Medical Coverage Policy | Axillary Reverse Mapping for Prevention of Breast Cancer-Related Lymphedema

EFFECTIVE DATE: 06|01|2024
POLICY LAST REVIEWED: 01|07|2026

OVERVIEW
Surgery and radiotherapy for breast cancer can lead to lymphedema and are some of the most common causes of secondary lymphedema. Lymphedema is associated with a significant impact on quality of life, and there is no cure for lymphedema. Axillary reverse mapping, also called reverse lymphatic mapping, has been developed with the intent of sparing axillary lymph nodes and lymphatics during breast cancer surgery, minimizing disruption and potentially reducing the risk of subsequent lymphedema development.

MEDICAL CRITERIA
Not applicable

PRIOR AUTHORIZATION
Not applicable

POLICY STATEMENT
Medicare Advantage Plans
Axillary reverse mapping/reverse lymphatic mapping performed during sentinel lymph node biopsy (SLNB) to prevent lymphedema in individuals who are being treated for breast cancer is not covered as the evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

Axillary reverse mapping/reverse lymphatic mapping performed during axillary lymph node dissection (ALND) to prevent lymphedema in individuals who are being treated for breast cancer is not covered as the evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

Commercial Products
Axillary reverse mapping/reverse lymphatic mapping performed during sentinel lymph node biopsy to prevent lymphedema in individuals who are being treated for breast cancer is not medically necessary as the evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

Axillary reverse mapping/reverse lymphatic mapping performed during axillary lymph node dissection to prevent lymphedema in individuals who are being treated for breast cancer is not medically necessary as the evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

COVERAGE
Benefits may vary between groups/contracts. Please refer to the Evidence of Coverage or Subscriber Agreement for applicable not medically necessary/not covered benefits/coverage.

BACKGROUND
Lymphedema
Lymphedema is an accumulation of fluid due to a disruption of lymphatic drainage. Lymphedema can be caused by congenital or inherited abnormalities in the lymphatic system (primary lymphedema) but is most often caused by acquired damage to the lymphatic system (secondary lymphedema). Breast cancer treatment is one of the most common causes of secondary lymphedema. Specific treatment-associated risk factors associated with lymphedema development include:

- Lymphadenectomy

- Dissection or disruption of axillary lymph nodes; increasing the number of dissected/disrupted lymph nodes increases lymphedema risk
- Radiation therapy

The risk of breast cancer-related lymphedema is also increased in overweight or obese individuals, and in those with postoperative infections. Studies have suggested that Black breast cancer survivors are nearly 2.2 times more likely to develop breast cancer-related lymphedema compared to White breast cancer survivors. These observations may be linked to racial disparities with regards to access to treatment and the types of treatments received. Black women are more likely than White women to undergo axillary lymph node dissection, which is associated with greater morbidity than the less invasive sentinel lymph node biopsy. While this may be explained in part by Black individuals having a higher likelihood of being diagnosed with more aggressive tumors, there is evidence that even when adjusting for stage and grade of tumors, Black women are more likely to undergo axillary lymph node dissection, putting Black women at greater risk of breast cancer-related lymphedema. Additionally, Black breast cancer survivors, on average, have higher body mass indexes than White breast cancer survivors, which could contribute to the development of lymphedema in this setting as well.

Development of lymphedema may take months or years following breast cancer treatment, and the true prevalence of breast cancer-related lymphedema is unclear. Systematic reviews have found lymphedema rates up to 13% in individuals undergoing SNLB and as high as 77% in those undergoing ANLD. The addition of radiation therapy to SNLB or ANLD may also increase risk of lymphedema. A prospective study of 1,815 individuals published in 2020 found a 5-year cumulative incidence of breast cancer-related lymphedema of 9.5%, which ranged widely from 8% to 30% when stratified according to type of treatment. The lowest incidence of lymphedema was found among those undergoing SLNB only (8%), increasing to 11% for SNLB + regional lymph node radiation, 25% for ANLD only, and 30% for ANLD + RLNR. While SNLB was associated with a lower lymphedema risk, some risk remains, particularly for those with multiple positive axillary nodes for whom the standard for care is ANLD with or without radiation.

Early and ongoing treatment of lymphedema is necessary. Conservative therapy may consist of several features depending on the severity of the lymphedema. Patients are educated on the importance of self-care including hygiene practices to prevent infection, maintaining ideal body weight through diet and exercise, and limb elevation. Compression therapy consists of repeatedly applying padding and bandages or compression garments. Manual lymphatic drainage is a light pressure massage performed by trained physical therapists or patients designed to move fluid from obstructed areas into functioning lymph vessels and lymph nodes. Complete decongestive therapy is a multiphase treatment program involving all of the previously mentioned conservative treatment components at different intensities. Pneumatic compression pumps may also be considered as an adjunct to conservative therapy or as an alternative to self-manual lymphatic drainage inpatients who have difficulty performing self-manual lymphatic drainage. In patients with more advanced lymphedema after fat deposition and tissue fibrosis have occurred, palliative surgery using reductive techniques such as liposuction may be performed.

Axillary Reverse Mapping

Axillary reverse mapping (ARM), involves subcutaneous administration of blue dye, fluorescence (i.e., indocyanine green), or radioisotopes to allow for visualization of the lymphatic drainage pathways of the arm and breast. This visualization is intended to distinguish and enable preservation of axillary lymph nodes and lymphatics in individuals undergoing SLNB and/or ALND. It is believed that because the axilla and breast have mostly separate drainage pathways, the risk of lymphedema is reduced by avoiding the removal of lymph nodes and lymphatics that only drain the axilla identified through ARM.

Axillary reverse mapping for lymphedema is adjunctive to a surgical procedure and, as such, is not subject to regulation by the U.S. Food and Drug Administration (FDA). Mapping agents used to visualize lymphatic pathways (e.g. isosulfan blue, indocyanine green) may be subject to FDA regulation.

For individuals with breast cancer undergoing sentinel lymph node biopsy (SLNB) who receive axillary reverse mapping (ARM), the evidence includes nonrandomized studies and systematic reviews of those studies. Relevant outcomes are symptoms, change in disease status, morbid events, quality of life, and treatment-related morbidity. Evidence from 2 systematic reviews found ARM identified axillary lymphatics in about 38% of individuals undergoing SLNB, with lymphedema rates of 2% to 3% in individuals who underwent ARM during SLNB. Other outcomes such as quality of life were not reported. The systematic reviews had numerous limitations, including unclear mean duration of follow-up and inclusion of only single-arm, uncontrolled studies. Evidence from well-designed RCTs or controlled cohort studies is needed to determine the net health benefit of ARM in SLNB. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

For individuals with breast cancer undergoing axillary lymph node dissection (ALND) who receive ARM, the evidence includes randomized controlled trials (RCTs), nonrandomized studies, and systematic reviews of those studies. Relevant outcomes are symptoms, change in disease status, morbid events, quality of life, and treatment-related morbidity. Pooled evidence from a systematic review of 5 RCTs showed a lower risk of lymphedema with ARM compared with no ARM (odds ratio [OR], 0.20; 95% confidence interval [CI], 0.13 to0.29), and another systematic review of RCTs and nonrandomized studies found a pooled lymphedema prevalence of 14% and lower risk of lymphedema with ARM and preserved axillary lymph nodes compared with resected lymph nodes (OR, 0.27; 95% CI, 0.20 to 0.36). In the same review, ARM was associated with an 82% identification rate of axillary lymph nodes and lymphatics, and a crossover rate between ARM and sentinel lymph nodes of 12%. Other health outcomes, including quality of life, were not reported. The safety of ARM in ALND has not been established, and the rate of metastatic ARM nodes was 13% based on pooled analysis of 27 studies in one systematic review. ARM in ALND was associated with a lower risk of lymphedema in the largest RCT conducted to date, which was also included in the systematic reviews, but oncological safety could not be determined and the trial also had important study relevance and design limitations. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

CODING

Medicare Advantage Plans and Commercial Products

There is no specific code to represent this service. The following Unlisted procedure code will be considered not covered for Medicare Advantage Plans and not medically necessary for Commercial Products when filed to represent axillary reverse mapping or reverse lymphatic mapping.

38999 Unlisted procedure, hemic or lymphatic system

RELATED POLICIES

Unlisted Procedures

PUBLISHED

Provider Update, January/March 2026
Provider Update, April 2024

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