

## Breast Cancer

Note: For Medicare members/enrollees, to ensure consistency with the Medicare National Coverage Determinations (NCD) and Local Coverage Determinations (LCD), all applicable NCDs, LCDs, and Medicare Coverage Articles should be reviewed prior to applying the criteria set forth in this clinical policy. Refer to the CMS website at <http://www.cms.gov> for additional information.

Note: For Medicaid members/enrollees, circumstances when state Medicaid coverage provisions conflict with the coverage provisions within this clinical policy, state Medicaid coverage provisions take precedence. Please refer to the state Medicaid manual for any coverage provisions pertaining to this clinical policy.

### DISCUSSION

Breast cancer is the second most diagnosed cancer and affects 30% of women diagnosed with cancer each year. The median age for breast cancer diagnosis is 62, which means that half of women diagnosed are 62 or younger. A small number of women are diagnosed younger than 46. Breast cancer is also the second leading cause of cancer deaths in women. The rates have been decreasing over the years and it is felt that improved screening and better treatments are responsible for the lower rates.<sup>1</sup>

The American Cancer Society estimates that 2,710 new cases of invasive breast cancer will be diagnosed in men in 2022, and about 530 men will die from this cancer.<sup>2</sup>

Radiation therapy (RT) is used to treat the breast and lymph node bearing areas after partial mastectomy or lumpectomy. Because breast cancers are relatively responsive to moderate doses of radiation therapy following tumor excision, treatment is achieved by external beam techniques to the whole breast or by partial breast irradiation techniques. The methods suitable for delivering breast radiation therapy have been established through clinical trials, providing strong evidence in support of radiation therapy as an effective breast cancer treatment. The recommendations for radiation therapy in men with breast cancer are largely taken from those for female breast cancer because not enough studies have been done in men.<sup>3</sup>

#### Types of Breast Cancer Treatment

Radiation treatment for breast cancer includes the use of three-dimensional conformal radiation therapy (3D-CRT), intensity-modulated radiation therapy (IMRT), image-guided radiation therapy (IGRT), and internal radiation (brachytherapy). IMRT is not indicated as a standard treatment option for breast cancer but may be indicated for selected cases of breast cancer with proximity to critical structures.

Radiation therapy may be recommended after mastectomy to destroy any cancer cells that may be left behind after the surgery. During mastectomy, it's difficult for surgeons to remove every infected cell of the breast tissue. Factors included in the decision for cancer treatment are the number of lymph nodes involved, the size of the cancer, and if cancer is at any of the edges of the surgery (positive margins).<sup>4</sup>

#### Radiation Therapy

##### Principles of Radiation Therapy

It is important to individualize RT planning and delivery. CT-based treatment planning is encouraged to delineate target volumes and adjacent organs at risk. Greater target dose homogeneity and sparing of normal tissues can be accomplished using compensators such as wedges and forward planning using segments. Respiratory control

techniques include deep inspiration breath-hold to decrease cardiac dose and prone positioning may be used to try to further reduce dose to adjacent normal tissues, particularly the heart.

Studies of Accelerated Partial Breast Irradiation (APBI) suggest that rates of local control in selected low-risk patients with early-stage breast cancer are comparable to those treated with standard WBRT. However, compared to standard WBRT, several studies document an inferior cosmetic outcome with external beam delivery methods of APBI. Follow-up is limited and studies are ongoing. The National Comprehensive Cancer Network (NCCN) recommends partial breast radiation for any patient who is BRCA-negative and meets the 2016 American Society for Radiation Oncology (ASTRO) criteria.<sup>5</sup> The 2016 ASTRO criteria defines patients greater than or equal to 50 years of age to be considered “suitable” for APBI if they have invasive ductal carcinoma measuring less than or equal to 2 cm (pT1 disease) with negative margin widths of less than or equal to 2 mm, no LVI, and ER-positive or they have low/intermediate nuclear grade screening-detected DCIS measuring size less than or equal to 2.5 cm with negative margin widths of greater than or equal to 3 mm.<sup>6</sup>

## DEFINITIONS

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- **Adjuvant radiation therapy** - Additional radiation therapy given after the primary treatment to lower the risk of cancer recurrence.
- **Brachytherapy (BT)** - Brachytherapy is a procedure that involves placing radioactive material inside your body. Brachytherapy is sometimes called internal radiation.
- **Fractions** - A way of dividing a total dose of radiation into separate doses to be administered over a period of time.
- **Gray (Gy)** - One of the two units used to measure the amount of radiation absorbed by an object or person, known as the absorbed dose. One gray (Gy) is the international system of units (SI) equivalent of 100 rads, which is equal to an absorbed dose of 1 Joule/kilogram.
- **Image-guided radiation therapy (IGRT)** - Image-guided radiation therapy (IGRT) is the use of imaging during radiation therapy to improve the precision and accuracy of treatment delivery. IGRT is used to treat tumors in areas of the body that move, such as the lungs. Radiation therapy machines are equipped with imaging technology to allow your doctor to image the tumor before and during treatment. By comparing these images to the reference images taken during simulation, the patient's position and/or the radiation beams may be adjusted to more precisely target the radiation dose to the tumor. To help align and target the radiation equipment, some IGRT procedures may use fiducial markers, ultrasound, MRI, x-ray images of bone structure, CT scan, 3-D body surface mapping, electromagnetic transponders, or colored ink tattoos on the skin.
- **Intensity-modulated radiotherapy (IMRT)** - Intensity-modulated radiation therapy (IMRT) is an advanced mode of high-precision radiotherapy that uses computer-controlled linear accelerators to deliver precise radiation doses to a malignant tumor or specific areas within the tumor. IMRT allows the radiation dose to conform more precisely to the three-dimensional shape of the tumor by controlling the intensity of the radiation beam in multiple small volumes. IMRT also allows higher radiation doses to be focused to regions within the tumor while minimizing the dose to surrounding normal critical structures.
- **National Comprehensive Cancer Network® (NCCN)** - An alliance of 32 leading cancer centers devoted to patient care, research, and education. The NCCN guidelines are utilized for Radiation Therapy and Medical Oncology standards. NCCN consensus clinical standards are periodically updated and NantHealth, Inc. reviews these and updates its policies within a timely manner.
- **Palliative Radiation Therapy** - Treatment given to help relieve the symptoms and reduce the suffering caused by cancer or other life-threatening diseases. Palliative therapy may help a person feel more comfortable, but it does not treat or cure the disease. Palliative therapy may be given with other treatments from the time of diagnosis until the end of life.

- **Three dimensional conformal radiation therapy (3D-CRT)** - A procedure that uses a computer to create a three dimensional picture of the tumor. This allows doctors to give the highest possible dose of radiation to the tumor, while sparing the normal tissue as much as possible.

## POLICY

The following table outlines the criteria that must be met for the number of fractions and dosing relative to breast cancer radiation treatments. This dosing table represents evidence-based doses and fractions for the designated type of cancer treatment. Variations outside of the ranges may indicate a deviation from standard treatment.

Breast Cancer			
Adjuvant Therapy			
	Number of Fractions	Total Dose	Technique
Conventional Fractionation Post Mastectomy with Optional Boost	Chest Wall: 23-38 Boost: 5-12	Chest Wall: 45-50.4 Gy Boost: 10-21 Gy	3D, IMRT
Conventional Fractionation Post Lumpectomy with Optional Boost	Breast: 25-28 Boost: 4-8	Breast: 45-50.4 Gy Boost: 10-16 Gy	3D, IMRT
Hypofractionated Post Lumpectomy with Optional Boost	Breast: 15-16 Boost: 4-8	Breast: 40-42.7 Gy Boost: 10-16 Gy	3D, IMRT
Ultra-Hypofractionated Post Lumpectomy	5 (Once Weekly x 5)	28.5 Gy	3D
Ultra-Hypofractionated Post Lumpectomy or Partial Mastectomy with Optional Boost (DCIS and Invasive Breast Cancer)	5	26 Gy	3D
Partial Breast Radiation	5 -15	30-40 Gy	3D, IMRT, IGRT
	10	34 Gy	Brachytherapy
Palliative Radiation	1-15	8-37.5 Gy	3D

## REFERENCES

1. Key statistics for breast cancer. American Cancer Society. <https://www.cancer.org/cancer/breast-cancer/about/how-common-is-breast-cancer>. Accessed May 15, 2022.
2. Key statistics for breast cancer in men. American Cancer Society. <https://www.cancer.org/cancer/breast-cancer-in-men/about/key-statistics.html>. Accessed May 15, 2022.
3. Radiation therapy for breast cancer in men. American Cancer Society. <https://www.cancer.org/cancer/breast-cancer-in-men/treating/radiation-therapy.html>. Accessed May 14, 2022.
4. Breast cancer. Cancer.Net. <https://www.cancer.net/cancer-types/breast-cancer/types-treatment#radiation-therapy>. Accessed May 14, 2022.
5. NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Breast Cancer. (Version 3.2022). Available at [https://www.nccn.org/professionals/physician\\_gls/pdf/breast.pdf](https://www.nccn.org/professionals/physician_gls/pdf/breast.pdf). ©National Comprehensive Cancer Network, 2022.
6. Correa C et al. Accelerated partial breast irradiation: Update of an ASTRO evidence-based consensus statement. Practical Radiation Oncology, 2017. <https://www.practicalradonc.org/cms/10.1016/j.prro.2016.09.007/attachment/44c2751f-db2e-47de-9180-685c894dd136/mmc1.pdf>

Please see all related radiation therapy treatment policies for additional information on the treatment modalities.  
(3D-CRT, BT, EBRT, IGRT and IMRT)

### CODING [ICD 10, HCPCS]\*

\*Procedure codes appearing in medical policy documents are only included as a general reference. This list may not be all-inclusive and is subject to updates. In addition, codes listed are not a guarantee of payment. CPT codes are available through the AMA.

Code	Description
DB073ZZ	Chest wall beam radiation using electrons
DB075ZZ	Chest wall beam radiation using neutrons
DB076ZZ	Chest wall beam radiation using neutron capture
DH065ZZ	Beam radiation of chest skin using neutrons
DH066ZZ	Beam radiation of Chest skin using Neutron capture
DMY07ZZ	Contact radiation to L breast
DMY0FZZ	Plaque radiation to L breast
DMY17ZZ	Contact radiation to R breast
DMY1FZZ	Plaque radiation to R breast
D7Y4FZZ	Plaque radiation to Axillary Lymphatics
DB27JZZ	Stereotactic Gamma Beam Radiosurgery of Chest Wall
DM003Z0	Beam Radiation to L breast using electrons, intraoperative
DM013Z0	Beam Radiation to R breast using electrons, intraoperative
DM003ZZ	Beam radiation to L breast using electrons
DM013ZZ	Beam radiation to R breast using electrons
DM005ZZ	Beam radiation of L breast using neutrons
DM006ZZ	Beam radiation of L breast using neutron capture
DM015ZZ	Beam radiation of R breast using neutrons
DM016ZZ	Beam radiation of R breast using neutron capture
G6003	Radiation treatment delivery, single treatment area, single port or parallel opposed ports, simple blocks or no blocks: up to 5 MeV
G6004	Radiation treatment delivery, single treatment area, single port or parallel opposed ports, simple blocks or no blocks: 6-10 MeV
G6005	Radiation treatment delivery, single treatment area, single port or parallel opposed ports, simple blocks or no blocks: 11-19 MeV

Code	Description
G6006	Radiation treatment delivery, single treatment area, single port or parallel opposed ports, simple blocks or no blocks: 20 MeV or greater
G6007	Radiation treatment delivery, 2 separate treatment areas, 3 or more ports on a single treatment area, use of multiple blocks: up to 5 MeV
G6008	Radiation treatment delivery, 2 separate treatment areas, 3 or more ports on a single treatment area, use of multiple blocks: 6-10 MeV
G6009	Radiation treatment delivery, 2 separate treatment areas, 3 or more ports on a single treatment area, use of multiple blocks: 11-19 MeV
G6010	Radiation treatment delivery, 2 separate treatment areas, 3 or more ports on a single treatment area, use of multiple blocks: 20 MeV or greater
G6015	Intensity modulated treatment delivery, single or multiple fields/arcs, via narrow spatially and temporally modulated beams, binary, dynamic MLC, per treatment session
G6016	Compensator-based beam modulation treatment delivery of inverse planned treatment using 3 or more high resolution (milled or cast) compensator, convergent beam modulated fields, per treatment session
Z51.5	Encounter for palliative care

## REVISION AND REVIEW HISTORY

No.	Description	Date(s)
1	Original Effective Date:	5/2022
2	Policy Review Dates:	5/18/2022, 5/24/2022, 5/25/2022, 5/31/2022, 7/20/2022, 8/25/2022
3	Policy Revision Dates:	5/18/2022, 5/24/2022, 5/25/2022, 5/31/2022, 7/20/2022, 8/25/2022
4	Department Owner:	Medical Affairs
5	NH Advisory Committee Approval Dates:	5/18/2022, 5/31/2022, 8/25/2022
6	Revision Changes:	8/25/2022 - IMRT added as a technique for Adjuvant Therapy (Conventional Fractionation Post Mastectomy with Optional Boost, Conventional Fractionation Post Lumpectomy with Optional Boost, and Hypofractionated Post Lumpectomy with Optional Boost)