

Video-Assisted Thoracic Surgery (VATS)

VATS



Technology In Brief

What Is It:

- VATS is a minimally-invasive alternative to traditional, open thoracic surgery. Surgeons use VATS to diagnose and treat a variety of conditions in the chest

How Does it Work:

- Similar to laparoscopic surgery, VATS involves three 1-cm incisions in the chest and provides real-time, two-dimensional video imaging of the thorax via rigid thoroscopes that surgeons use to diagnose and treat a range of thoracic conditions

Adoption Status:

- Early adopters

FDA Status:

- Approved

Major Vendors:

- Olympus; Stryker; Ethicon Endosurgical; Karl Storz Endoscopy

Competing Products:

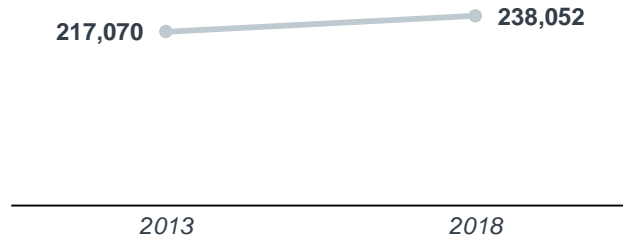
- Open thoracic surgery; da Vinci Surgical System

Consideration	Service Line Strategy Advisor's Take
Clinical	<ul style="list-style-type: none"> • VATS has been shown to reduce complication rates compared to open procedures in a number of studies; however, the clinical literature is still limited and the increasing number of VATS procedures is partially driven by patient demand • More research is needed to drive consensus around role of VATS and to justify expansion of the procedure
Reimbursement	<ul style="list-style-type: none"> • Reimbursement varies; covered under MS-DRGs 163-168 (range: ~\$7,000 to ~\$28,000) for chest and other respiratory procedures
Cost	<ul style="list-style-type: none"> • ~\$100,000 for capital investment
Payer Coverage	<ul style="list-style-type: none"> • No incremental reimbursement available
Market Potential	<ul style="list-style-type: none"> • Strong market potential given increasing demand for minimally invasive surgery alternatives • Over 200,000 new lung cancer patients diagnosed annually
Operational Needs	<ul style="list-style-type: none"> • Requires common laparoscopic equipment and requires no significant technology or infrastructure investments after capital investment
Impact in Accountable Care	<ul style="list-style-type: none"> • The potential for LOS reductions and therefore decreased hospital costs associated with VATS may favor adoption of the procedure despite high capital cost
Competitive Take	<ul style="list-style-type: none"> • With the continually expanding therapeutic applications for VATS and the increasing interest in using VATS as a primary treatment option for lung cancer patients, hospitals seeking to establish robust minimally-invasive treatment programs benefit by including VATS in their treatment portfolio
Position on the Adoption Curve	<ul style="list-style-type: none"> • Early adopters

VATS Increasingly Used as First-line Treatment Option for Lung Cancer

Market & Financial Overview

National VATS Market Estimates Inpatient Thoracic Surgery (MS-DRGs 163-168)

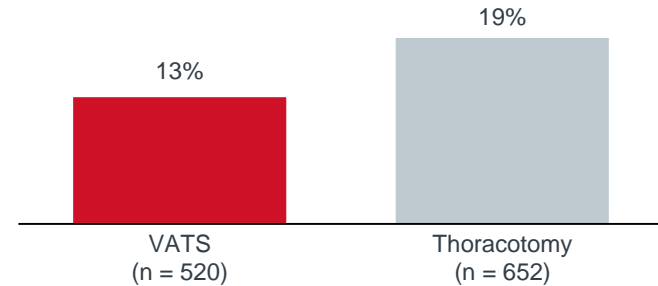


2014 Reimbursement Rates for VATS MS-DRGs

MS-DRG	MS-DRG Description	2014 Payment
163	Major chest procedure w/MCC	\$29,550
164	Major chest procedure w/CC	\$15,129
165	Major chest procedure w/o CC/MCC	\$10,406
166	Other respiratory system OR procedure w/MCC	\$21,308
167	Other respiratory system OR procedure w/CC	\$11,518
168	Other respiratory system OR procedure w/o CC/MCC	\$7,598

Clinical Considerations

Oncologic Recurrence Rates with VATS v. Thoracotomy



VATS is a well recognized minimally invasive procedure among thoracic surgeons, and is a well-established tool for diagnosing diseases in the chest. Interest in VATS is centered around its application as a minimally invasive approach in the management of early stage lung cancer. In the trial featured here, VATS was associated with a lower rate of distant recurrence than thoracotomy for lobectomy in early-stage lung cancer.



Keys for Investment Success

- Assess potential impact of VATS on institution given type and volume of applicable surgical procedures
- Evaluate recent clinical literature to remain abreast of new evaluations, comparisons
- Introduce platform in limited clinical evaluation to assess potential patient benefit and physician preference compared to competing techniques

Sources: Flores RM, Ihekweazu UN, Rizk N, et al., "Patterns of recurrence and incidence of second primary tumors after lobectomy by means of video-assisted thoracoscopic surgery (VATS) versus thoracotomy for lung cancer," *J Thorac Cardiovasc Surg.* 2011;141:59-64.; Service Line Strategy Advisor research and analysis.