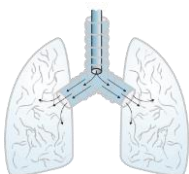


Electromagnetic-guided Bronchoscopy

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Technology In Brief

What Is It?

- Electromagnetic-guided bronchoscopy is a visual guidance method that combines a flexible catheter with image navigation to extend the diagnostic and therapeutic reach of conventional bronchoscopy to peripheral regions of the lungs

How Does It Work?

- Dubbed a “GPS system for the lungs” by early users, electromagnetic-guided bronchoscopy systems guide pulmonologists to suspicious lesions previously accessible only through an open procedure, allowing minimally-invasive diagnostic and therapeutic applications in a larger patient pool

Adoption Status:

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

FDA Status:

- FDA approved

Major Vendors:

- superDimension Systems, Inc and Veran Medical

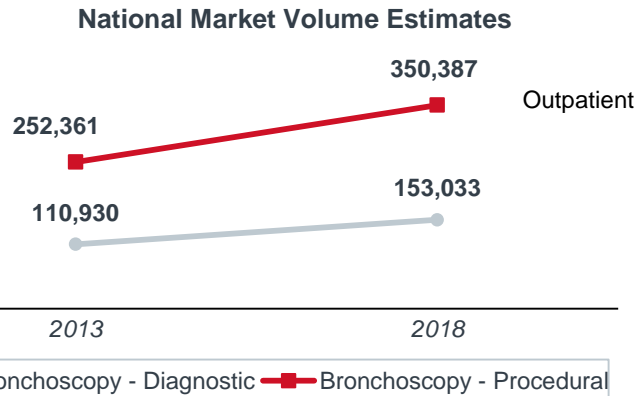
Competing Products:

- Computed tomography; ultrasound; fluoroscopy

Consideration	Service Line Strategy Advisor’s Take
Clinical	<ul style="list-style-type: none"> • Visualization and diagnosis of lung tumors; image guidance of fine needle aspiration biopsy; also used for placement of fiducial markers for stereotactic radiosurgery • Gold standard for fiducial marker placement • Although the technology is not currently approved for use outside the lung, researchers see a potential role in gynecologic and gastrointestinal disease
Reimbursement	<ul style="list-style-type: none"> • New category I CPT code 31627 created for ENB in 2010; still no incremental reimbursement in hospital setting for 2012 • Increase in reimbursement for marker placement (CPT 31626) in 2012
Cost	<ul style="list-style-type: none"> • \$160,000-180,000 for entire bronchoscopy system
Payer Coverage	<ul style="list-style-type: none"> • 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
Market Potential	<ul style="list-style-type: none"> • Given recent clinical results from the National Lung Screening Trial (NLST) and other studies, lung screening and therefore, pulmonary lesion diagnosis is likely to see continued interest and growth
Operational Needs	<ul style="list-style-type: none"> • The development of a financially feasible ENB-based bronchoscopy program is highly contingent upon both the skill and drive of physicians—including thoracic surgeons, pulmonologists, and interventional pulmonologists—as well as the ability to secure a large volume of referrals • Research suggests that ENB is one component of a multi-modality lung cancer screening program, as ENB is a niche technology used for a subset of at-risk patients, specifically those with small lesions in peripheral nodules
Impact in Accountable Care	<ul style="list-style-type: none"> • With an emphasis on prevention and early screening, this technology could play a role in institutions with well-developed lung cancer screening programs and oncology centers
Competitive Take	<ul style="list-style-type: none"> • Community hospitals may find increasing value in EM-guided bronchoscopy systems as a critical component to lung cancer screening programs, though it may not be “need to have” technology • AMCs will likely find greater utilization with this technology as it is the gold standard for fiducial marker placement and downstream radiotherapy or radiosurgical services
Position on the Adoption Curve	<ul style="list-style-type: none"> • Early adopter

Novel Bronchoscopy System Expands Possible Lung Coverage, Range of Uses

Market & Financial Overview



Reimbursement Rates

CPT Code	Descriptor	2013 Final Rate	2014 Final Rate	Percent Change
31625	Bronchoscopy w/ biopsy	\$733.00	\$951.62	+30%
31626	Bronchoscopy w/ Markers	\$2,024	\$2,000.39	(1%)
31627	Navigational Bronchoscopy	\$0	\$0	0%

Clinical Considerations

Thoracic Surgeons' Early Success with ENB

- 67-85%** Range of Diagnostic Yield
- 2-5.2%** Pneumothorax Rate
- 2.8cm** Median Lesion Size

Diagnosing pulmonary lesions with ENB recently demonstrated high yields that may be impacted by the use of Rapid On-Site Cytologic Evaluation (ROSE) and general anesthesia, which preserve body divergence.

Keys for Investment Success

- Consistent use of ENB system is necessary to maintain skills. While minimal physician training is necessary the learning curve is highly variable. Physicians recommend performing at least 25 cases within a 6 month period and 2 each month thereafter to maintain skills
- Consider incorporating this technology as a component of a comprehensive lung program and ensure potential downstream revenues through radiotherapy or other radiosurgical services
- Staff required during procedure include nurse anesthetist, x-ray technician for maneuvering C-arm, and OR nurses