimbursement</b>	<ul style="list-style-type: none"> <li>• EBUS is now considered a packaged service with standard endoscopic ultrasound (EUS, CPT 1620), and does not receive incremental reimbursement</li> <li>• Reimbursement for bronchoscopy w/ needle biopsy increased 114% in 2013</li> </ul>
<b>Cost</b>	<ul style="list-style-type: none"> <li>• \$150,000-\$200,000 for bronchoscope and ultrasonic transducer</li> </ul>
<b>Payer Coverage</b>	<ul style="list-style-type: none"> <li>• Private payers still do not offer additional payment for use of a navigation system, though some payers may begin offering in the next few years with continued clinical evidence and Medicare support</li> </ul>
<b>Market Potential</b>	<ul style="list-style-type: none"> <li>• Despite clinical benefit, little financial incentive to perform EBUS in conjunction with EUS exam of the esophagus</li> </ul>
<b>Operational Needs</b>	<ul style="list-style-type: none"> <li>• Physicians must be highly skilled in both bronchoscopy and ultrasound, a major reason for the limited availability of EUS and EBUS in the United States</li> <li>• Hospitals should anticipate performing a low case-load of EBUS procedures, with increased procedure length times in the first years of adoption as physicians become better acclimated to the technology.</li> </ul>
<b>Impact in Accountable Care</b>	<ul style="list-style-type: none"> <li>• Given emphasis on radiation dose management, EBUS provides a viable alternative to other irradiating image guided biopsy methods</li> <li>• When combined with EUS, EBUS establishes accurate mediastinal staging thus replacing more invasive and costly procedures like mediastinoscopy</li> </ul>
<b>Competitive Take</b>	<ul style="list-style-type: none"> <li>• Community hospitals may find little return for this investment as the extra cost of performing one EBUS procedure over a standard EUS can eclipse \$1,500, without offering incremental reimbursement</li> <li>• AMCs will likely find greater utilization with this technology, though the profitability of such a "nice to have" piece of equipment is still bleak</li> </ul>
<b>Position on the Adoption Curve</b>	<ul style="list-style-type: none"> <li>• Early adopter</li> </ul>

# The Building Block for Interventional Pulmonology Programs

## Market & Financial Overview

### Outpatient National Market Estimates

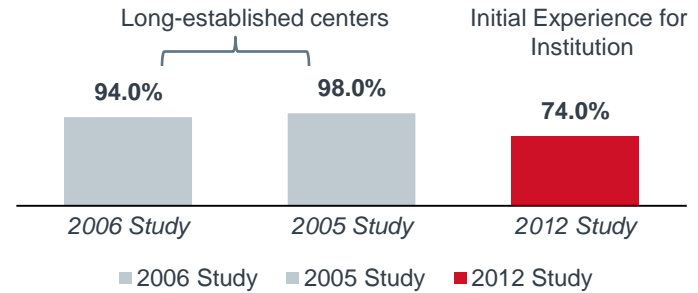


### Reimbursement Rates

CPT Code	Descriptor	2013 Final Rate	2014 Final Rate	Percent Change
31629	Bronchoscopy w/ needle biopsy	\$1,572.20	\$2,000.39	27%
31628	Bronchoscopy, lung biopsy	\$763.88	\$951.62	25%
31620	EBUS add-on	\$0	\$0	0%

## Clinical Considerations

### Diagnostic Accuracy Across Centers Reflects Steep Learning Curve



50 patients diagnosed or suspected of having lung cancer underwent an EBUS-TBNA staging procedure under sedation or general anesthesia. The diagnostic yield was 74% (n = 201 biopsies). The yield was higher when the procedure was performed for diagnostic purposes. Results also show that EBUS-TBNA has a learning curve associated with the method, given the relatively low initial diagnostic yield seen at the inexperienced institution.



### Keys for Investment Success

- Gauge physician support for EBUS versus other imaging modalities for local cancer staging and diagnosis and also assess potential for EBUS referrals given current pulmonary oncology caseload
- Ensure physicians are well-trained in EBUS prior to technology acquisition, given tendency for initial low diagnostic yield and steep learning curve
- It is recommended that physicians have prior experience performing at least 25 procedures before use and at least 2 per month thereafter