

# BREAST

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## Site-Specific Coding Guidelines



# Breast Cancer

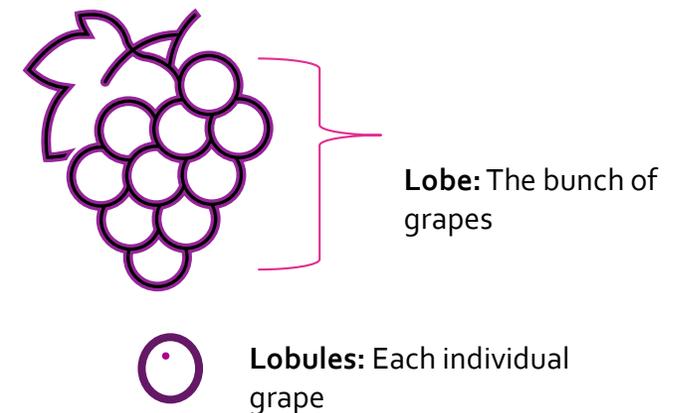
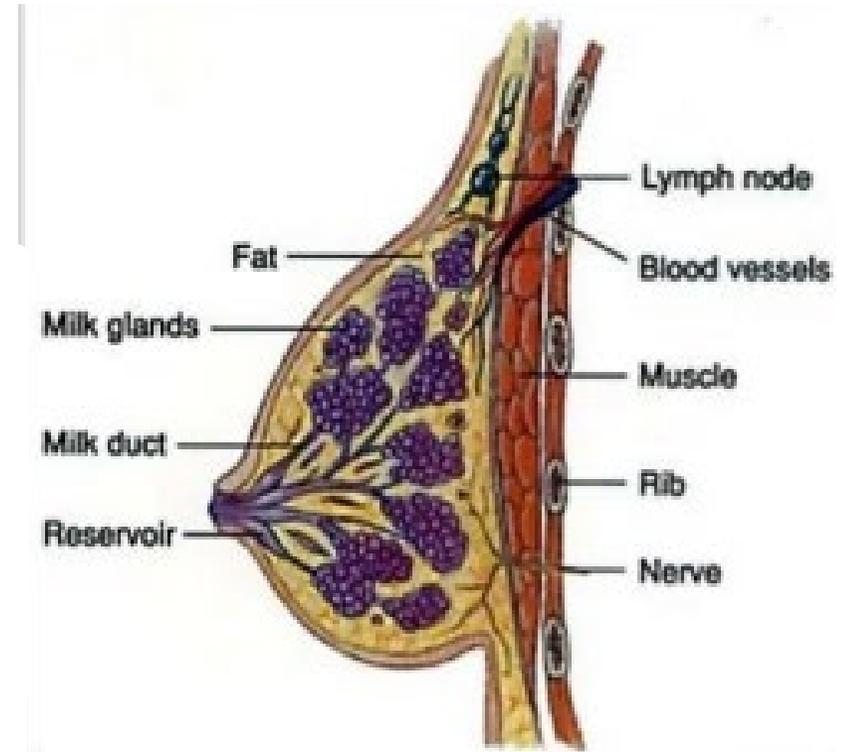
## Signs and Symptoms

- A breast lump
- Thickening of tissue
- Change in the size, shape or appearance of a breast
- Changes to the skin over the breast, such as dimpling
- Inverted nipple
- Peeling, scaling, crusting or flaking of the pigmented area of skin surrounding the nipple (areola) or breast skin
- Redness or pitting of the skin over your breast, like the skin of an orange



# Breast Anatomy

- Ligaments attach the breasts to the chest wall on either side of the breastbone
- They rest on the major chest muscle, the pectoralis major
- The breasts have no muscle tissue
- There is a circle of 15-20 lobes located in each breast
  - Each lobe is made-up of many lobules
- At the end of the lobules are tiny bulb like glands, or sacs
  - These sacs produce milk in response to hormonal signals
- The lobes, lobules, and glands are connected to ducts
  - These ducts deliver milk to openings in the nipples
- A layer of fat surrounds the glands and ducts and extends throughout the breast
  - This fat is what gives the breasts their shape and size
- The areola is the darker-pigmented area around the nipple



# Diagnostic Procedures

## Physical Exam

- Breast Exam

## Imaging

- Mammogram
- Ultrasound
- CT
- MRI

## Tumor Markers

- ER
- PR
- HER<sub>2</sub>

## Pathology

- Incisional Biopsy
- Lumpectomy



# Breast Hormones

- The breast is responsive to a complex interplay of hormones that cause the tissue to develop, enlarge and produce milk
- The three major hormones affecting the breast are:
  - Estrogen
  - Progesterone
  - Prolactin
- These hormones cause the glandular tissue in the breast and the uterus to change during the menstrual cycle



# PRIMARY SITE

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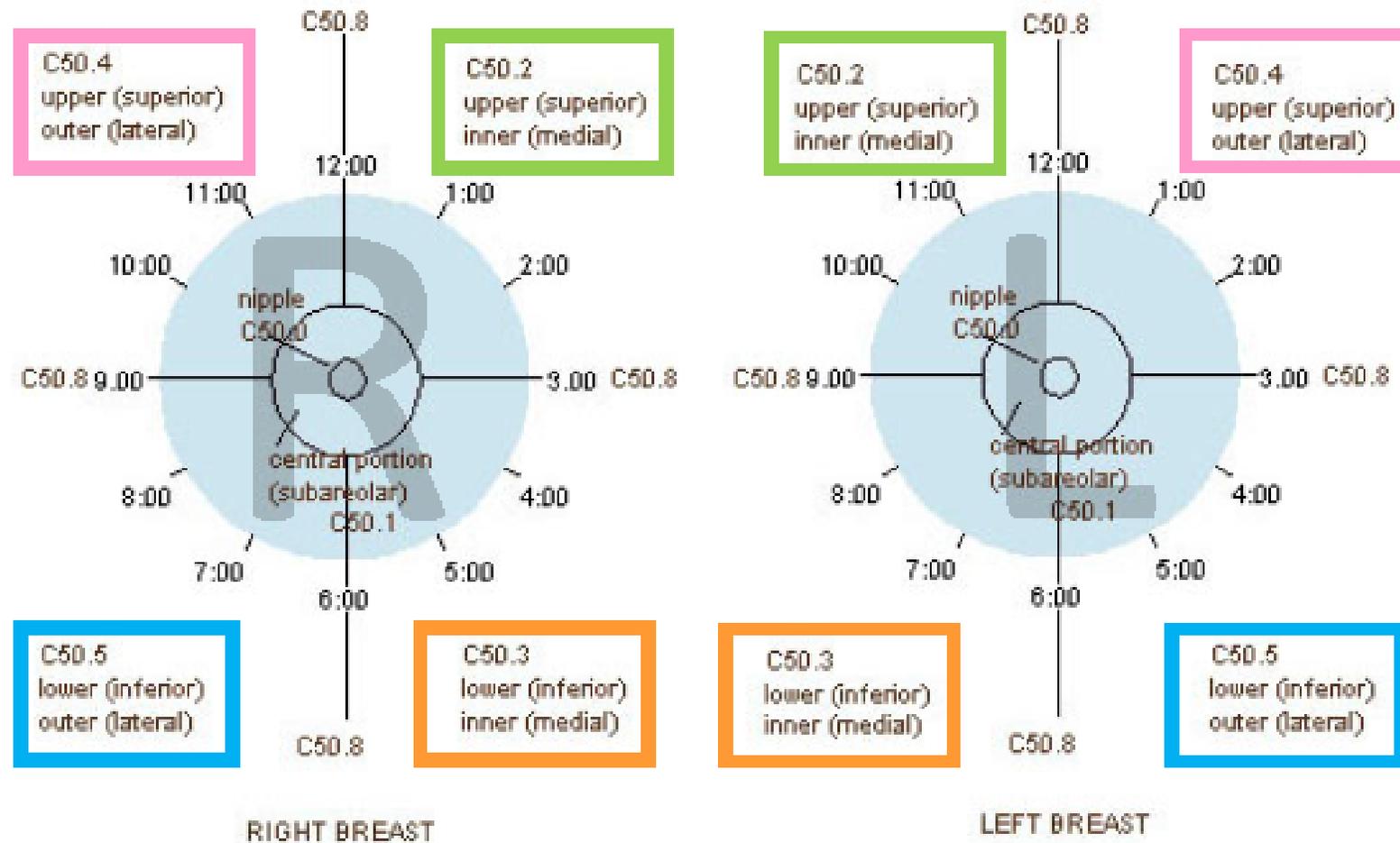


# Primary Site ICD-o-3 Topography Codes

Code	Description
C50.0	Nipple
C50.1	Central portion of breast
C50.2	Upper-inner quadrant of breast
C50.3	Lower-inner quadrant of breast
C50.4	Upper-outer quadrant of breast
C50.5	Lower-outer quadrant of breast
C50.6	Axillary tail
C50.8	Overlapping lesion of breast
C50.9	Breast, NOS



## "Clock" Positions, Quadrants and ICD-O Codes of the Breast



**Note:** C50.6 is the code for axillary tail or tail of breast.



# Lymph Nodes

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# Lymph Nodes

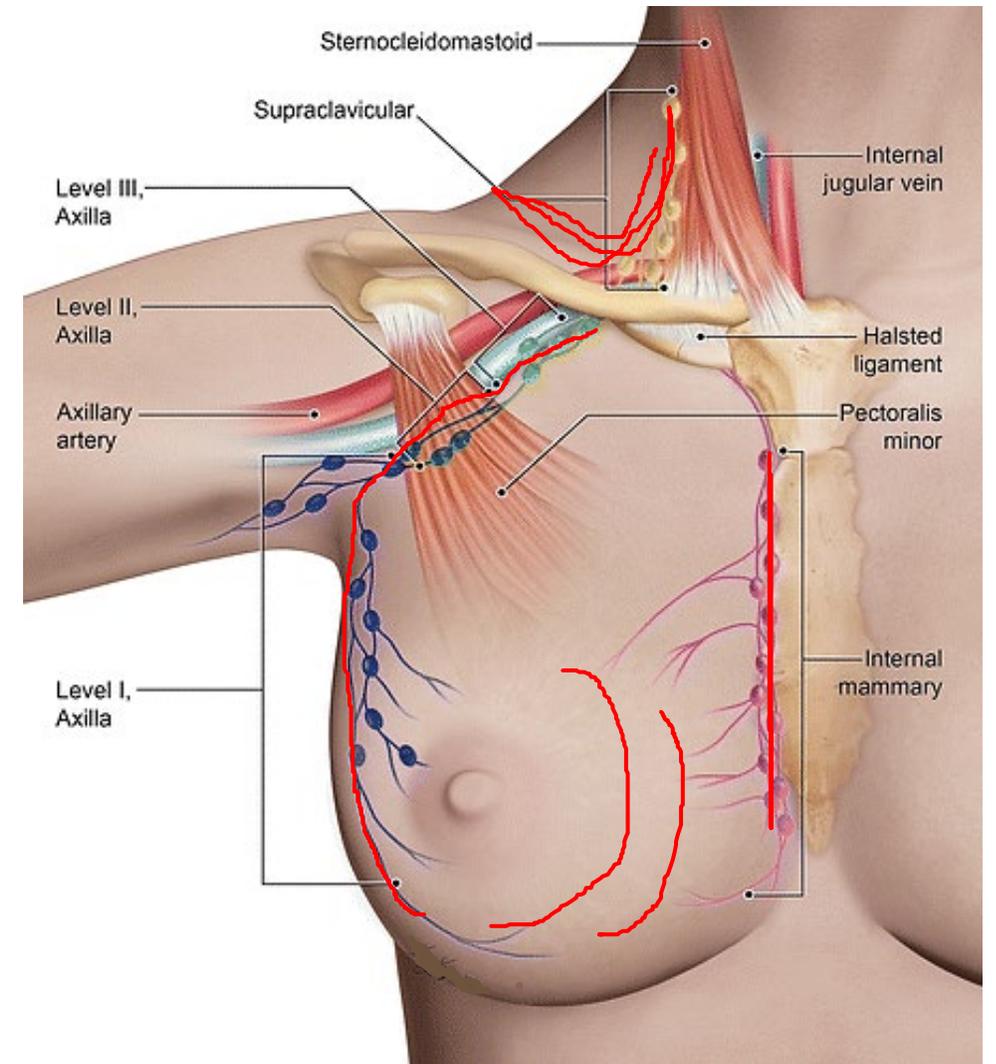
- The lymph nodes are one of the first places breast cancer can spread to and start growing
- About 30% of all patients diagnosed with invasive breast cancer are found to have cancer in their lymph nodes
- The lymph system is comprised of three elements:
  - The lymph is a clear fluid that circulates through the lymphatic system
  - Lymphatic vessels, that carry the lymph
  - Lymph nodes



## Regional Nodes for the Breast are:

- Level I, II, and III Axillary Nodes
- Intramammary Nodes
- Internal Mammary Nodes
- Supraclavicular Nodes\*

\*AJCC considers supraclavicular as regional however...  
SEER considers them distant lymph nodes



# METASTASES

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# Common Metastatic Sites

## Lymphatic Spread:

- Distant lymph nodes
  - Supraclavicular\*
  - Cervical
  - Contralateral internal mammary
  - Occasionally contralateral axillary

\*AJCC considers supraclavicular as regional however...  
SEER considers them distant lymph nodes

## Distant Organs/Structures:

- Usually, Hematogenous spread
  - Bone
  - Liver
  - Brain



# HISTOLOGY

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# Histology

- Ductal (8500)
- Medullary (8510)
- Mucinous (8480)
- Lobular (8520)
- Tubular (8211)
- Inflammatory (8530)
- Paget Disease (8540)

**Not an exclusive list**

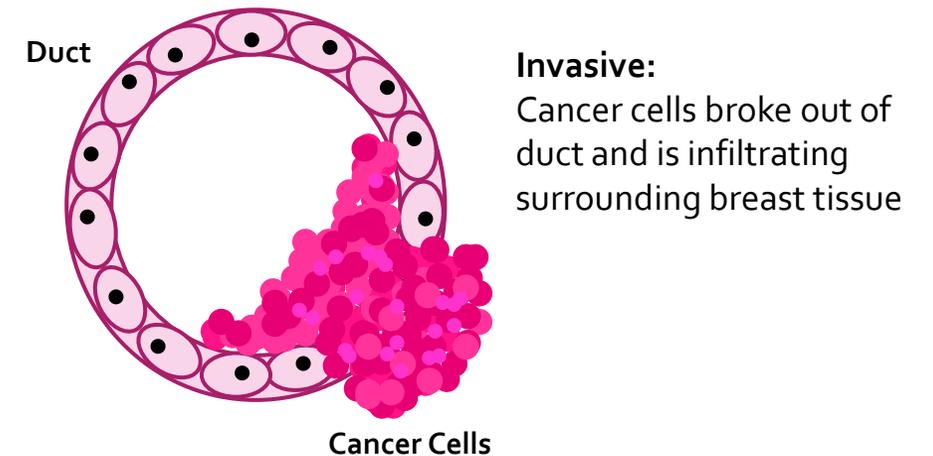
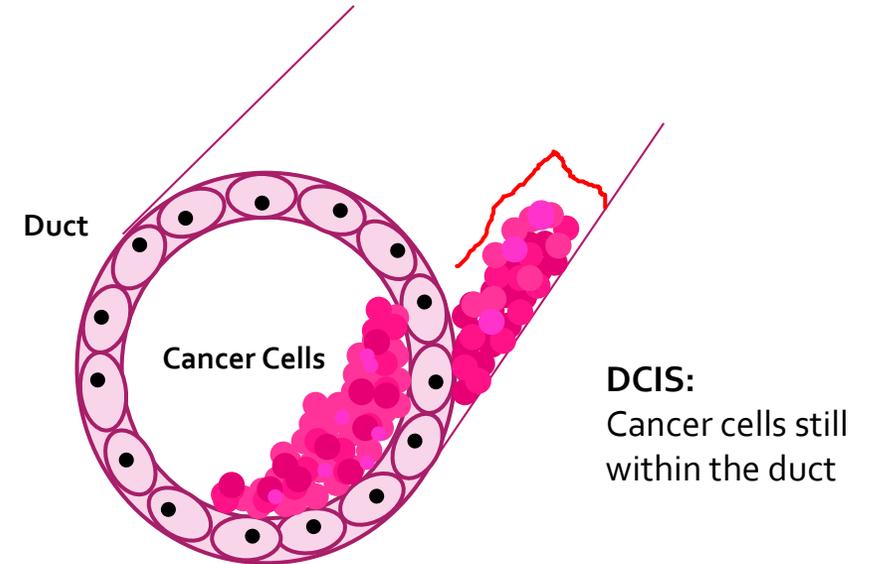
## Common Mixed Histologies

- Infiltrating duct and lobular carcinoma (8522)
- Invasive carcinoma NST/duct mixed with other types of invasive carcinoma (8523)



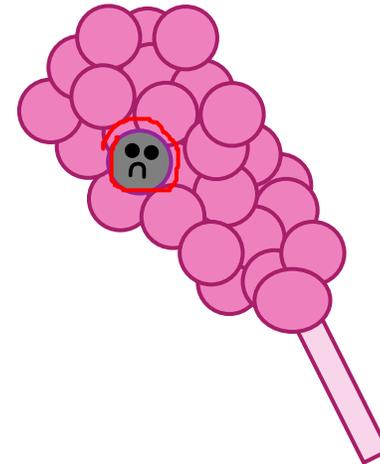
# Ductal Carcinoma (DCIS)

- Most common histology
  - 70-80% of all breast cancer cases
- Cancer starts in a duct within the breast
- Can spread along ductal walls while still remaining insitu
- Cancer cells break through walls of duct and invades surrounding breast tissue



# Lobular Carcinoma

Invasive lobular carcinoma is a type of breast cancer that begins in the milk-producing glands (lobules) of the breast



# Lobular Carcinoma In Situ (LCIS)

- Is benign and has been removed from AJCC staging
  - Reportable
  - LCIS is not as common as DCIS
  - Abnormal cells form in the milk glands (lobules)
  - Usually doesn't show up on screening mammograms
  - Most often discovered as a result of a breast biopsy done for another reason, such as a suspicious breast lump or an abnormal mammogram
  - Patient with LCIS have an increased risk of developing invasive breast cancer in either breast
  - Increased breast screening is recommended
  - Initiate preventative medical treatments to reduce risk of developing invasive breast cancer
- PLCIS (Pleomorphic Lobular Carcinoma In Situ)
    - Can be detected on screening mammograms
    - PLCIS carries a greater risk of developing invasive breast cancer
    - Surgery recommended
      - Lumpectomy
      - Mastectomy
      - Prophylactic mastectomy
      - Adjuvant radiation



# SOLID TUMOR RULES

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# Solid Tumor Rules

- Solid Tumor Manual
  - Cases diagnoses 2018+
- Multiple Primary & Histology Manual
  - Cases diagnosed prior to 2018



## InSitu Tumors

- Subtypes/variant, architecture, pattern, and features ARE NOT CODED
- The majority of in situ tumors will be coded to DCIS 8500/2

## Invasive Tumors

- The invasive subtype/variant is coded ONLY when it comprises greater than 90% of the tumor
- Rare histologies may not be listed in the table
- When a histology term is not found, reference ICD-O and all updates
- Submit a question to Ask a SEER Registrar when the histology is not found in Table 3, ICD-O or all updates.



## Two histologies within a single tumor will be either:

- A NOS and a subtype/variant of that NOS
- Different histologies (different rows in Table 3 OR different subtypes in Table 3 Column 3 OR a combination code from Table 2 and a code from Table 3)



## A NOS and a subtype/variant of that NOS

- Code the subtype/variant (specific histology) ONLY when documented to be greater than 90% of the tumor
- When a histology is listed as “minimal”, “focus/foci/focal”, “microscopic”, you can assume the other histological portion comprises greater than 90% of the tumor
- Code the NOS/NST when the subtype/variant is documented to be less than or equal to 90% of the tumor OR the percentage of subtype/variant is unknown/not documented
- Code the histology which comprises the majority of tumor



Different histologies (different rows in Table 3 OR different subtypes in Table 3 Column 3 OR a combination code from Table 2 and a code from Table 3)

- Code the histology which comprises the majority of tumor
  - This instruction does not apply to:
    - Invasive carcinoma NST/ductal and lobular carcinoma (use the combination code 8522/3).
    - Mucinous carcinoma and a different histology
    - Metaplastic carcinoma, NOS and subtypes/variants and invasive carcinoma, NST
- The following terms do not describe the majority of tumor

Architecture	Pattern(s)
Component	Subtype
Differentiation*	Type
Features (of)*	Variant
Foci; focus, focal	

- Code a combination code using Table 2 in the Equivalent Terms and Definitions when the majority is unknown/not documented
- Follow the rules of ambiguous terminology



# GRADE

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# Nottingham

- All invasive breast carcinomas should be assigned a histologic grade
- The Nottingham combined histologic grade (Nottingham modification of the SBR grading system) is recommended.
- The grade for a tumor is determined by assessing morphologic features:
  - **Tubule formation**
  - **Nuclear pleomorphism**
  - **Mitotic count**
    - Values range from 1 (favorable) to 3 (unfavorable) for each feature



- Total the scores for all three categories
  - **Grade 1:** A combined score of 3–5 points
  - **Grade 2:** A combined score of 6–7
  - **Grade 3:** Combined score of 8–9 points

Do not calculate the score unless all three components are available



# Grade

## Grade Manual

Table 12

Code	Grade Description
1	G1: Low combined histologic grade (favorable), SBR score of 3–5 points Stated as Nottingham/Scarff Bloom-Richardson Grade 1
2	G2: Intermediate combined histologic grade (moderately favorable); SBR score of 6–7 points Stated as Nottingham/Scarff Bloom-Richardson Grade 2
3	G3: High combined histologic grade (unfavorable); SBR score of 8–9 points Stated as Nottingham/Scarff Bloom-Richardson Grade 3
L	Nuclear Grade I (Low) (in situ only)
M	Nuclear Grade II (interMediate) (in situ only)
H	Nuclear Grade III (High) (in situ only)
A	Well differentiated
B	Moderately differentiated
C	Poorly differentiated
D	Undifferentiated, anaplastic
9	Grade cannot be assessed (GX); Unknown

AJCC Preferred Grade  
Invasive Tumors

Insitu Tumors Only

Generic coding

When assigned you cannot use to  
assign AJCC Stage



# SENTINEL NODE BIOPSY



# Sentinel Nodes

The sentinel lymph nodes are defined as the first lymph nodes to which cancer cells are most likely to spread from a primary tumor

- When breast cancer cells are multiplying, they can enter the lymphatic vessels located in breast tissue
- If cancer travels to the lymph nodes, these cells typically go to the axillary lymph nodes under the arm on the same side as the breast cancer
- These cells usually lodge in the first 1, 2, or 3 lymph nodes, known as **“Sentinel Nodes”**



# Sentinel Lymph Node Biopsy

- Research suggests that cancer typically spreads to the sentinel nodes before the other 10 to 20 axillary nodes under the arm
- If the sentinel nodes removed are negative, this is a good indication that the cancer has not spread to the lymph nodes and an axillary dissection can be avoided
- Axillary dissections remove all the axillary nodes on the same side as the cancer
  - An axillary dissection is more invasive
  - Removal of all axillary nodes leaves the patient at a higher risk of experiencing loss of feeling in the arm and arm pit
  - The patient can also develop lymphedema, a serious complication that causes the arm to swell due to the abnormal accumulation of protein-rich edema fluid in the upper extremity following axillary lymph node dissection
  - Being able to avoid an axillary dissection will result in a better quality of life for the patient

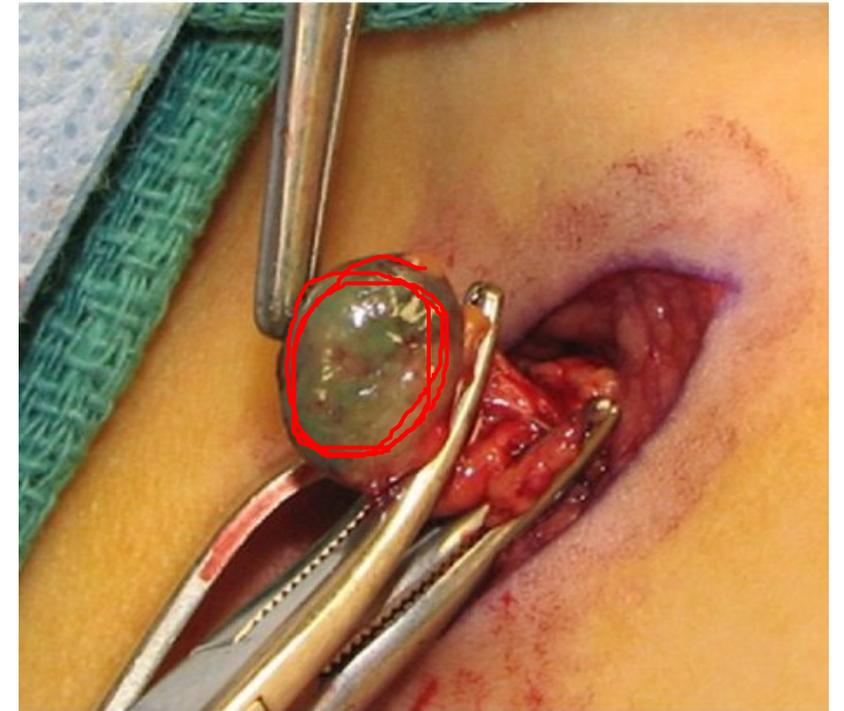
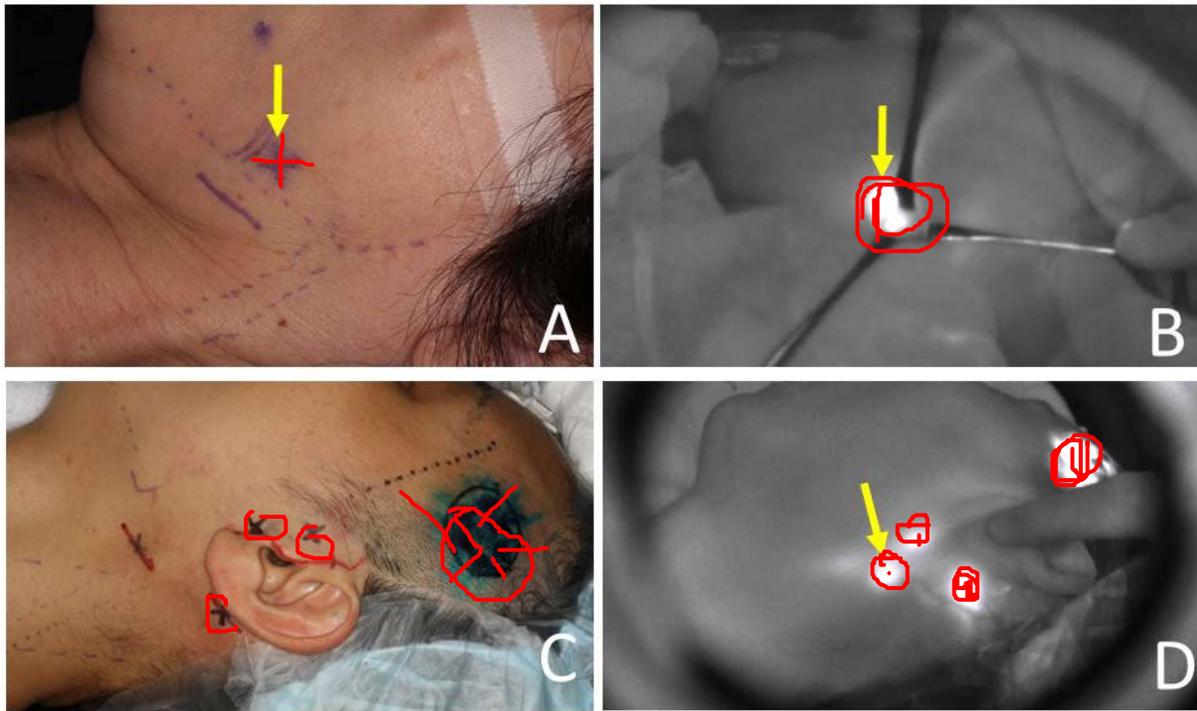


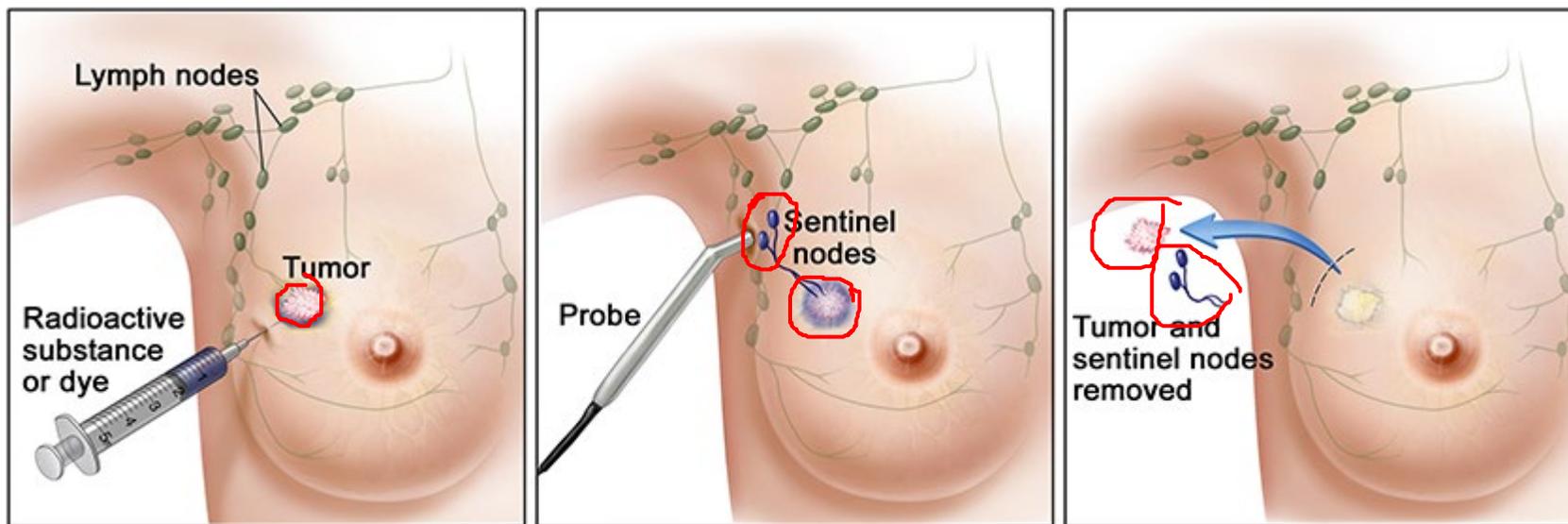
# Sentinel Lymph Node Biopsy

- For sentinel biopsies, review the operative report to confirm if it describes procedure using injection of a dye, radio label or a combination to identify a lymph node
- The operative report states that a sentinel lymph node biopsy was performed
- When a sentinel biopsy is performed additional non-sentinel nodes can be taken during the same procedure, These additional lymph nodes will be palpably abnormal and selectively removed and will not be referred to regional lymph node dissection
- To code regional lymph node biopsy along with sentinel lymph node biopsy it must be stated in the operative report that a regional lymph node procedure was done along with the sentinel biopsy or at a separate surgical procedure
- Though referred to as a “biopsy”, the lymph nodes are removed in its entirety



# Sentinel Lymph Node Procedure





# Sentinel Lymph Nodes Examined

## [834]

- Record the total number of nodes biopsied/sampled during the sentinel node biopsy
- Document the total number of nodes sampled/biopsied during the sentinel node procedure in this data item when both sentinel and non-sentinel nodes are sampled during the sentinel node biopsy procedure
- Do not count any nodes that were previously examined through FNA or core biopsies
  - Code 95: If the only sentinel nodes examined were through an aspiration

**Important:** All sentinel nodes are regional nodes but....

Not all regional nodes are sentinel nodes



## Sentinel Node Biopsy and Lymph Node Dissection

### Two separate surgeries/procedures (two anesthesia):

- If a sentinel node biopsy procedure and then a subsequent separate regional node dissection procedure are performed record the total number of nodes biopsied during the sentinel node procedure
- If, during a sentinel node biopsy procedure, a few non-sentinel nodes happen to be sampled, document the total number of nodes sampled during the sentinel node procedure in this data item

### Same Surgery/procedure (one anesthesia):

Record only the number of sentinel lymph nodes biopsied in this data field

and

Record the total number regional lymph nodes biopsied/dissected (both sentinel and regional) in **Regional Lymph Nodes Examined [830]**



# Sentinel Lymph Nodes Positive

## [835]

### Two separate surgeries/procedures (two anesthesia):

- If a sentinel node biopsy procedure and then a subsequent separate regional node dissection procedure are performed
  - **Record the total number of positive nodes during the sentinel node procedure**
- If, during a sentinel node biopsy procedure, a few non-sentinel nodes happen to be sampled, document the total number of positive nodes found during the sentinel node procedure in this data item
  - Code 95: If the only sentinel nodes positive were though an aspiration

### Same surgery/procedure (one anesthesia):

**Code 97:** If a sentinel lymph node biopsy is performed during the same procedure as the regional node dissection,

**and**

Record the total number of positive regional lymph nodes biopsied/dissected (both sentinel and regional) in Regional Nodes Positive (NAACCR Item #820) when a sentinel lymph node biopsy is performed during the same procedure as the regional node dissection



# Date of Sentinel Lymph Biopsy

- This data item documents the date of sentinel node biopsy.
- Do not record the date of lymph node aspiration or core biopsy
- Record the date of the sentinel lymph node biopsy in this data item and record the date the subsequent regional node dissection was performed in the Date of Regional Lymph Node Dissection data item [NAACCR Item #682] when both a sentinel node biopsy procedure and a subsequent regional node dissection procedure are performed
- Record the date of the procedure in both this data item and in the Date of Regional Lymph Node Dissection [NAACCR Item #632] when a sentinel lymph node biopsy is performed in the same procedure as the regional node dissection. The dates should be the same
- Leave this date blank when sentinel lymph node biopsy was attempted, but unsuccessful (e.g. failed to map)



# AJCC STAGE

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- For clinical staging to apply, there must be a suspicion of cancer
  - Most of the time bilateral ultrasounds will be preformed
    - If cancer found in contralateral breast during contralateral mastectomy, it there was no suspicion of cancer within the contralateral breast, clinical stage will be left blank
- For pathologic staging to apply you must meet one of the following criteria:
  - Surgical resection per AJCC Breast chapter.
  - Biopsy of highest T category PLUS biopsy of highest N category. (microscopically proven)
  - Positive histologic confirmation of a metastatic site. (M1 proven).
  - For post therapy staging to apply you must have systemic and/or radiation therapy followed by surgery

# T Category

- T is based on tumor size and invasion
- T<sub>1</sub> – T<sub>3</sub>:
  - Based on size
    - T<sub>1</sub> assigned subcategories
      - Subcategories give more specific descriptions of the size of the primary tumor
- T<sub>4</sub>: Based on invasion
  - Subcategories describe type of invasion and/or involvement
    - Invasion into the chest wall
    - Skin involvement
    - Inflammatory carcinoma



## In situ

For purely in situ cancers, no lymph nodes need to be removed to stage pathologically

**Clinical Stage Group:** cTis, cNo, cMo = Stage 0

**Pathological Stage Group:** pTis, cNo, cMo = Stage 0



## N Category

Classification divided between clinical stage and pathological stage  
Clinical and Pathological stage uses different assessment and coding tables

### Clinical assessment bases on:

- Fixed or matted
- Nodal chain(s) involved

### Pathological assessment based on:

- Size of metastases
- Nodal chain(s) involved
- Number of lymph nodes involved
- Clinically positive
- Pathologically positive
- Sentinel lymph node exam



## M Category

- Classification divided between clinical and pathological assessment
- Size of distant lymph node metastasis
- Clinical and Pathological Stage
- When metastases are pathologically confirmed (pM)
  - Can be staged with any T and any N (clinical or pathological)
    - cT, cN, pM
    - cT, cN, pM



## Stage Group

- Separated between Clinical and Pathological
- **NO NOT** use the Anatomic Stage Group Table
  - Anatomic Stage Group is for regions/countries without biomarker tests

## Genomic Profile for Pathological Prognostic Staging

- When oncoTYPE DX Score is less than 11:
  - Use Stage Table on page 632



# TREATMENT

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# Radiation

## Following Surgery:

There are times when radiation therapy is used postoperatively

- When the tumor is larger than 2 centimeters
- Cancer is found in the lymph nodes
- Tumor is close to the rib cage or chest wall muscles

A lumpectomy is usually followed by radiation therapy

- Radiation can be aimed at the tumor bed and/or whole breast
  - When aimed at tumor bed, this is generally referred to as a BOOST
- If surgical margins are positive, you can expect whole breast radiation as well as draining lymph nodes
- Intraoperative radiation can be given directly to the tumor bed following lumpectomy



## Neoadjuvant:

- Radiation therapy may also be used to shrink tumors before surgery
  - Radiation therapy alone or in combination with chemotherapy can be used preoperatively or in lieu of surgery to destroy cancer cells and shrink tumors
- Make larger tumors more manageable to remove
- Remove less breast tissue
  - Tumor is close to the skin and wanting preform skin sparing mastectomy
  - Avoid removal of additional tissue (muscle)

## Treatment Volumes:

**Partial Breast:** After lumpectomy, BOOST, tumor bed

**Whole Breast:** Whole breast, partial mastectomy, when breast tissue remains

**Chest Wall :** Radical mastectomy, no breast tissue remains



# Systemic Treatment

- Bi-lateral breast carcinomas:
- Each breast is its own primary
- Code any systemic treatment administered within both abstracts
- It is understood that though it might be given for treatment for the most aggressive tumor, the other breast will benefit from the treatment as well

# Chemotherapy

- When a tumor is large, identified as aggressive, and/or involves the lymph nodes, some form of systemic adjuvant treatment,
- Usually administered postoperatively following surgery to destroy cancer cells that may have escaped into the lymph and blood vessels, thereby reducing the likelihood of a recurrence
- Studies have shown that a combination of chemotherapy drugs is more effective than a single agent
- The decision of when to begin chemotherapy and how long treatment should last is very individualized and may vary from one doctor to another
- Some combinations may be given in cycles lasting only two to six months; others are given for a year or more.



# Hormone Therapy

- Hormonal therapy is used to prevent the growth, spread, or recurrence of breast cancer
- A pathology test on a sample of tumor tissue will reveal if the cancer has estrogen and progesterone receptors
  - If it has receptors, it is said to be receptor positive
- When a tumor is said to be estrogen-positive or progesterone-positive, it means the tumor depends on the patient's natural hormones to grow
- Anti-estrogen therapy, can be given to block the receptor and prevent growth of cancer



# Immunotherapy

- A strong immune system detects the difference between healthy cells and cancer cells
- The immune system can be strengthened and improved by new immunotherapies
- These treatments are designed to repair, stimulate, or increase the body's natural ability to fight infections and cancer
- Used to reduce the chance of recurrence in patients who have an overexpression of HER2/neu
- Bone marrow transplantation is occasionally recommended for Stage IV breast cancer patients.



# Systemic Drugs

- **Drugs Commonly Used for Treating Breast Cancer**
- Combination Chemotherapy (some combinations include hormones)CMF (cytoxan, methotrexate, 5-FU)
- CMFP (cytoxan, methotrexate, 5-FU, prednisone)
- CAF (cytoxan, adriamycin, 5-FU) (also called FAC)
- CA +/- tamoxifen (cytoxan, adriamycin, tamoxifen) (also called AC +/- tamoxifen)
- CMFVP (cytoxan, methotrexate, 5-FU, vincristine, prednisone)
- PAF (L-pam/melphalan, adriamycin, 5-FU)
- L-pam and 5-FU
- Docetaxel (taxotere)
- Paclitaxel (taxol)



# SURGERY CODES

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What Goes In and What Comes Out



**00** None; no surgery of primary site; autopsy ONLY

**19** Local tumor destruction, NOS

**No specimen was sent to pathology for surgical events coded 19 (principally for cases diagnosed prior to January 1, 2003)**

**20** Partial mastectomy, **NOS**; less than total mastectomy, **NOS**

**21** Partial mastectomy WITH nipple resection

**22** Lumpectomy or excisional biopsy

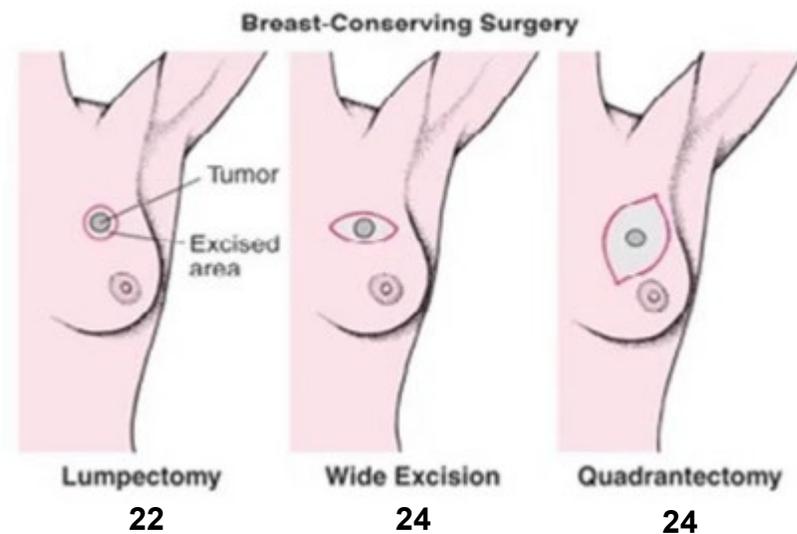
**23** Reexcision of the biopsy site for gross or microscopic residual disease

**24** Segmental mastectomy (including wedge resection, quadrantectomy, tylectomy)

**Procedures coded 20–24 remove the gross primary tumor and some of the breast tissue (breast-conserving or preserving surgery). There may be microscopic residual tumor**

**[SEER Note: When a patient has a procedure coded to 20-24 (e.g., lumpectomy) with reconstruction, code only the procedure (e.g., lumpectomy, code 22) as the surgery.]**

**[SEER Note: Assign code 22 when a patient has a lumpectomy and an additional margin excision during the same procedure. According to the Commission on Cancer, re-excision of the margins intraoperatively during same surgical event does not require additional resources; it is still 22. Subsequent re-excision of lumpectomy margins during separate surgical event requires additional resources: anesthesia, op room, and surgical staff; it qualifies for code 23.]**

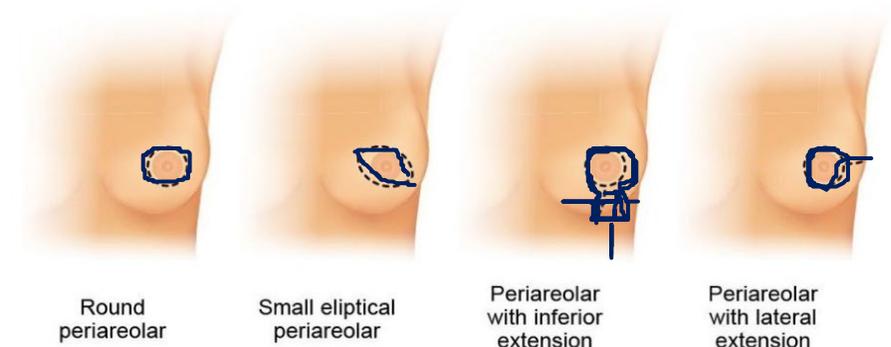


### 30 Subcutaneous mastectomy

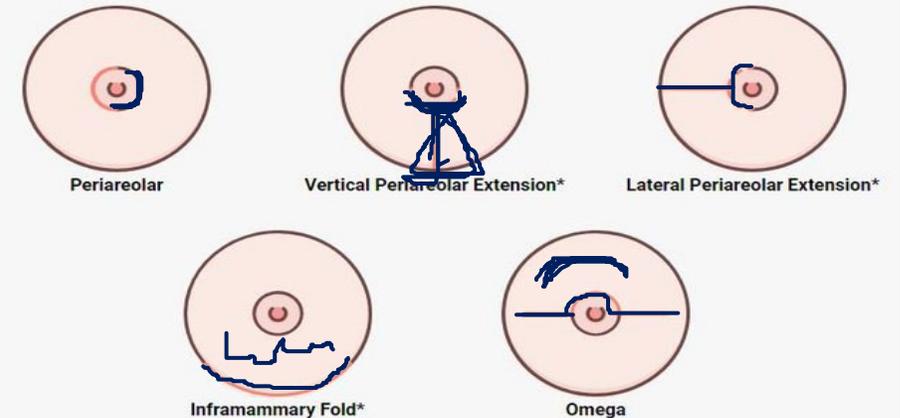
A subcutaneous mastectomy, also called nipple sparing mastectomy, is the removal of breast tissue without the nipple and areolar complex or overlying skin. It is performed to facilitate immediate breast reconstruction. Cases coded 30 may be considered to have undergone breast reconstruction.

[SEER Note: Code Goldilocks mastectomy in Surgery of Primary Site (NAACCR # 1290). Breast surgery code 30 seems to be the best available choice for "Goldilocks" mastectomy. It is essentially a skin-sparing mastectomy with breast reconstruction. The choice between code 30 and codes in the 40-49 range depends on the extent of the breast removal. Review the operative report carefully and assign the code that best reflects the extent of the breast removal.]

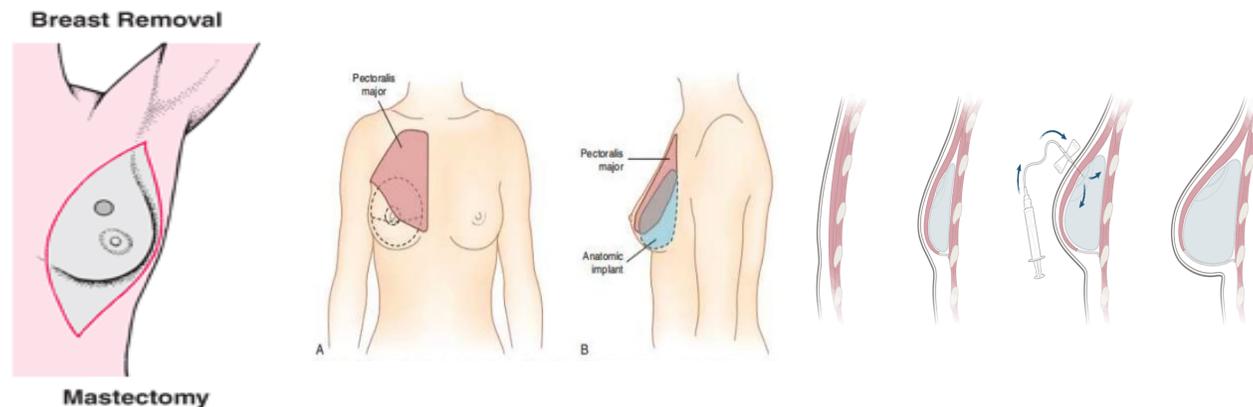
## Types of Skin-sparing Mastectomy Incisions



The Types of Nipple-Sparing Mastectomy Incisions (\* indicates incisions typically used by PRMA surgeons)



- 40 Total (simple) mastectomy, NOS
  - 41 WITHOUT removal of uninvolved contralateral breast
    - 43 Reconstruction, NOS
    - 44 Tissue
    - 45 Implant
    - 46 Combined (tissue and implant)
  - 42 WITH removal of uninvolved contralateral breast
    - 47 Reconstruction, NOS
      - 48 Tissue
      - 49 Implant
      - 75 Combined (tissue and implant)



[SEER Note: “Tissue” for reconstruction is defined as human tissue such as muscle (latissimus dorsi or rectus abdominis) or skin in contrast to artificial prostheses (implants). Placement of a tissue expander at the time of original surgery indicates that reconstruction is planned as part of the first course of treatment.]

[SEER Note: Assign code 43 for a simple mastectomy with tissue expanders and acellular dermal matrix/AlloDerm. The tissue expander indicates preparation for reconstruction. The acellular dermal matrix/AlloDerm is not coded because, while they often accompany an implant procedure, they are not the principle element of reconstructive procedures. The principle elements would be tissue from the patient and/or prosthetics (e.g., gel implants).]

**A total (simple) mastectomy removes all breast tissue, the nipple, and the areolar complex. An axillary dissection is not done.**

For single primaries only, code removal of involved contralateral breast under the data item Surgical Procedure of Other Site (NAACCR Item # 1294).

[SEER Note: Example of single primary with removal of involved contralateral breast—Inflammatory carcinoma involving both breasts. Bilateral simple mastectomies. Code Surgery of Primary Site (NAACCR # 1290) 41 and code Surgical Procedure of Other Site (NAACCR # 1294) 1.]

If contralateral breast reveals a second primary, each breast is abstracted separately. The surgical procedure is coded 41 for the first primary. The surgical code for the contralateral breast is coded to the procedure performed on that site.

[SEER Note: Placement of a tissue expander at the time of original surgery means that reconstruction is planned as part of the first course of treatment. When an expander is placed, code the mastectomy and reconstruction.] Reconstruction that is planned as part of first course treatment is coded 43-49 or 75, regardless of whether it is done at the time of mastectomy or later.

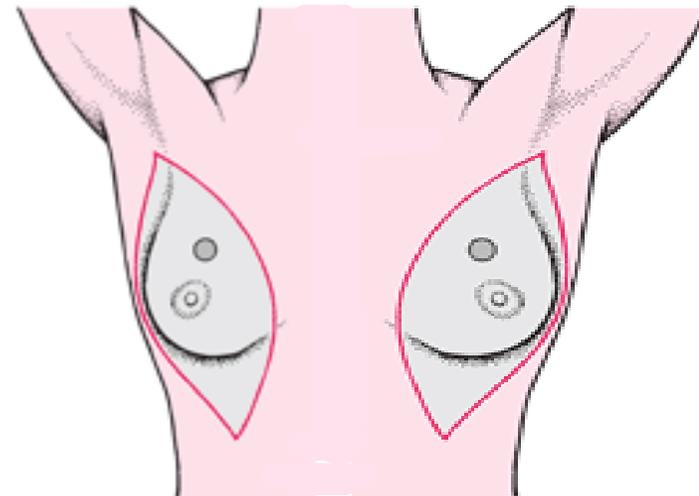
[SEER Note: Reconstruction may be done at the same time as the mastectomy or may be done later. Code 43-49, or 75 if the operative report or medical record states reconstruction will be done later, or if a tissue expander is inserted during the mastectomy procedure. Tissue expander insertion precedes reconstruction.]



**76** Bilateral mastectomy for a single tumor involving both breasts, as for bilateral inflammatory carcinoma

[SEER Note: Assign code 76 for a more extensive bilateral mastectomy. Assign code 0 in Surgical Procedure of Other Site (NAACCR # 1294)

For a simple bilateral mastectomy, assign code 41 with code 1 in Surgical Procedure of Other Site (NAACCR # 1294).]



- 50** Modified radical mastectomy
  - 51** WITHOUT removal of uninvolved contralateral breast
    - 53** Reconstruction, NOS
      - 54** Tissue
      - 55** Implant
      - 56** Combined (tissue and implant)
  - 52** WITH removal of uninvolved contralateral breast
    - 57** Reconstruction, NOS
      - 58** Tissue
      - 59** Implant
      - 63** Combined (tissue and implant)

Removal of all breast tissue, the nipple, the areolar complex, and variable amounts of breast skin in continuity with the axilla. The specimen may or may not include a portion of the pectoralis major muscle.

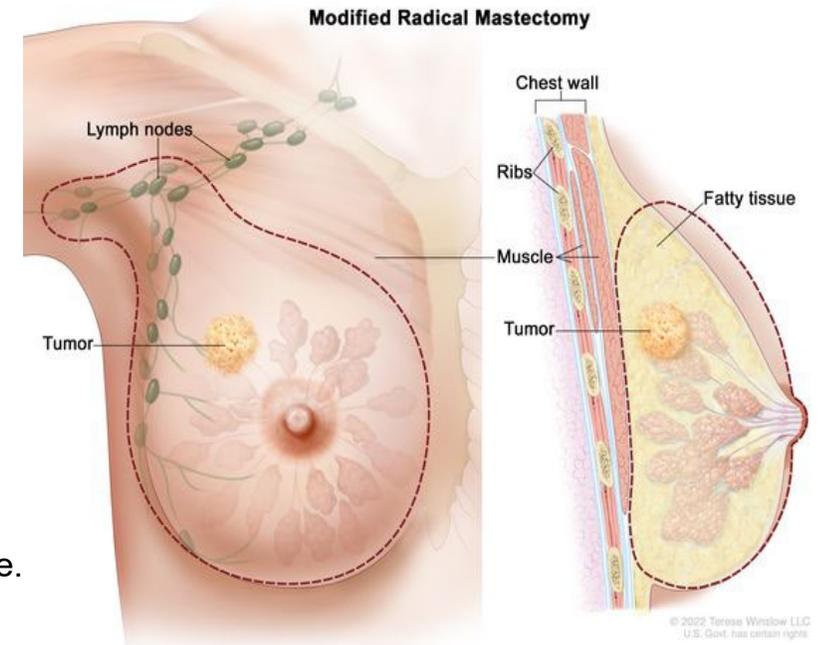
[SEER Note: "In continuity with" or "en bloc" means that all the tissues were removed during the same procedure, but not necessarily in a single specimen. "Tissue" for reconstruction is defined as human tissue such as muscle (latissimus dorsi or rectus abdominis) or skin in contrast to artificial prostheses (implants). Placement of a tissue expander at the time of original surgery indicates that reconstruction is planned as part of the first course of treatment.

Code the most invasive, extensive, or definitive surgery in Surgery of Primary Site (NAACCR # 1290).

Assign code 51 or 52 if a patient has an excisional biopsy and axillary dissection followed by a simple mastectomy during the first course of therapy. Code the cumulative result of the surgeries, which is a modified radical mastectomy in this case.]

If contralateral breast reveals a second primary, each breast is abstracted separately. The surgical procedure is coded 51 for the first primary. The surgical code for the contralateral breast is coded to the procedure performed on that site.

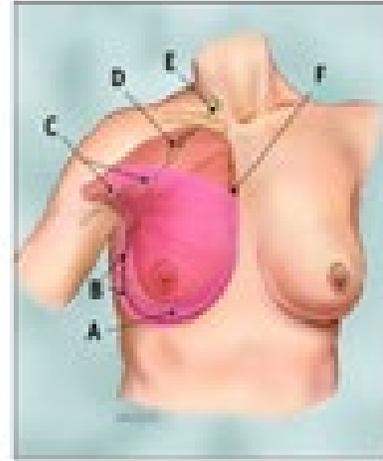
For single primaries only, code removal of involved contralateral breast under the data item Surgical Procedure of Other Site (NAACCR Item # 1294)



## Radical mastectomy

- 60** Radical mastectomy, NOS
- 61** WITHOUT removal of uninvolved contralateral breast
  - 64** Reconstruction, NOS
    - 65** Tissue
    - 66** Implant
    - 67** Combined (tissue and implant)
  - 62** WITH removal of uninvolved contralateral breast
    - 68** Reconstruction, NOS
      - 69** Tissue
      - 73** Implant
      - 74** Combined (tissue and implant)

[SEER Note: Involves removal of breast tissue, nipple, areolar complex, variable amount of skin, pectoralis minor, and/or pectoralis major, as well as en bloc axillary dissection. “Tissue” for reconstruction is defined as human tissue such as muscle (latissimus dorsi or rectus abdominis) or skin in contrast to artificial prostheses (implants). Placement of a tissue expander at the time of original surgery indicates that reconstruction is planned as part of the first course of treatment.]



- Removes breast tissue, muscle, axillary and internal mammary lymph nodes
- Very disfiguring—rarely performed



**70** Extended radical mastectomy

**71** WITHOUT removal of uninvolved contralateral breast

**72** WITH removal of uninvolved contralateral breast

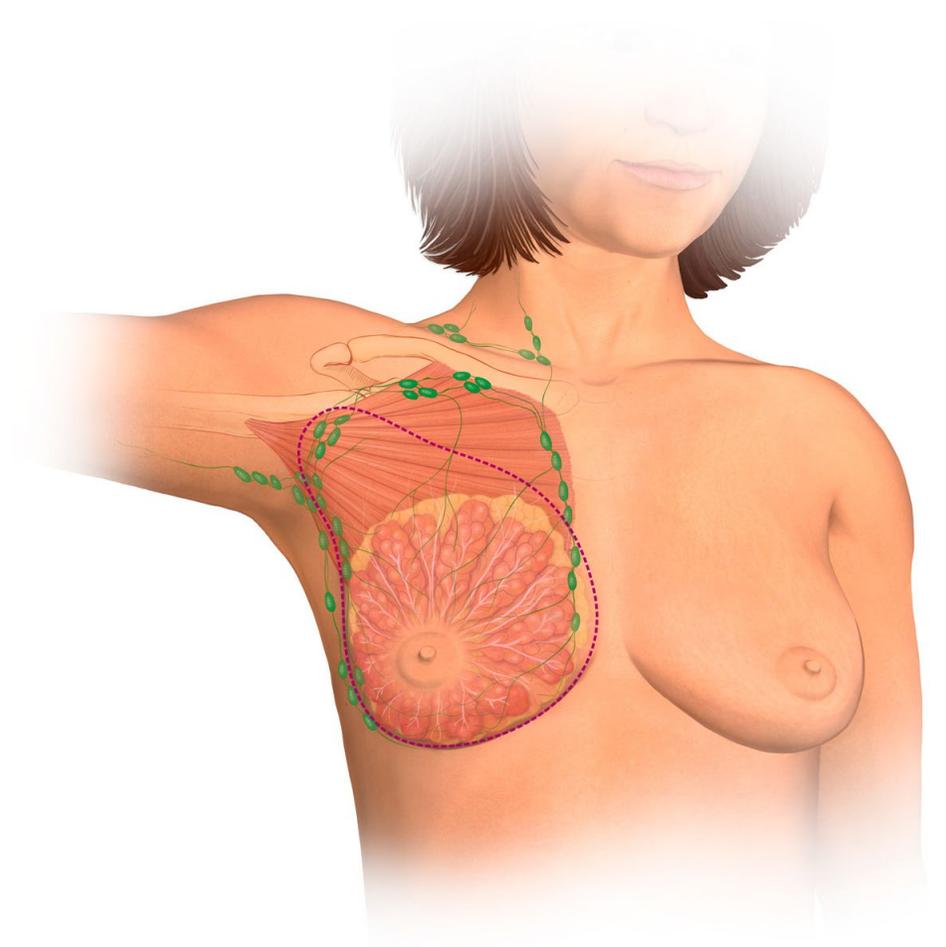
[SEER Note: Involves removal of breast tissue, nipple, areolar complex, variable amounts of skin, pectoralis minor, and/or pectoralis major, as well as removal of Internal mammary nodes and en bloc axillary dissection]

**80** Mastectomy, NOS

**Specimen sent to pathology for surgical events coded 20-80**

**90** Surgery, NOS

**99** Unknown if surgery performed; death certificate ONLY



# SSDIS

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- The Breast schema has 21 SSDIs
  - This is the most SSDIs than any other schema
- All 21 SSDIs use tissue samples from the primary tumor
  - Tissue from lymph nodes or metastatic tissue may be used in certain circumstances (see individual coding guidelines for each data variable)
- Primary source for results:
  - Pathology report
  - Secondary report from outside laboratory



## ER and PR

- Estrogen Receptor Percent Positive or Range [#3826]
- Estrogen Receptor Summary [#3827]
- Estrogen Receptor Total Allred Score [#3828]
- Progesterone Receptor Percent Positive or Range [#3914]
- Progesterone Receptor Summary [#3915]
- Progesterone Receptor Total Allred Score [#3916]

## Oncotype

- Oncotype Dx Recurrence Score-DCIS [#3903]
- Oncotype Dx Risk Level-DCIS [#3905]
- Oncotype Dx Recurrence Score-Invasive [#3904]
- Oncotype Dx Risk Level-Invasive [#3906]

## HER2

- HER2 IHC Summary [#3850]\*
- HER2 ISH Summary [#3854]\*
- HER2 Overall Summary [#3855]
- HER2 ISH Single Probe Copy Number [#3853]\*
- HER2 ISH Dual Probe Copy Number [#3851]\*
- HER2 ISH Dual Probe Ratio [#3852]\*

## Multigene

- Multigene Signature Method [#3894]
- Multigene Signature Results [#3895]

## Other

- Ki-67 [#3863]
- LN Positive Axillary Level I-II #3882]
- Response to Neoadjuvant Therapy [#3922]

\*As of 1/1/2021

No longer required by many standard setters  
May be left blank



# ER and PR

- Estrogen receptor (ER) positivity and progesterone receptor (PR) positivity are favorable prognostic factors in breast cancer
- Positive results predict a favorable response to endocrine (hormonal) therapy
- Combined ER and PR positivity is associated with increased response to antiestrogen therapies
- There are a variety of ways to report information on ER and PR results, but there is almost always a summary statement that the result is positive or negative



There are many different ways in which results can be reported  
 Remember : ER, PR and HER2 use tissue samples  
 Results will be on path report

### Example 1

Estrogen Receptor (ER) Status:

Positive  
 Percentage of cells with nuclear positivity: 90%  
 Average intensity of staining: Strong  
 Allred score: 8  
 Appropriate control is as expected

Progesterone Receptor (PgR) Status:

Positive  
 Percentage of cells with nuclear positivity: 70%  
 Average intensity of staining: Strong  
 Allred score: 8  
 Appropriate control is as expected.

### Example 2

3 BREAST BIOMARKER CAP SURGICAL PATHOLOGY CANCER CASE SUMMARY: Estrogen Receptor (ER) Status  Positive Percentage of cells with nuclear positivity Specify: [ ]% -OR- Range (Note A) \_\_\_ 1-10% (specify): [ ] % \_\_\_ 11-20% \_\_\_ 21-30% \_\_\_ 31-40% \_\_\_ 41-50% \_\_\_ 51-60%  61-70% \_\_\_ 71-80% \_\_\_ 81-90%  91-100% + Average intensity of staining: + \_\_\_ Weak + \_\_\_ Moderate  + \_\_\_ Strong \_\_\_ Negative \_\_\_ Internal control cells present and stain as expected \_\_\_ Internal control cells absent \_\_\_ Other (specify): [ ] \_\_\_ Cannot be determined (indeterminate) \_\_\_ Internal control cells present; no immunoreactivity of either tumor cells or internal controls \_\_\_ Other (specify): [ ] Prog



# Allred Score

Allred score not given?

That's ok, it can be calculated

The Allred score combines the percentage of positive cells (proportion score) and the intensity score of the reaction product in most of the carcinoma

The 2 scores are added together for a final score with 8 possible values (00-08)

Proportion Score	Positive Cells, %
0	0
1	<1
2	1 to 10
3	11 to 33
4	34 to 66
5	≥67

Intensity	Intensity Score
None	0
Weak	1
Intermediate/Moderate	2
Strong	3



## Calculating Allred Score

Proportion Score	Positive Cells, %
0	0
1	<1
2	1 to 10
3	11 to 33
4	34 to 66
5	≥67

Intensity	Intensity Score
None	0
Weak	1
Intermediate/Moderate	2
Strong	3

3 BREAST BIOMARKER CAP SURGICAL PATHOLOGY CANCER CASE SUMMARY: Estrogen Receptor (ER) Status:  Positive  Negative Percentage of cells with nuclear positivity:  Specify: [ ]% -OR-  Range (Note A)  1-10% (specify): [ ] %  11-20%  21-30%  31-40%  41-50%  51-60%  61-70%  71-80%  81-90%  91-100% + Average intensity of staining:  Weak  Moderate  Strong  Negative Internal control cells present and stain as expected  Internal control cells absent  Other (specify): [ ]  Cannot be determined (indeterminate)  Internal control cells present; no immunoreactivity of either tumor cells or internal controls  other (specify): [ ] Prog

Positivity: 91 100% (5)

Intensity: Strong (3)

$$5 + 3 = 8$$

Allred Score = 8



# HER2

- The development of HER-2 targeting agents for the treatment of HER2 positive breast cancer has dramatically improved outcomes for patients with HER2 positive breast cancers
- HER2 status is primarily evaluated to determine patient eligibility for anti-HER2 therapy



# Oncotype

The Oncotype DX Breast Recurrence Score test (Oncotype DX) test is a genomic test that predicts the risk of recurrence and likelihood of benefit from certain types of treatment

## **DCIS (Insitu)**

- Oncotype Dx Recurrence Score-DCIS
- Oncotype Dx Risk Level-DCIS
  - The Oncotype DX DCIS score is a genomic test that estimates the likelihood of local recurrence (DCIS or invasive) for a patient with DCIS.
  - The results may be used clinically to evaluate benefits of radiation therapy following surgery

## **Invasive**

- Oncotype Dx Recurrence Score-Invasive
- Oncotype Dx Risk Level-Invasive
  - Oncotype Dx Recurrence Score-Invasive is a genomic test to predict the likelihood of distant recurrence of invasive breast cancer based on the assessment
  - The results may be used clinically to evaluate benefits of chemotherapy following surgery



# Multigene

- Multigene testing is usually done for node-negative female breast cancer patients
- Predicts risk of recurrence within a specified time period
- Predicts the likelihood that the patient will respond to specific types of chemotherapy
- Multigene testing helps tailor treatment for the woman's specific cancer characteristics
  
- This is different than Oncotype Scores



# Ki-67

- Ki-67 is a marker of cell proliferation
- A high value indicates a tumor that is proliferating more rapidly
  - High proliferating rates indicate a more aggressive cancer



# LN Positive Axillary Level I-II

- This data item pertains to the number of positive ipsilateral level I and II axillary lymph nodes and intramammary lymph nodes based on **pathological information**
- Data item Number positive through sentinel biopsy and/or regional lymph node dissection of the level I-II lymph nodes
- X6: positive axillary level I-II via FNA
- **Do not** include Level III
- **Do not** include supraclavicular



# Response to Neoadjuvant Therapy

- Based on physician's statement
- This data item documents whether that neoadjuvant therapy was successful
  - Systemic or radiation treatment administered prior to surgery in an attempt to shrink the tumor or destroy regional metastases



**Questions?**