

Breast Cancer Treatment

Presented by Melissa Riddle, ODS-C
ICR Video Training Series | Iowa Cancer Registry
March 2025



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NCCN Guidelines
<https://www.nccn.org/guidelines/guidelines-detail?category=1&id=1419>

Breast Cancer

➔ Guidelines

 **NCCN Guidelines** Version 5.2023

- Ductal Carcinoma in situ (DCIS)
- Invasive Breast Cancer
- Special consideration: Breast Cancer During Pregnancy
- Special consideration: Inflammatory Breast Cancer
- Special consideration: Paget Disease
- Special consideration: Phyllodes Tumor

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Treatment Options


Neoadjuvant vs. Adjuvant Therapy
Surgery to breast and/or lymph nodes
Radiation Therapy
Chemotherapy
Hormone/Endocrine
HER2-targeted therapy
Bone-targeted therapy
Clinical Trials

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Treatment

Adjuvant Therapy – “aids or contributes” to therapy.
Given postop where no disease is present.

 **Neoadjuvant Therapy** -
systemic or radiation
treatment administered prior
to surgery in an attempt to
shrink the tumor or destroy
regional metastases.

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Neoadjuvant Therapy Fields

NAACCR Item #	Field Name	Source	Notes/Comments
3922 SSDI	Response to Neoadjuvant Therapy – Clinical	Treatment effect stated by managing physician	Based on the managing/treating physician's interpretation/statement of the response to neoadjuvant therapy
1632 SPCSM	Neoadjuvant Therapy	Medical record	Meet criteria of neoadjuvant therapy
1633 SPCSM	Neoadjuvant Therapy – Clinical Response	Managing physician states outcome	Based on the managing/treating physician's interpretation/statement of the response to neoadjuvant therapy
1634 SPCSM; Appendix C	Neoadjuvant Therapy – Treatment Effect	Pathology report	Statement by pathologist of neoadjuvant treatment effect on pathology report

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Neoadjuvant Therapy

Breast

[Coding Guidelines: Breast](#) (PDF, 82 KB)

[Solid Tumor Rules: Breast](#) (PDF, 1.7 MB)

SURGERY CODES

▪ [Breast - \(C500-C509\)](#) (PDF, 61 KB)



SITE-SPECIFIC CODES FOR NEOADJUVANT THERAPY TREATMENT EFFECT

▪ [Breast](#) (PDF, 211 KB)

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Surgery

Breast Surgery with or without reconstruction
LN Surgery

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Surgery of Primary Site

Describes the surgical procedure that removes and/or destroys tissue of primary site that is performed as part of initial diagnostic and staging work-up or first course therapy.

Primary Source Document:

- Use entire **operative report** to determine best surgery.
- Read body of report, surgeon's planned procedure as well as description of what was done.

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Surgery of Primary Site 2023

Coding Instructions:

3. Code the most invasive, extensive, or definitive surgery if patient has multiple procedures of primary site.

- Even if most definitive surgery has no residual tumor

4. Code Excisional biopsy, even with documented as incisional when:

- All disease removed (margins free) **OR**
- All gross disease is removed and only microscopic residual at margin
 - **NOTE:** Do not code incisional biopsy as excisional when macroscopic residual disease.

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Treatment: Surgery

Breast-conserving surgery, an operation to remove the cancer but not the breast itself, includes the following:

- **Lumpectomy:** Surgery to remove a tumor (lump) and a small amount of normal tissue around it.
- **Partial mastectomy:** Surgery to remove the part of the breast that has cancer and some normal tissue around it. This procedure is also called a segmental mastectomy.

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Breast: Surgery Codes

- See Appendix C: Breast – Surgery Codes

https://seer.cancer.gov/manuals/2024/AppendixC/Surgery_Codes_Breast_2024.pdf

- Code surgical resection code for breast primaries
 - B codes 2024+
 - A codes 2023
- Do not record reconstruction in this data item
- If contralateral breast reveals a second primary
 - Each breast is abstracted separately

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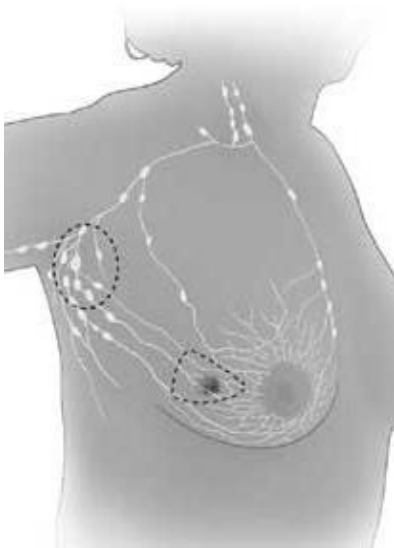
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Breast: Surgery Codes – Excisional Biopsy

Code	Description	Note
B200	Partial Mastectomy; lumpectomy; segmental mastectomy	Use when there is a previous positive biopsy (core or FNA)
B210	Excisional breast biopsy	Diagnostic excision – NO previous positive biopsy; Excisional biopsy and not known to be cancer
B215	Excisional biopsy for atypia	Patient has a previous biopsy showed atypia (ADH)
B240	Re-excision of margins from primary tumor site	Less than total mastectomy performed; <u>Previous lumpectomy/excisional biopsy</u> with positive margins
B290	Central lumpectomy	Prior diagnosis of cancer; includes removal of nipple areolar complex

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Breast Conserving Surgery

- Dotted lines show the area containing the tumor that is removed and some of the lymph nodes that may be removed.
- Patients who are treated with breast-conserving surgery may also have some of the lymph nodes under the arm removed for biopsy. This procedure is called lymph node dissection. It may be done at the same time as the breast-conserving surgery or after. Lymph node dissection is done through a separate incision.

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Breast: Surgery Codes – Sparing Mastectomy

Code	Description	Note
B300	Skin-sparing mastectomy <ul style="list-style-type: none"> • B310 WITHOUT contralateral breast • B320 WITH contralateral breast 	Removes all breast tissue & nipple areolar complex; preserves breast skin; with or without ALND; Goldilocks mastectomy
B400	Nipple-sparing mastectomy <ul style="list-style-type: none"> • B410 WITHOUT contralateral breast • B420 WITH contralateral breast 	Removes all breast tissue; preserves nipple areolar complex and breast skin; with or without ALND
B500	Areolar-sparing mastectomy <ul style="list-style-type: none"> • B510 WITHOUT contralateral breast • B520 WITH contralateral breast 	Removes all breast tissue and nipple; preserves areola and breast skin; with or without ALND;

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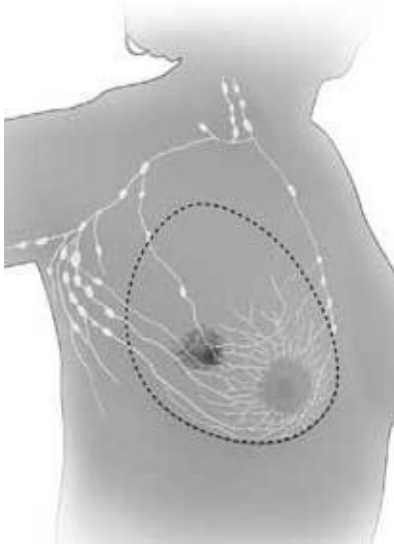
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Breast: Surgery Codes - Mastectomy

Code	Description	Note
B600	Total (simple) Mastectomy <ul style="list-style-type: none"> • B610 <u>WITHOUT</u> contralateral breast • B620 <u>WITH</u> contralateral breast 	Removes all breast tissue, nipple areolar complex, breast skin; With or without SLN bx or ALND; Modified Rad Mastectomy
B700	Radical Mastectomy <ul style="list-style-type: none"> • B710 <u>WITHOUT</u> contralateral breast • B720 <u>WITH</u> contralateral breast 	Removes all breast tissue, nipple areolar complex, breast skin, pectoralis muscle; WITH ALND Level I-III
B760	Radical Bilateral Mastectomy for a <u>single tumor</u>	Bilateral inflammatory breast carcinoma
B800	Mastectomy NOS	Includes extended radical mastectomy

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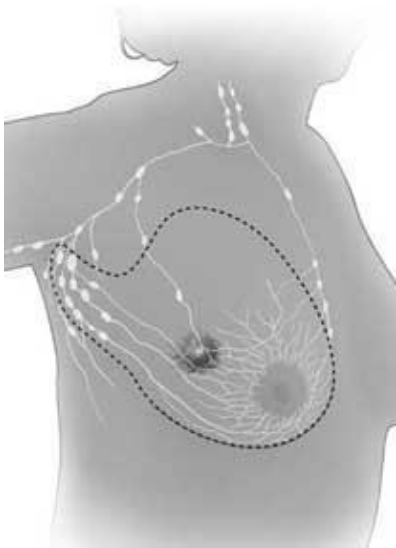


Total (simple) mastectomy

Total (simple) mastectomy. The dotted line shows where the entire breast is removed. Some lymph nodes under the arm may also be removed.

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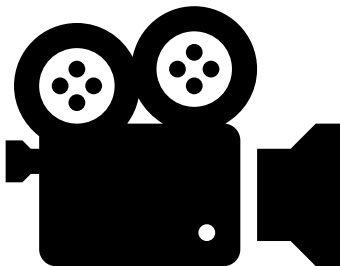


Modified Radical Mastectomy

Modified radical mastectomy. The dotted line shows where the entire breast and some lymph nodes are removed. Part of the chest wall muscle may also be removed.

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Breast Surgery Videos

- Overview of breast surgery – multiple types:
<https://www.youtube.com/watch?v=WUoqsBxgXWI>
- Skin-sparing/Nipple-sparing mastectomy
<https://www.youtube.com/watch?v=A9VkSXRyp9U>

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Surgical Procedure/Other Site

2024 STORE Manual



Inadvertently previous instructions were carried forward that should not have been – **IGNORE the last bullet on page 228**

For single primaries, the removal of the uninvolved contralateral breast should **NOT** be coded as surgical procedure/other site

SEER Program Coding and Staging Manual

Do not code removal of uninvolved breast in this data item

- Include this information in the surgery primary site code

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Breast Reconstruction

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Breast Reconstruction

Rebuilds contour of breast

- Saline breast **Implants**
 - Key words: implant, tissue expander, two-stage
- Muscle flap reconstruction
 - Key words: own **tissue**, tram flaps, belly tissue used [human tissue]
 - TRAM: transverse rectus abdominus myocutaneous flap

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Breast Reconstruction

- Immediate reconstruction:
 - Performed during the same operative session as the primary site surgery
 - Under the same anesthesia
 - One surgeon can perform the resection to primary and another can perform reconstruction
 - Don't code reconstruction performed on a different day than the breast primary definitive resection
- Only code **ipsilateral** breast reconstruction

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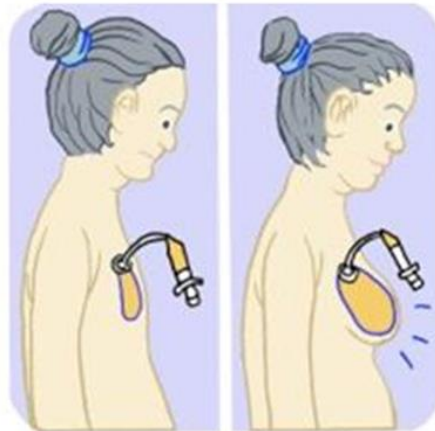
Breast Reconstruction Codes

	Code	Description	Note
	A000	No reconstruction	Reconstruction started but not completed
Preparing for implant later →	A100	Tissue expander placement	Tissue expanders placed <u>WITHOUT</u> implant or tissue placement
	A200	Direct to implant placement	Permanent implant immediately following resection
May be in the op report or in a separate breast plastic reconstructive op note →	A300	Oncoplastic tissue rearrangement	Parenchymal flap or adjacent tissue transfer; <u>Not a formal mastopexy/reduction</u>
	A400	Oncoplastic reduction and/or mastopexy	Breast reduction/lift with breast conserving resection
	A500	Oncoplastic reconstruction with reg tissue flaps	Skin flaps with breast conserving resection

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Tissue Expander A100



^ Tissue expander used to expand pocket for later placement of permanent implant

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Breast Reconstruction Codes

Tissue reconstruction following a mastectomy

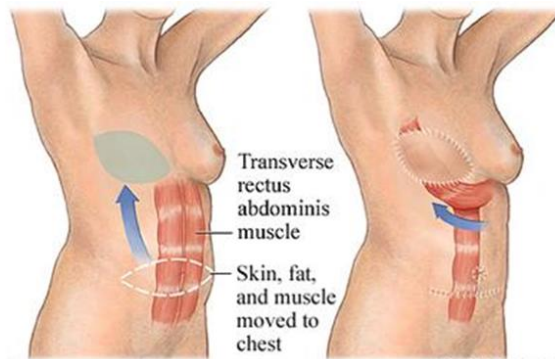
NOS codes
Use sparingly

Code	Description	Note
A600	Mastectomy reconstruction with autologous tissue, <u>source unknown</u>	Tissue from the patient but unknown from what site
A610	Mastectomy reconstruction WITH abdominal tissue	Abdominal tissue from patient to reconstruct breast
A620	Mastectomy reconstruction WITH thigh tissue	Thigh tissue from patient used
A630	Mastectomy reconstruction WITH gluteal tissue	Gluteal tissue from patient used
A640	Mastectomy reconstruction WITH back tissue	Back tissue from patient used
A900	Reconstruction NOS	Reconstruction done-unknown type
A970	Implant reconstruction NOS	Implant placed with no other information
A980	Autologous tissue-based reconstruction NOS	Tissue from patient with no other information
A990	Unknown if immediate reconstruction performed	

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Abdominal Tissue A610



^ TRAM reconstruction, example of true patient's "tissue" being used to form new breast.

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LN Surgery

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Scope Regional Lymph Node Surgery

Sentinel Lymph Node Biopsy (SLN bx)

- First node in lymphatic basin

Axillary Lymph Node Dissection (ALND)

- Multiple nodes along LN chain, regional

Scope of LN Surgery

- Describes **procedure** of removal, biopsy, or aspiration of regional lymph nodes during initial workup or first course therapy.

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Scope Regional LN Surgery

Source: **Operative Report**

- Look for sentinel LN biopsy alone (was dye injected?) or combined with a regional LN dissection or fails to map.
- Regional lymph nodes only
- The Scope of Regional Lymph Node field is **cumulative**.
 - Add all the lymph nodes removed during each surgical procedure performed as part of the first course of treatment.
- Code the removal of regional nodes for both primaries when the patient has **two primaries with common regional lymph nodes**.

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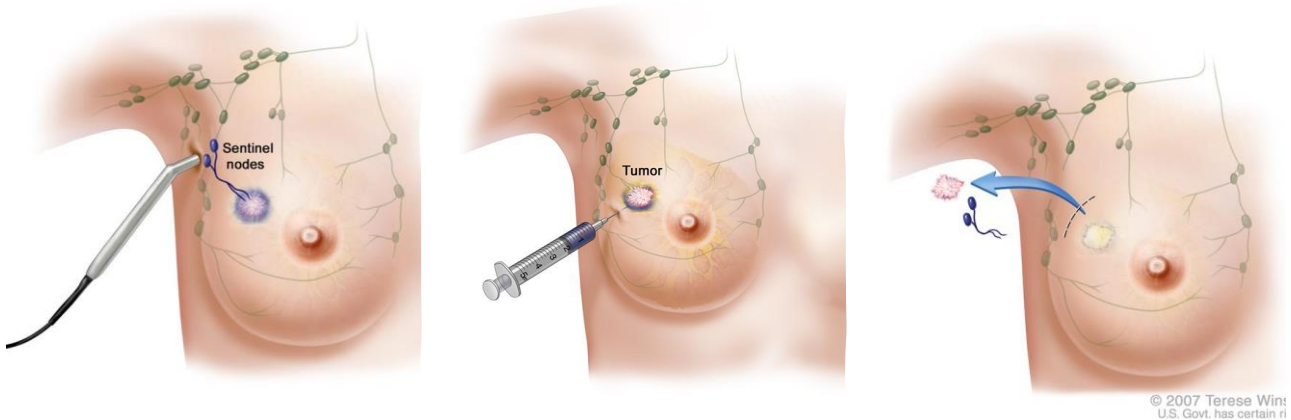
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Sentinel LN Biopsy [SLN bx]

- If clinical workup for lymph node mets is negative, a SLNB may be indicated.
- If clinical workup for lymph node mets is positive, a SLNB would NOT be indicated.
- **Note:** When a SLNBx is performed, **additional non-sentinel nodes can be taken during the same operative procedure. These additional non-sentinel nodes may be discovered by the pathologist or selectively removed (or harvested) as part of the SLNBx procedure by the surgeon. Code this as a SLNBx (code 2).**
 - If review of the operative report confirms that a regional lymph node dissection followed the SLNBx, code these cases as 6.

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Sentinel LN procedure

- Sentinel lymph node biopsy.
 - Radioactive substance and/or blue dye is injected near the tumor
 - The injected material is followed visually or with a probe
 - The first lymph nodes to take up the material are removed and checked for cancer cells

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Scope Regional LN Surgery Codes

Description	Note	Code
No regional LN removed/aspirated	Regional LN surgery was not performed	0
Biopsy/Aspiration Regional LN NOS	Not common for breast primary	1
Sentinel LN Bx ONLY	Op report describe using injection dye, radio label; Failed to map- use this code if no ALND is performed	2
Regional LN removed – number unknown	LN Dissection (LND) performed; was SLN bx performed? See codes 2, 6, or 7	3
1-3 Reg LN removed	Review op report to ensure this is not a SLN bx	4
4+ Reg LN removed	Was SLN bx performed? See codes 6 or 7	5
SLN bx + Codes 3-5 SAME time	During same anesthesia; if SLN bx fails to map and LND performed	6
SLN bx + Codes 3-5 DIFFERENT times	During separate surgical events	7
Unknown/Not applicable	Use sparingly	9

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Date of SLNBx

- New field for 2018
- Required for breast and cutaneous melanoma only
- Record the date of the SLN Bx only
 - Not the FNA, core needle biopsy, core biopsy
- If SLN BX and Axillary LND done at same time dates will be the same.

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SLN Examined

For breast and cutaneous melanoma only

- Document total # sampled during **SLN procedure** (even when sentinel and non-sentinel nodes are sampled during SLNBx procedure)
 - Record **total # of nodes** from procedure.
- Number of sentinel nodes should be equal or less than number of Reg Nodes Examined field.

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SLN Positive

For Breast and cutaneous melanoma only

- Document total # of positive nodes identified during SLN **procedure**.
- Number of pos SLN should be less than or equal to total number of Reg Nodes Pos field.

FOR BREAST ONLY:

- Use **code 97** when **positive SLNs and SLNBX** performed during same procedure as **regional LND**
- SLN are negative when only pos ITC's are identified

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Terms

Per UIHC Breast Surgeon,

Lillian Erdahl, MD, FACS

- **Targeted Axillary Dissection** = SLN Bx

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Radiation Therapy

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Radiation Therapy

Usually follows lumpectomy or other breast conserving surgery

Neoadjuvant (pre-op) used to shrink tumors before surgery

Adjuvant (post-op) if they cannot successfully remove tumor (next to ribs cage or chest wall muscles) or larger than 2 cm

Also used to treat chest wall recurrence or metastatic disease

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MammoSite

- Accelerated Partial Breast Irradiation [APBI]
- MammoSite® 5-Day Targeted Radiation Therapy
- Placement
- Treatment
- Removal



www.mammosite.com

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IORT

- Intraoperative Radiotherapy is administered as a single treatment during surgery. Convenient for patient. No repeated visits.
- Lumpectomy cavity or tumor bed.
- IORT delivery device inserted.
 - Radiation to cavity, approx. 30 min.
 - Remove device and suture breast.

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Neoadjuvant radiation

- Preop RT followed by radical surgery feasible
- Good long-term locoregional control
- Based on T2-T4 or N2 tumors

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Radiation Therapy

- Patient has completed neoadjuvant chemo, followed by bilateral mastectomy, left ALND – pathology neg for malign and 0/13 LN
- Plan: 50 Gy/25 fx without a boost to left chest wall and regional LN

Treatment Site	Energy	Dose/Fx (cGy)	#Fx	Total dose (cGy)	Start	End
Lt CW Bolus	6x	200	13/13	2600	11/14/23	12/20/23
Lt CW	6x	200	12/12	2400	11/15/23	12/20/23
Lt Sclav	10x	180	25/25	4500	11/14/23	12/20/23

- How many phases?
- Does the bolus affect the phase determination?
- How do we code radiation for this case?

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Radiation Therapy

- Bolus doesn't affect phases
 - It is a tissue like material to help improve radiation treatment
- Subclav nodes are regional and included in Rad to Nodes code 04 – Breast/Chest Wall region
- There was no breast tissue remaining (bilateral mastectomy) and radiation was directed to chest wall (volume code 42)
- Forum examples:

<https://cancerbulletin.facs.org/forums/node/139935#post143609>
<https://cancerbulletin.facs.org/forums/node/139591#post139785>
<https://cancerbulletin.facs.org/forums/node/119910>

Segment	Description	Code
Summary	Rad/Surg Sequence	3
	Reason No Rad	0
	Location of Rad	1
	Date Started	11/14/23
	Date Ended	12/20/23
	Number of Phases	1
	Discontinued Early	01
	Course Total Dose	05000
Phase 1	Volume	42
	Rad to Nodes	04
	Modality	02
	Planning Technique	02
	Number of Fx	025
	Dose per Fx	00200
	Total Phase 1 Dose	05000

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Systemic Therapy

Chemotherapy
Hormone
Immunotherapy

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SEER*Rx

Always look up
drugs/treatment in SEER*Rx
to ensure accurate coding

<https://seer.cancer.gov/seertools/seerrx/>

SEER*Rx Interactive Antineoplastic Drugs Database

Search Database Download

Search

Drugs (1787) Regimen (463) Show 25 Entries

Name	Category	Primary Site	Coded?
111-MIBG	Radiation		See Remarks
5-Fluorouracil	Chemotherapy	COL	Yes
5-FU	Chemotherapy	Breast, gastric, head & neck, liver cancer	Yes
ABT 888	Chemotherapy	Ovary	Yes
ADXS-HPV	Biologic therapy (BRM, immunotherapy)	Cervix	Yes

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Chemotherapy

- What is the hormone status and HER2?
- Were the lymph nodes involved?
- HER2 positive status
- Triple negative: Chemo is only systemic therapy that can be used

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Common Chemotherapy

- Anthracyclines such as Doxorubicin (Adriamycin)
- Cyclophosphamides (Cytoxan)
- Epirubicin (Ellence)
- 5FU
- Methotrexate
- Taxanes such as Paclitaxel (taxol)
- Docetaxel (Taxotere)

Common Regimen would be AC+Taxol with/without Herceptin

Search SEERx regimen and note the tabs/drugs listed

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Hormone Therapy

- Hormone receptor positive cancer – ER+
 - 5 years of treatment
- SERMs
 - Block estrogen receptors from connecting to the cancer cells
 - Tamoxifen; Toremifene (Fareston)
- SERDs
 - Bind to estrogen receptors causing them to breakdown
 - Faslodex; Elacestrant (Orserdu)
- Aromatase inhibitors
 - Stop estrogen production
 - Femara; Arimidex; Aromasin

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Endocrine Procedure

Removes hormones or blocks their action and stops cancer cells from growing

- Pre-menopausal women with a high risk of recurrence
- Ovarian ablation is a hormonal maneuver. Can be done surgically or with LHRH drugs like Lupron or Zoladex to suppress ovaries.
 - Code as **Hormone Therapy - 01**
- Bilateral Oophorectomy
 - Coded in **Heme Transplant/Endocrine Procedure – Code 30**

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Immunotherapy

- PD-1 Inhibitor
 - Pembrolizumab (Keytruda)
 - Boosts immune response against breast cancer cells
 - Targets PD-1, protein on immune system Tcells
 - Used with chemo to treat triple-neg breast cancer
 - Before and after surgery for stage 2 or 3 cancers
 - For local recurrence that can't be removed with surgery
 - For cancer that has distant mets

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Herceptin

Only for HER2+

About 25% of breast cancer patients carry this gene (HER2 pos)

- HER2 targeted therapies include:
 - Perjeta, Herceptin, Kadcyla, Enhertu,
- Most often given with chemo
- May be used alone or in combo with endocrine therapy
- Coded as **Immunotherapy**

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Targeted Therapies

- **Kinase Inhibitors** – HER2 protein
 - Tykerb; Nerlynx; Tukysa
- **CDK4/6 inhibitors** – block cyclin-dependent kinases in hormone receptor + cancer
 - Ibrance; Kisqali; Verzenio
- **mTor inhibitors** – blocks protein that helps cells grow & divide
 - Afinitor
- **PARP inhibitors** – block repair proteins
 - Lynparza, Talzenna for BRCA1 or BRCA2 mutation tumors
- **PIK3CA inhibitor** (this gene most frequently mutated in breast cancers)
 - Piqray; Itovebi
 - Advanced hormone receptor + cancer cells, HER2 – with the PIK3CA gene mutation
- **Antibody-drug conjugate** – attach to protein on cancer cells, brings chemo to them
 - Trodelvy – Triple negative breast cancer

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Bone Targeted Therapy

Relieves bone pain or reduce risk of bone problems.

Prevent bone loss: Zometa, Aredia, Prolia

Treat bone mets:

Zometa: Ancillary

Aredia: Ancillary

Xgeva: Ancillary or BRM – see note in SEERx

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Questions?

Thank You

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