

Positron Emission Mammography

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Technology In Brief

What Is It:

- Positron emission mammography (PEM) is a non-invasive means to evaluate the extent of breast cancer for patients with confirmed disease. PEM's primary roles are for pre-surgical planning and the evaluation of therapeutic treatment.

How Does it Work:

- Using the radiotracer FDG, PEM imaging detects regions of increased metabolic activity, a widely accepted indicator of tumor cell proliferation. The Naviscan PEM system may also be used for stereotactic-guided breast biopsies.

Adoption Status:

- Leading breast imaging facilities, centers seeking to differentiate from competition

FDA Status:

- Approved

Major Vendors:

- Naviscan, Inc

Competing Products:

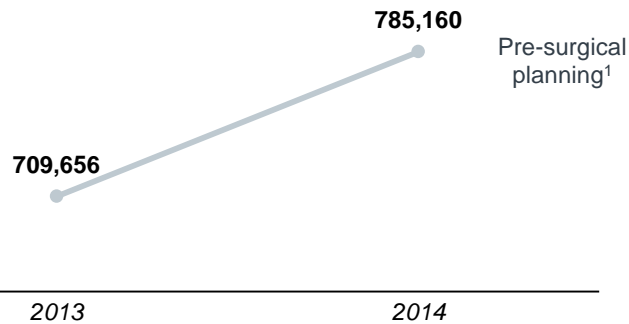
- Breast MRI, molecular breast imaging

Consideration	Service Line Strategy Advisor's Take
Clinical	<ul style="list-style-type: none"> • Recent studies show similar performance of PEM and breast MRI for pre-surgical planning with some cancers detected on only one technology
Reimbursement	<ul style="list-style-type: none"> • PEM is currently paid using the same codes as other PET imaging • There are not breast-specific reimbursement codes
Cost	<ul style="list-style-type: none"> • PEM systems cost \$500K to \$750K depending on need for biopsy equipment • Each scan costs an additional \$250 to \$300 for the radioisotope
Payer Coverage	<ul style="list-style-type: none"> • PEM is covered by Medicare and select private payers though others still consider this to be experimental • PEM is only covered in cases where there is a biopsy-proven cancer
Market Potential	<ul style="list-style-type: none"> • PEM provides an alternative to MRI for patients requiring imaging for pre-surgical planning but who are unable or unwilling to receive an MRI
Operational Needs	<ul style="list-style-type: none"> • Patients required to be onsite for a few hours prior to imaging to receive and process the radiotracer • Close work with nuclear medicine specialists suggested to integrate use of molecular imaging
Impact in Accountable Care	<ul style="list-style-type: none"> • Unlikely to be impacted in accountable care setting
Competitive Take	<ul style="list-style-type: none"> • For AMCs: Possibly differentiating technology to provide another option for select patient groups • For community hospitals: Not yet seen as must-have for majority of breast centers due to limited potential patient populations
Position on the Adoption Curve	<ul style="list-style-type: none"> • Progressive

Similar Performance for Planning Opens Possibility to Provide Alternative to MRI

Market & Financial Overview

National Market Estimates

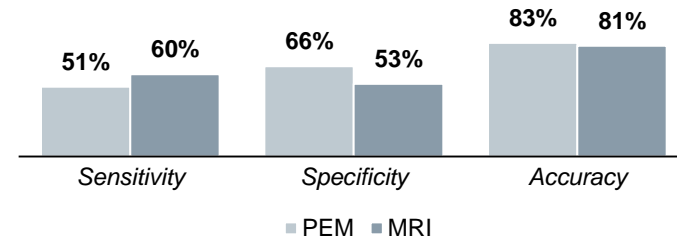


Reimbursement Rates

CPT	Description	2013 Final Rate	2014 Final Rate	Percent Change
78811	PET Imaging	\$1,056	\$1,311	24%

Clinical Considerations

Performance in Pre-Surgical Planning *n=472*



A recent multi-center study compared MRI and PEM for pre-surgical planning in the ipsilateral breast. The study found that lesions were seen with only one, both, or neither modality showing an equivalence in performance. PEM can be used as a viable alternative to breast MRI in pre-surgical planning for women who do not wish to receive a breast MRI exam. In practice, many centers use PEM as an additional exam until surgeons and radiologists feel comfortable using PEM as the sole modality for planning.



Keys for Investment Success

- Proactively working with breast radiologists and surgeons to determine appetite for adding positron emission mammography to pre-surgical planning pathway
- Forming a plan for handling radioisotope dependant on proposed location for system
- Training nuclear medicine and mammography technicians on new technology to ensure proper positioning and interpretation for new technology
- Understand the number of patients refusing a breast MRI exam to see potential volume for PEM

1) Breast MRI