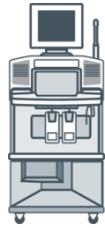


Sonoelastography

Sonoelastography



Technology In Brief

What Is It:

- Commercially available with select ultrasound systems, sonoelastography is a novel imaging technique that assesses the elastic properties of tissues. Sonoelastography yields great promise in the detection and staging of lymph node and prostate tumors, as well as acute and chronic liver diseases.

How Does it Work:

- Sonoelastography measures the vibration – and in turn elasticity and viscosity – of the target tissue. As malignant tissues yield different elastic properties than benign tissues, sonoelastography may more accurately characterize tumor elasticity and severity than other non-invasive imaging modalities.

Adoption Status:

- Progressive

FDA Status:

- Approved in 2008 for diagnostic purposes

Major Vendors:

- Hitachi, Siemens, Toshiba, Philips, GE, Pentax

Competing Products:

- Breast ultrasound, breast MRI, molecular breast imaging (MBI)

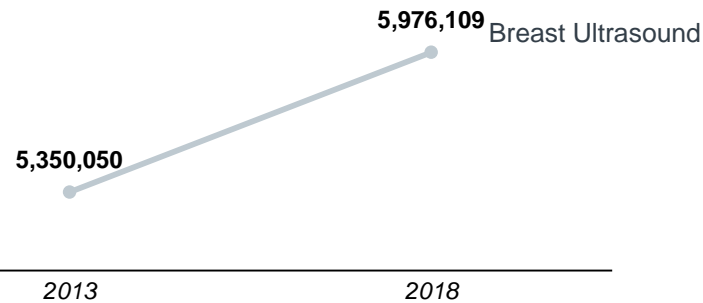
Consideration	Service Line Strategy Advisor's Take
Clinical	<ul style="list-style-type: none"> • Women with breast lesions greater than 10 mm yield best specificity; patients requiring repeat imaging studies for tumor characterization • With sonoelastography now made accessible on an increasing number of ultrasound probes, new applications may develop in the near-term
Reimbursement	<ul style="list-style-type: none"> • Dedicated reimbursement is not currently established, although hospitals adopting sonoelastography may bill using standard breast ultrasound CPT codes (CPT code 76645)
Cost	<ul style="list-style-type: none"> • \$45K-\$70K for small parts probe and software package
Payer Coverage	<ul style="list-style-type: none"> • Not incrementally reimbursed - covered at the same rates as standard breast ultrasound for both Medicare and private payers
Market Potential	<ul style="list-style-type: none"> • Large-scale adoption is not expected in the near future due to the lack of robust clinical studies that confirm the effectiveness of the product
Operational Needs	<ul style="list-style-type: none"> • Same as standard ultrasound units
Impact in Accountable Care	<ul style="list-style-type: none"> • The uncertain clinical development of this technology makes it hard to predict its future adoption, though the quantifiable nature of sonoelastography may make the modality popular for best practices research and clinical quality improvement efforts in the future
Competitive Take	<ul style="list-style-type: none"> • Could possibly be utilized as a market differentiator to show progressiveness of breast center due to first-mover advantage • However, clinician reliance on proven tumor evaluation methods will limit widespread adoption of elastography in the near-term
Position on the Adoption Curve	<ul style="list-style-type: none"> • Progressive

1) Progressive CT = 128-slice, 160-slice, Upgradeable CT

Physicians Remain Cautious on Adoption of New Breast Cancer Detection Metrics

Market & Financial Overview

National Outpatient Estimate



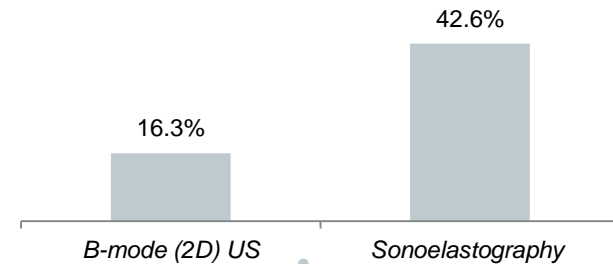
Reimbursement Rates

CPT	2013 Final Rate	2014 Final Rate	Percent Change
76645 – Ultrasound, Both Breasts	\$64.57	\$90.05	39%

Clinical Considerations

Specificity in the Differentiation Between Benign and Malignant Breast Masses

n = 1,786



A small number of studies, such as the one above, are beginning to show the efficacy of sonoelastography in increasing the specificity and sensitivity over standard ultrasound alone. Elastographic image quality has improved over the last few years; this, along with the resolution within the interior of hard lesions, may ultimately help to avoid many benign lesion biopsies and reduce the cost and discomfort of diagnosing breast cancer.



Keys for Investment Success

- Stay informed of clinical and operational developments in sonoelastography, especially multi-center clinical trials
- Assess physician interest and adoption of sonoelastography applications in breast and other regions
- Conduct financial analysis to ensure feasibility of sonoelastography investment
- Assess potential population slated to benefit from sonoelastography in lieu of biopsy

1) Note that this projected market growth is for standard breast ultrasound, and does not intend to project the market growth of sonoelastography.