

Breast Abstracting 101 2025 Training

Treatment

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ICR Video Training Series: Iowa Cancer Registry
February 2026

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Treatment Options

- Neoadjuvant vs. Adjuvant Therapy
- Surgery to primary site, regional LN, and/or distant sites
- Radiation Therapy
- Systemic Therapy
 - Chemo
 - Immunotherapy
 - Hormone Therapy
- Heme/Endocrine Procedures
- Clinical Trials



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NCCN Guidelines

- National Comprehensive Cancer Network – NCCN

- <https://www.nccn.org/guidelines/guidelines-detail?category=1&id=1419>
- Sign up for full access
- Guidelines for patients – no sign in required and layman’s terms on treatment options

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NCCN Guidelines

Firewall Policy

Treatment by Cancer Type

Detection, Prevention, and Risk Reduction

Supportive Care

Specific Populations

NCCN Guidelines Navigator

Guidelines for Patients

Guidelines With Evidence Blocks

Breast Cancer

Guidelines

NCCN Guidelines Version 5.2025

- 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

Guidelines Navigator

© NCCN Guidelines Navigator™ Version 5.2025

NEW! - Interactive Digital Guideline Tool

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Neoadjuvant vs. Adjuvant Therapy

- **Neoadjuvant Therapy** 

- Radiation or Systemic treatment administered prior to surgery in an attempt to shrink the tumor and/or destroy regional metastasis
- Given to improve outcomes

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- **Adjuvant Therapy**

- Additional treatment administered postoperatively
- Aids or contributes to therapy
 - Lowers risk of cancer recurrence

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Neoadjuvant Therapy

- **Neoadjuvant Therapy Coding** – SPCSM 2025, pages 237-247

- **Why neoadjuvant therapy?**

- 5
- Reduces the disease burden, which might allow for surgical resection for previously unresectable disease
 - Allow for less extensive surgical resection (organ preservation or function)
 - Eradicate or control undiscovered metastasis and improve outcomes for overall survival and disease-free survival
 - Provide prognostic information based on response
 - A clinical response is associated with length of disease-free survival and overall survival

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Neoadjuvant Therapy

- **Criteria for Neoadjuvant Therapy**

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- Physician's treatment plan and/or statement of patient completing neoadjuvant therapy must be used
 - Treatment follow the recommended treatment guidelines for the type and duration of treatment
 - Length of full course of neoadjuvant systemic therapy may vary depending on the primary site and/or histology, often lasts 4-6mo
 - A short course of treatment prior to surgery that doesn't fit the criteria of neoadjuvant therapy isn't considered as such
 - Treatment occurs as part of first course treatment
 - It may be given as part of a clinical trial

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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	Meets criteria of neoadjuvant therapy – codes 1 & 2 Limited systemic therapy and intent was not neoadjuvant or didn't meet definition of neoadjuvant – code 3
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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Appendix C: Breast

- **Appendix C 2025:**
<https://seer.cancer.gov/manuals/2025/appendixc.html>
- **Site-Specific Codes for Neoadjuvant Therapy Treatment Effect**

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- Breast
 - Specific coding for breast cancers that received neoadjuvant therapy
 - Based on primary tumor information only
 - From the pathology report

Breast

[Coding Guidelines: Breast](#) (PDF, 276 KB)

[Solid Tumor Rules: Breast](#) (PDF, 7.9 MB)

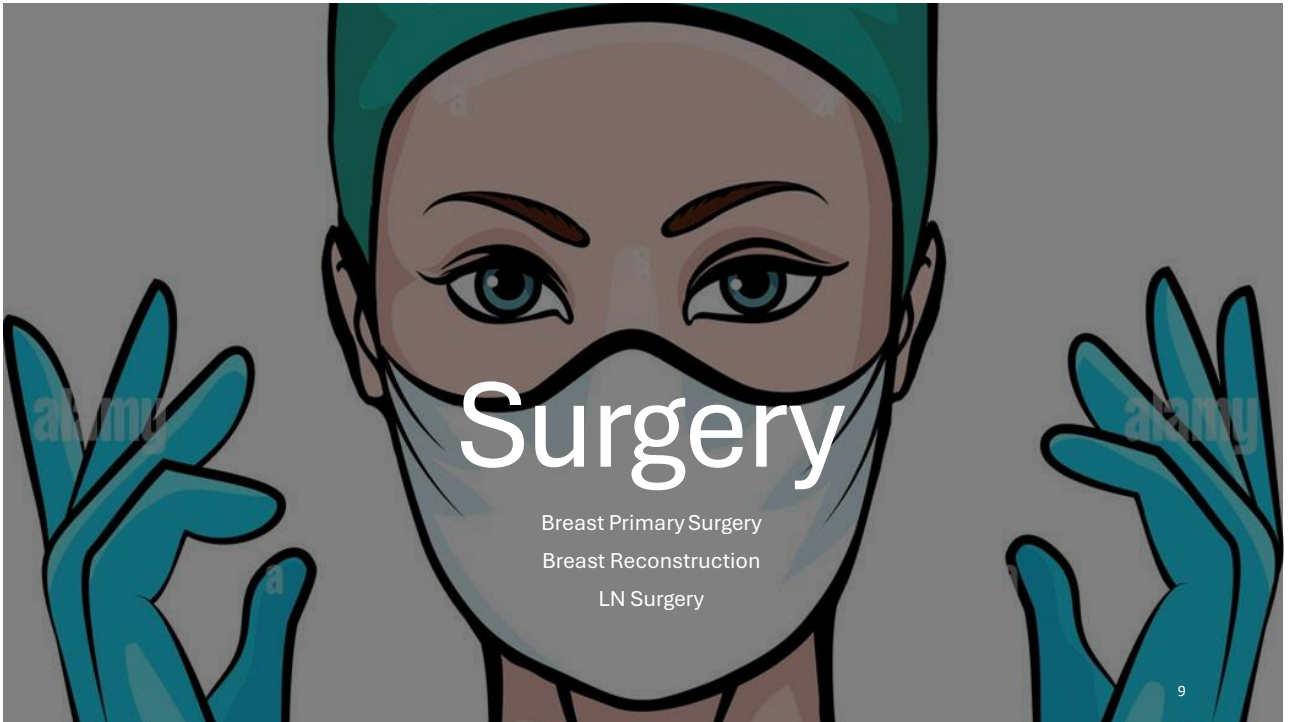
Surgery Codes

- [Breast - \(C500-C509\)](#) (PDF, 92 KB)

Site-Specific Codes for Neoadjuvant Therapy Treatment Effect

- [Breast](#) (PDF, 200 KB)
- [Thymus, Heart and Mediastinum, Retroperitoneum, Soft Tissue Abdomen and Thoracic, Soft Tissue Head and Neck, Soft Tissue Other, Soft Tissue Trunk and Extremities, GIST](#) (PDF, 203 KB) - Use these codes for sarcomas of the Breast

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Surgery of Primary Site 2023

- Describes a surgical procedure that removes and/or destroys tissue of the primary site as part of the initial diagnostic and staging workup or first course therapy (SPCSM 2025, pgs 181-183)
- **Primary Source Document**
 - Operative Report
 - Use the entire report not just the final procedure
 - Read the body of the report, surgeon's planned procedure, as well as what was performed
 - Were there sites involved that the surgeon did not resect or send to pathology
- **Surgery Codes – Appendix C**
 - <https://seer.cancer.gov/manuals/2025/appendixc.html>



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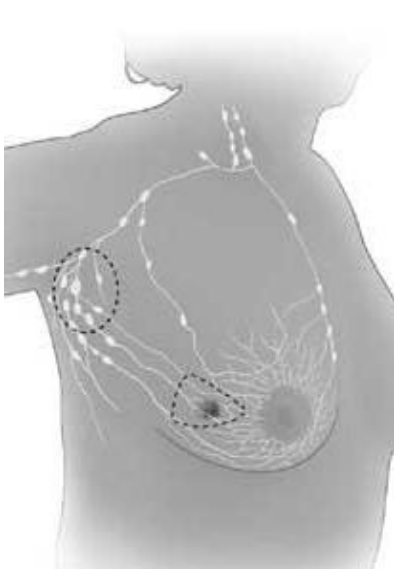
Surgery of Primary Site 2023

• Breast Conserving Surgery

- Lumpectomy
 - Surgery to remove a tumor (lump) and a small amount of normal tissue
- Partial Mastectomy
 - Surgery to remove part of the breast that has cancer and some normal tissue around it; segmental mastectomy
- “Sparing” Mastectomy
 - Skin-sparing mastectomy – preserves skin, but removes breast tissue and/or nipple-areola complex; often immediate reconstruction

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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

Notes:

If contralateral breast reveals a second primary, each breast is abstracted separately

Don't code reconstruction in this data item

These codes are for cases diagnosed 2024+

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Code	Description	Notes
B200	Partial Mastectomy; Less than total mastectomy; Lumpectomy	MUST have a positive previous biopsy (diagnosing cancer)
B210	Excisional breast biopsy	NO pre-operative biopsy; no prior biopsy
B215	Excisional breast biopsy for atypia	Previous biopsy showed <u>atypical ductal hyperplasia</u> (ADH)
B240	Re-excision of margins for residual disease	Previous excisional biopsy that had gross or microscopic residual disease at margins
B290	Central lumpectomy	Prior diagnosis of cancer; Removes <u>nipple areolar complex</u> (Paget disease or cancer involved nipple areolar complex)

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Breast: Surgery Codes

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Code	Description	Notes
B300	Skin-sparing Mastectomy <ul style="list-style-type: none"> B310 <u>WITHOUT</u> contralateral breast B320 <u>WITH</u> contralateral breast 	Removes all breast tissue & nipple areolar complex; Preserves breast skin; Goldilocks mastectomy (skin-sparing with reconstruction)
B400	Nipple-sparing Mastectomy <ul style="list-style-type: none"> B410 <u>WITHOUT</u> contralateral breast B420 <u>WITH</u> contralateral breast 	Removes all breast tissue; Preserves nipple areolar complex and breast skin
B500	Areolar-sparing Mastectomy <ul style="list-style-type: none"> B510 <u>WITHOUT</u> contralateral breast B520 <u>WITH</u> contralateral breast 	Removes all breast tissue and nipple; Preserves areola and breast skin

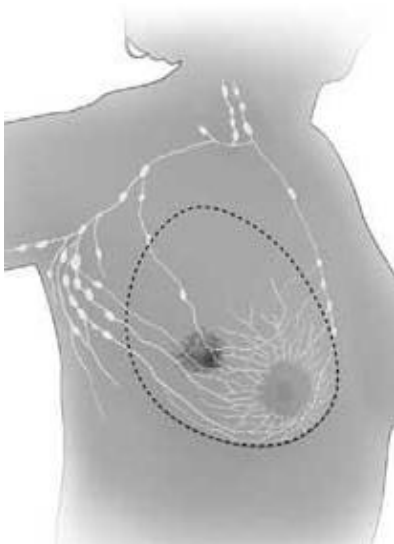
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Breast: Surgery Codes

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Code	Description	Notes
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; Modified Radical Mastectomy; With or Without SLN bx or ALND
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, and pectoralis muscle; WITH ALND Levels I-III
B760	Radical Bilateral Mastectomy for a single tumor	Bilateral inflammatory breast carcinoma
B800	Mastectomy NOS	Includes extended radical mastectomy

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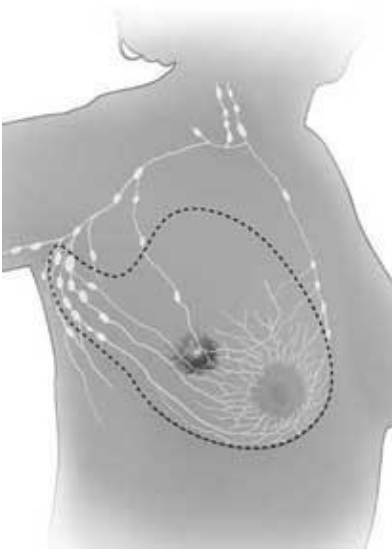


Total (simple) mastectomy

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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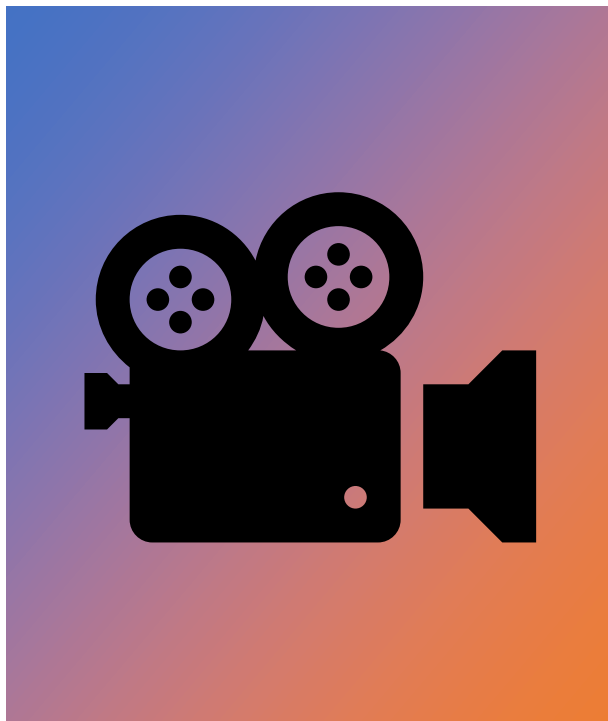


Modified Radical Mastectomy

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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Breast Reconstruction

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SPCSM 2025, pages 184-185

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Breast Reconstruction

-
- Describes the reconstruction procedure immediately following resection of the breast
 - During the **SAME** operative procedure as the Surgery Primary Site 2023
 - Reconstruction on a different day than primary site surgery is **NOT** collected in this data item
 - Ipsilateral breast reconstruction only
 - Cases diagnosed 2024+
 - Could have one surgeon or two (1 – primary tumor resection & 1 – plastic surgeon)
 - Breast reconstruction rebuilds the contour of the breast
 - Saline breast implants
 - Permanent implants
 - Muscle flap reconstruction
 - Own tissue/TRAM flaps/human tissue

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Breast Reconstruction Codes

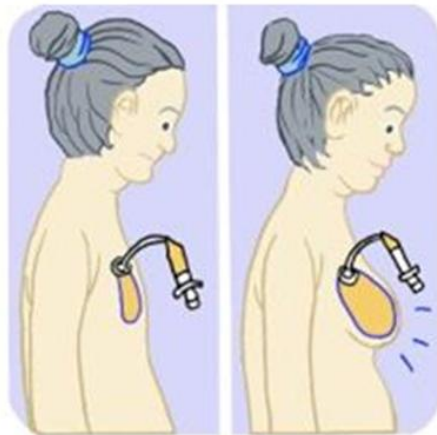
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Description	Notes	Code
No reconstruction	Reconstruction started but NOT completed	A000
Tissue expander placement	Tissue expander placed WITHOUT permanent implant or tissue placement; This is usually a 2-step process: 1. Tissue expander placed to stretch skin 2. Place permanent implant later	A100
Oncoplastic tissue rearrangement	Parenchymal flap or adjacent tissue transfer; Not a formal mastopexy/reduction – during lumpectomy	A300
Oncoplastic reduction and/or mastopexy	Breast reduction/lift with breast conserving resection	A400
Oncoplastic reconstruction with regular tissue flaps	Skin flaps with breast conserving resection	A500

May be in the op report or in a separate breast plastic surgery report

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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

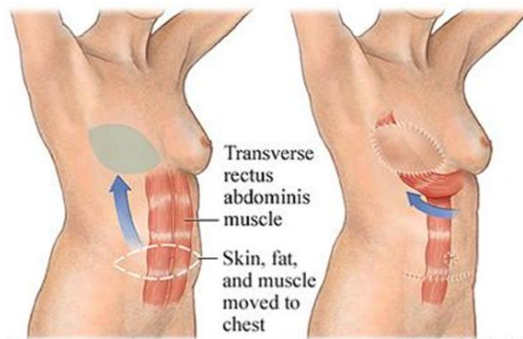
Description	Notes	Code
Mastectomy reconstruction with autologous tissue, source unknown	Tissue from patient but unknown site	A600
23 Mastectomy reconstruction w/ Abdominal tissue	Abdominal tissue from patient	A610
Mastectomy reconstruction w/ Thigh tissue	Thigh tissue from patient	A620
Mastectomy reconstruction w/ Gluteal tissue	Gluteal tissue from patient	A630
Mastectomy reconstruction w/ Back tissue	Back tissue from patient	A640
Reconstruction NOS	Reconstruction unknown type	A900
Implant reconstruction NOS	Implant placed unknown type	A970
Autologous tissue reconstruction NOS	Doesn't meet codes A600-A640	A980
Unknown if immediate reconstruction		A990

Patient's own tissue used for reconstruction following a mastectomy

NOS Codes
Try to avoid using these

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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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Lymph Node Surgery

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Scope of Regional LN Surgery
SLN Procedure
Regional LN

25

Sentinel LN Procedure

-
- **Sentinel LN**
 - First LN to which cancer cells are likely to spread from a primary tumor
 - Critical role in body's immune response by filtering lymph fluid, which contain white blood cells that help fight infections and diseases
 - These are regional lymph nodes
 - **Sentinel LN Data Items (Breast), *SPCSM 2025, pages 192-195***
 - Date of SLN Procedure/Biopsy
 - SLN Positive/Examined
 - **SLN Procedure/Biopsy**
 - Noted on op report
 - Look for dye and/or radio label injection
 - Excision of the SLN
 - "Targeted Axillary Dissection" – SLN procedure

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SLN Examined

-
- Document the **TOTAL** number of SLN sampled and submitted to pathology
 - There are times when non-SLN may be included in the specimen, these are counted as SLN
 - If a separate ALND is performed, don't include these nodes
 - Number of SLN examined should be equal to or less than regional nodes examined

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SLN Positive

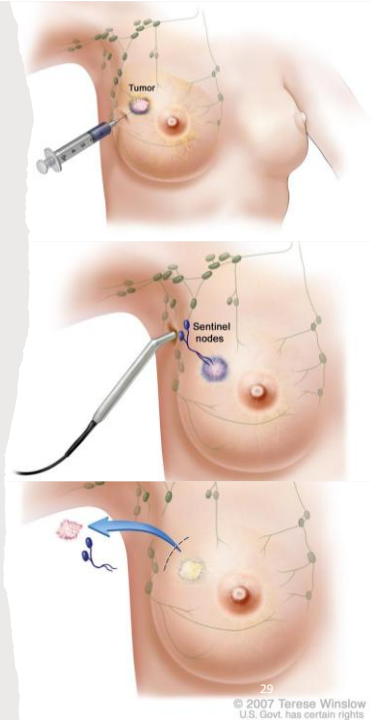
-
- Document the **TOTAL** number of SLN positive
 - Should be equal to or less than SLN examined
 - Should be equal to or less than Regional LN Positive
 - Breast cases **ONLY**:
 - Use **code 97**
 - SLN procedure and ALND at the **SAME** time and
 - Number of SLN positive can't be determined
 - ITCs only are not coded as positive SLN
 - Microscopic or micro mets are counted as positive

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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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Regional Lymph Node

- **Regional LN Data Items**, *SPCSM 2025*, pages 196-202
 - Date of Regional LND
 - Regional LN Positive/Examined
- **Date of Regional LND**
 - Date that axillary LN dissection (ALND) performed
 - NOT a SLN procedure/biopsy
 - Could be same operation as the SLN procedure or a different/separate date

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Regional LN Examined

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- Based on number of regional LN examined pathologically
 - Cumulative findings from all procedures that removed regional LN
 - This includes SLN procedure/biopsy and/or ALND
 - Don't count aspiration or core biopsy of a LN in the same LN chain removed at surgery as an additional involved node
 - If a node is aspirated or core biopsy of a different chain, then include in the count
- Special codes:
 - **95** – **ONLY** a needle aspiration/biopsy performed (no resection)
 - **96** – Sampling performed (limited number) but exact number unknown
 - **97** – Dissection performed but exact number unknown
 - **98** – Type of LND is unknown and number is unknown

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Regional LN Positive

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- Record **TOTAL** number of positive regional LN examined pathologically
 - True in situ cases cannot have positive LN, so the only allowable codes are negative
 - Regional LN Positive = 00 and Regional LN Examined = 98
 - Nodes positive are cumulative
 - Regional nodes involved from all procedures that remove LN during first course treatment
 - Includes SLN procedure and/or ALND
 - Do not count positive aspiration or core biopsy of a LN in the same chain removed during nodal resection
 - If in a different chain count as positive
 - ITCs are **NOT** counted as positive

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Regional LN Positive

- Special Codes:

- **95** – ONLY procedure is a needle biopsy/aspiration, **or** the only positive node is via aspiration/core biopsy
- **97** – Combination of positive aspirated, biopsied, sampled, or dissected LN when number of involved nodes can't be determined
- **98** – Clinical assessment only; No LN removed or pathologically examined

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Scope of Regional LN Surgery

- **Scope of Regional LN Surgery, *SPCSM 2025*, pages 188-191**

- Describes the removal, biopsy, or aspiration of regional LN during initial workup or first course therapy
- Additional instructions specific to breast primaries, pages 190-191

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- **Source document:**

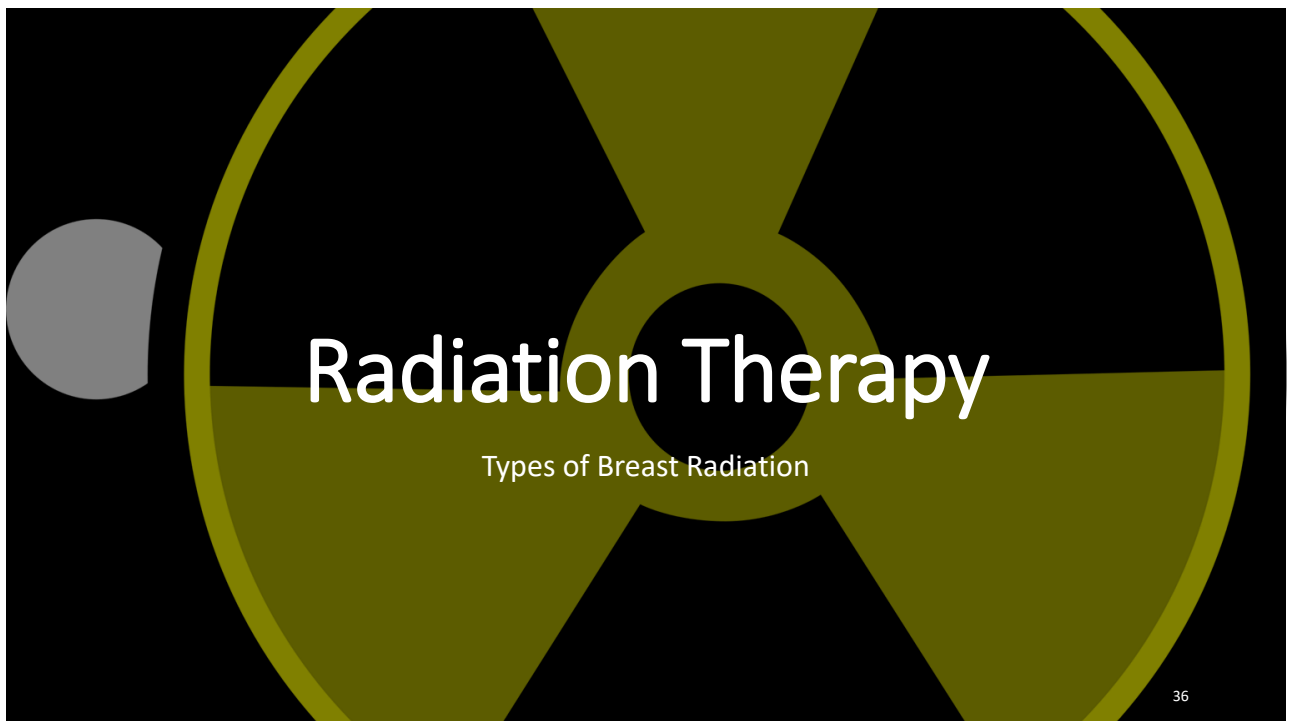
- Entire op report to determine was it a SLN procedure, ALND, or combination of both

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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 – review the op report to confirm whether an excisional biopsy or aspiration is performed; often it is a SLN procedure/biopsy	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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Radiation Therapy

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- **SEER** – Radiation Data Items (*SPCSM 2025*, pages 208-215)
 - Date Radiation Started
 - Radiation Treatment Modality – Phase I, II, III
 - Radiation External Beam Planning Technique – Phase I, II, III
 - Radiation Sequence with Surgery
 - Reason No Radiation
- **CoC** – Radiation Data Items (*STORE 2025*, pages 199-231)
 - Includes all those above for SEER plus the following:
 - Location of Radiation
 - Radiation Treatment Volume – Phase I, II, III
 - Radiation to Draining Lymph Nodes – Phase I, II, III
 - Dose per Fraction – Phase I, II, III
 - Number of Fractions – Phase I, II, III
 - Total Dose – Phase I, II, III
 - Number of Phases Radiation Treatment
 - Radiation Treatment Discontinued Early
 - Radiation Course Total Dose
 - Date Radiation Ended

This will be our focus
during this presentation

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Radiation Phases

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- A new phase begins when there is a change in:
 - Target Volume
 - Body site being radiated
 - Treatment Fraction Size
 - Treatment Technique



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Neoadjuvant Radiation

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- Based on cT and cN categories
 - Usually cT2-4 or N2 tumors
- Radiation administered prior to surgery
 - Not as common as neoadjuvant systemic therapy
 - Good long-term locoregional control

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Radiation Data Items

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- Date Radiation Started
 - Day of the first/earliest radiation treatment as first course treatment
- Radiation Treatment Modality (Phase I, II, III)
 - Reflects whether a treatment was external beam, brachytherapy, or radioisotope
 - Radioembolization code as radioisotope code 13
 - Most breast cases undergo Photon (02) or Electron (04) EBRT

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Radiation External Beam Technique

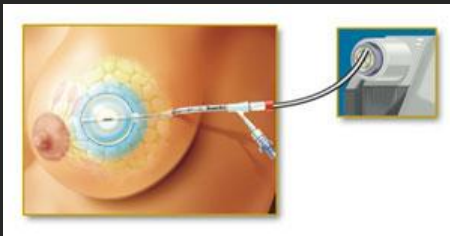
41

Code	Description	Notes
00	No radiation treatment	
01	External Beam, NOS	Known to be external beam, but unknown specific type
02	Low energy x-ray/photon	Electronic brachytherapy; Orthovoltage; Superficial therapy
03	2-D Therapy	Plain film x-rays to define location/size of treatment beam
04	Conformal or 3-D conformal	Uses multiple fixed beams shaped to conform to a defined target volume
05	IMRT	Intensity Modulated Radiation therapy; VMAT
06	Stereotactic radiotherapy	SBRT – stereotactic body radiotherapy; SABR; SRT
07	Robotic Radiosurgery	CyberKnife
08	Gamma Knife	Stereotactic radiotherapy using Cobalt-60 (usually brain)
09	CT guided online adaptive therapy	Treatment plan adapted over course of radiation to reflect changes in patient's tumor using CT scan
10	MR guided online adaptive therapy	Similar to code 09 but using an MRI
88	Not applicable	Not EBRT

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MammoSite

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www.mammosite.com

- Accelerated Partial Breast Irradiation [APBI]
- MammoSite® 5-Day Targeted Radiation Therapy
 - Placement
 - Treatment
 - Removal
- **Modality = 09**
 - Intracavitary brachytherapy, HDR
- **Planning Technique = 88**

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Intraoperative Radiotherapy (IORT)

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- 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, approximate 30 min
 - Remove device and suture breast

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Radiation Therapy Scenario

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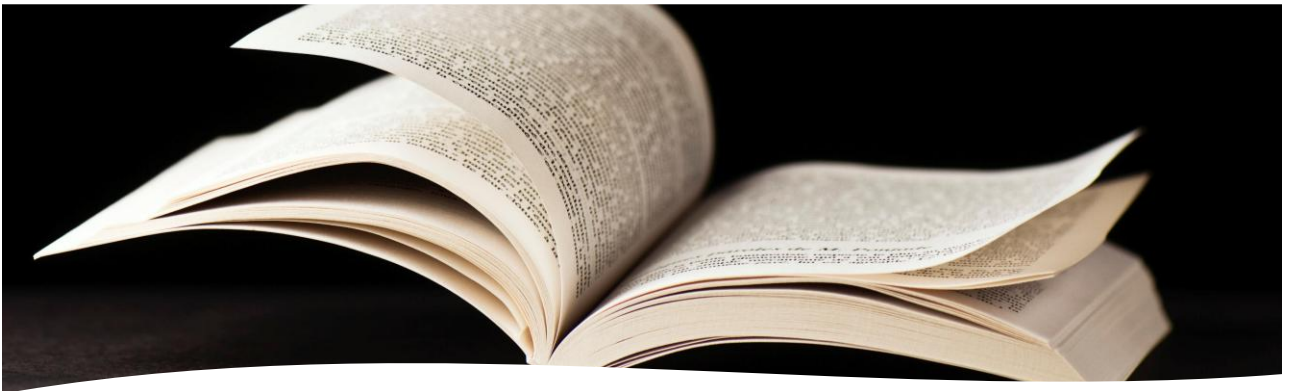
Segment	Description	Code
Summary	Rad/Surg Sequence	3
	Reason No Rad	0
	Location of Rad	1
	Date Started	11/14/23
	Date Ended	12/20/23
	Number of Phases	1
	Discontinued Early	01
	Course Total Dose	05000
Phase 1	Volume	42
	Rad to Nodes	04
	Modality	02
	Planning Technique	02
	Number of Fx	025
	Dose per Fx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

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>

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Radiation Resource

- **STORE 2025** – *Appendix R: The CTR Guide to Coding Radiation Therapy*
 - Pages 349-393
 - Case scenarios
 - Definitions/Notes

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Systemic Therapy

Chemotherapy
Hormone Therapy
Immunotherapy

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SEER*Rx

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SEER*Rx Interactive Antineoplastic Drugs Database

A drug administered to a patient for treatment, listed in SEER*Rx as a chemotherapeutic, hormonal or immunotherapy agent should be coded under chemotherapy (K1200), hormone therapy (K1400) or immunotherapy (K1410) regardless of the primary site(s) listed in SEER*Rx for that agent. Do not code under the data item, Other Therapy (NAACCR #1425). Refer to the 2025 SEER manual for more information.

Search Database Download

Drugs (288) Regimen (68) Show 25 Export

▲ Name	Category	Primary Site	Code?
131I-iodine	Radiation		See Remarks
1-Abiraterone acetate	Chemotherapy	CR	Yes
5-FU	Chemotherapy	Breast, gastric, head & neck, liver cancer	Yes
ARV 688	Chemotherapy	Ovary	Yes

• Treatment Tool

- Always look up a drug/treatment regimen for accurate coding
 - Provides you with the type of drug: chemo, hormone, immunotherapy, radiation
 - <https://seer.cancer.gov/seertools/seerrx/>

• Search by

- Drug name/partial drug name
 - At least 3 letters of the drug
- Regimen
 - Abbreviations: R-CHOP
- Primary Site and/or histology

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Chemotherapy

- Factors that play a role in determining chemotherapy
 - Stage of disease
 - Hormone and HER2 status
 - Triple negative is typically chemotherapy
 - Oncotype DX Score/Multigene Signature Test

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Common Chemotherapy

- Anthracyclines such as Doxorubicin (Adriamycin)
- Cyclophosphamides (Cytosan)
- 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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Coding Chemotherapy

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- Chemo, NOS – **code 01**
 - Unknown number of treatment agents
- Single Agent chemo – **code 02**
- Multi Agent chemo – **code 03**
- Chemo not given due to patient’s risk factors – **code 82**
- Chemo recommended but patient expired prior to it being administered – **code 85**
- Chemo recommended but not administered and the reason is unknown – **code 86**
- Patient or family declined recommended chemo – **code 87**
- Recommended but unknown is administered – **code 88**
 - Review these cases later to see if you can locate information on treatment and update abstract

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Hormone Therapy

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- Hormone receptor positive cancer for 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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Immunotherapy

• PD-1 Inhibitor

- Pembrolizumab (Keytruda)
 - Boosts immune response against breast cancer cells
 - Targets PD-1, protein on immune system T-cells
- 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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Immunotherapy

• HER2 Targeted Therapy

- Only for HER2+ patients
 - About 25% of breast cancer patients are HER2+
- Most often given with chemotherapy as a drug regimen
- May be used alone or with endocrine therapy
- Includes:
 - Herceptin, Perjeta, Kadcyca, Enhertu

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Targeted Therapies

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- **Kinase Inhibitors** – HER2 protein
 - Tykerb; Nerlynx; Tukysa = Chemotherapy
- **CDK4/6 inhibitors** – block cyclin-dependent kinases in hormone receptor + cancer
 - Ibrance; Kisqali; Verzenio = Chemotherapy
- **mTor inhibitors** – blocks protein that helps cells grow & divide
 - Afinitor = Chemotherapy
- **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 = Chemotherapy
 - 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 = Immunotherapy
 - Triple negative breast cancer

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Bone Targeted Therapy

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- 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
 - Code as immunotherapy only for giant cell tumors of the bone

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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

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- 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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Questions?

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