VERMONT

State of Vermont
Department of Vermont Health Access
280 State Drive, NOB 1 South
Waterbury, VT 05671-1010
www.dvha.vermont.gov

Agency of Human Services

[Phone] 802-879-5903
[Fax] 802-879-5963

The Department of Vermont Health Access Medical Policy

Subject: Oncology (breast), mRNA, gene expression profiling
Last Review: June 6, 2016
Revision 3:
Revision 2:
Revision 1:
Original Effective: August 26, 2015

Description of Service or Procedure

Oncology (breast), mRNA, gene expression profiling is a test for detecting genes associated with breast cancer. Laboratory tests have been developed that detect the expression, via messenger RNA (mRNA) or protein, of many different genes in breast tumor tissue.

The results produce a Recurrence Score that help figure out a woman's risk of early-stage, estrogen-receptor-positive breast cancer coming back (recurrence), as well as how likely the patient will benefit from chemotherapy after breast cancer surgery. It also helps determine the likelihood of recurrance for ductal carcinoma in situ (DCIS) and/or the risk of a new invasive cancer developing in the same breast. In addition, what the benefit from radiation therapy after DCIS surgery will be.

Recurrence Score

- **Recurrence Score lower than 18:** The cancer or DCIS has a low risk of recurrence. The benefit of chemotherapy for early-stage breast cancer or radiation therapy for DCIS is likely to be small and will not outweigh the risks of side effects.
- **Recurrence Score between 18 and 31:** The cancer or DCIS has an intermediate risk of recurrence. It's unclear whether the benefits of chemotherapy for early-stage breast cancer or radiation therapy for DCIS outweigh the risks of side effects.
- **Recurrence Score greater than 31:** The cancer or DCIS has a high risk of recurrence, and the benefits of chemotherapy for early-stage breast cancer or radiation therapy for DCIS are likely to be greater than the risks of side effects.
  Breast Cancer.org. Oncotype DX Test, March 5, 2015.

Disclaimer

Coverage is limited to that outlined in Medicaid Rule that pertains to the beneficiary's aid category. Prior Authorization (PA) is only valid if the beneficiary is eligible for the applicable item or service on the date of service.

Medicaid Rule

7102.2 Prior Authorization Determination

7103 Medical Necessity

Medicaid Rules can be found at http://humanservices.vermont.gov/on-line-rules

Coverage Position

Oncology (breast), mRNA, gene expression profiling may be covered for beneficiaries:

- When the Oncology (breast), mRNA, gene expression profiling is prescribed by a licensed medical provider, enrolled in the Vermont Medicaid program, operating within their scope of practice in accordance with Vermont State Practice Act, who is knowledgeable in the use of Oncology (breast), mRNA, gene expression profiling and who provides medical care to the beneficiary AND
- Who meet the clinical guidelines below.

Coverage Criteria

Patients with operable histologically confirmed adenocarcinoma stage I or II of the female breast who have completed primary surgical treatment and meet the following criteria:

- The results of the genetic testing will directly impact surveillance or treatment; and
- The individual has breast cancer that is non-metastatic (node negative) or has a lymph node with a micrometatstatic focus of ≤2mm; and
- The breast tumor is estrogen receptor positive, (ER+) or progesterone receptor positive (PR+), or both; and
- The breast tumor is HER2 receptor negative; and
- The individual is a candidate for adjuvant chemotherapy (i.e., there are no clinical factors that would prevent chemotherapy such as advanced age or a significant comorbidity); and
- The individual has been counseled regarding the use of the test and the results will be used to guide decision making regarding the use of chemotherapy; and
- Breast cancer is unilateral and non-fixed(i.e., tumor not adhered to chest wall); and
- Breast tumor size is 0.6-1 cm with moderate/poor differentiation or unfavorable features (e.g., angiolymphatic invasion, high nuclear grade, or high histologic grade), **OR** tumor size is >1 cm.
- Postmenopausal women with node-positive breast cancer are eligible for the test

Clinical guidelines for repeat service or procedure

- Requests for Oncotype occurring more than six months after diagnosis have not been demonstrated to be medically effective.
- There is no literature supporting repeat Oncotype DX testing or the use of Oncotype DX for testing multiple tumor sites from the same individual.

Type of service or procedure covered

Currently the Oncotype DX test is the only genomic test for the early-stage breast cancer that is included in the National Comprehensive Cancer Center Network (NCCM) and the American Society of Clinical Oncology (ASCO) treatment guidelines

Type of service or procedure not covered (this list may not be all inclusive)

- The Oncotype DX test is not appropriate for women with metastatic (stage IV) breast cancer.
- The use of gene expression assays in men with breast cancer is considered investigational.
- The use of gene expression assays to molecularly subclassify breast cancer is considered investigational.
- The use of gene expression assays for quantitative assessment of ER, PR, and HER2 overexpression is considered investigational

References

Breastcancer.org (2015). Oncotype DX test. *Breast Cancer Tests: Screening, Diagnosis, and Monitoring*. Retrieved April 18, 2016, from: http://www.breastcancer.org/symptoms/testing/types/oncotype_dx

Chen, C., Dhanda, R., Tseng, W., Forsyth, M., & Patt, D. (2013). Evaluating use characteristics for the oncotype Dx 21-gene recurrence score and concordance with chemotherapy use in early-stage breast cancer. *Journal of Oncology Practice, 9(4).* Retrieved April 18, 2016, from: http://jop.ascopubs.org/content/9/4/182.full

Dowsett, M., Sestak, I., Lopez-Knowles, E., Sidhu, K., Dunbier, A. K., Cowens, J. W. et al. (2013) Comparison of PAM50 risk of recurrence score with oncotype DX and IHC4 for predicting risk of distant recurrence after endocrine therapy. *Journal of Clinical Oncology, 31.* Retrieved April 18, 2016, from: http://jco.ascopubs.org/content/early/2013/06/25/JCO.2012.46.1558.full.pdf+html

Eswaran, J., Cyanam, D., Mudvari, P., Reddy, S. D. N., Pakala, S. B., Nair, S. S. et al. (2012) Transcriptomic landscape of breast cancers through mRNA sequencing. *Scientific Reports, 2(264).* Retrieved April 1, 2015, from: http://www.nature.com/srep/2012/120214/srep00264/pdf/srep00264.pdf

Freeman, W. H. et al. (2004). Life cycle of an mRNA. *Molecular Cell Biology, 5.* Retrieved on April 18, 2016, from: http://www.sumanasinc.com/webcontent/animations/content/lifecyclemrna.html

Fried, G., & Moskovitz, M. (2014). Treatment decisions in estrogen receptor-positive early breast cancer patients with intermediate oncotype DX recurrence score results. Retrieved April 18, 2016, from: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3925494/

Hayes, Inc. Update Search and Profile. *Oncotype DX for the Prediction of Recurrence of Invasive Breast Cancer*. Landsdale, PA: Hayes, Inc.; December 2014.

Luo, D., Wilson, J. M., Harvel, N., Liu, J., Pei, L., Huang, S. et al. (2013) A systematic evaluation of miRNA:mRNA interactions involved in the migration and invasion of breast cancer cells. *Journal of Translational Medicine, 11(57).* Retrieved April 18, 2016, from: http://www.translational-medicine.com/content/11/1/57

National Cancer Institute (2013). Clinical Trials. Hormone therapy with or without combination chemotherapy in treating women who have undergone surgery for node-negative breast cancer (The TAILORx Trial). *Cancer.* Retrieved April 2, 2015, from: https://clinicaltrials.gov/ct2/show/NCT00310180

This document has been classified as public information.