After much deliberation, consensus was reached by CDC, SEER and the Commission on Cancer’s American College of Surgeons (ACS) that Directly Coded Summary Stage was, for most registries, a more efficient method of recording if and how far a solid tumor had extended from the point of origin. With the advent of AJCC TNM and Collaborative Staging some registries have lost touch with or have never been exposed to this method of staging. It was decided that Directly coded Summary Staging would be required from all reporters by CDC’s National Program of Cancer Registries (NPCR, Not CS derived). Registries that report to the American College of Surgeons or SEER will meet additional criteria as set forth by the ACoS or the NIH.

The following slides will look at how a registrar needs to approach Summary Staging. It will be a review for some and new information for others.

As the slide states, Summary Staging is based only on whether or how far a malignancy has spread and is an efficient method of assigning that information in a usable format. It is the most basic staging system and is utilized for staging most solid tumors. It should be noted that in the SEER Summary Staging Schema, Kaposi Sarcoma, Lymphomas and Hematopoietic Diseases are addressed. The schemas are not the same methodology as the solid tumors but Registrars need to be aware they are provided.

Summary Staging timing is limited to information obtained through the completion of surgeries in the first course of treatment, or within 4 months of diagnosis in the absence of disease progression; whichever is longer.
To begin the Summary Staging process, abstractors should always review:

- History and Physical Exam
- Radiology Reports
- Operative Reports
- Pathology Reports
- Medical Consults
- Pertinent Correspondence

Although Summary Staging is a much less cumbersome staging methodology, the Registrar will still need to read and evaluate the same data that is utilized to assign AJCC TNM or Collaborative Staging, which includes a review of the:

- Histology and Physical Exam
- Radiology Reports
- Operative Reports
- Pathology Reports
- Medical Consultation Reports and
- Pertinent Correspondence

Some medical records may have documentation of the tumor using more than one term. Equivalent terms should be considered when reviewing the record.

- Duct is the same as ductal
- Mammary or breast (should define farther that this mammary refers to the fact that it is breast tissue)
- Mucinous is the same as Colloid
- Tumor, Mass, Lesion or Neoplasm are equal in meaning
- NOS

Equivalent or Equal Terms to Consider for Breast Cancers

- Duct or Ductal
- Mammary or Breast
- Mucinous or Colloid
- Tumor, Mass, Lesion or Neoplasm
- NOS

Determining how the Breast Tumor Should be Staged requires the Registrar to:

- Read the physical exam and work up documents.
- Read operative and pathology reports.
- Review imaging reports for documentation of any spread.
- Become familiar with the anatomy of the breast and the regional and distant lymph node chains to avoid incorrect staging if nodes are involved.
- Refer to the online manuals regularly and periodically to check the site for updates and/or changes.

When staging breast cancers, Registrars need to familiarize themselves with the anatomy of the breast and the lymphatic chains associated with the breast. Physical Exam reports will indicate if the physician felt or observed any abnormalities. Documentation will include items such as whether a tumor identified on mammogram could be palpated, location of tumor, palpable size, fixation, and skin involvement.

Operative, pathology and imaging reports need to be carefully scrutinized for tumor size, and evidence of spread by the tumor, including whether there is lymph node involvement or distant disease.

Imaging will include mammography findings,
ultrasound, MRI and other scans to help determine stage of disease.

Labs will provide information that may assist in determining which treatment agents may be most beneficial to the patient.

The main tests recommended by the American Cancer Society to detect early breast cancer include the mammogram and clinical breast exam.

In women who are at higher risk due to certain risk factors, the American Cancer Society also recommends the MRI.

Summary Staging is correctly assigning one of nine single-digit codes that describes the tumor extent at the time of diagnosis. There are nine codes that can be assigned in general, but only 8 possible for most cancers. Code 8 is used for benign and borderline CNS tumors.

The codes for Summary Stage are in ascending order, starting with the most minimal tumor involvement or growth up to distant spread. A thorough evaluation of the medical record(s) documentation will normally provide the information for the accurate coding of Summary Stage.

Code 9, or unknown stage should be used only when all efforts to establish the stage of disease have been exhausted, it is an unknown primary site, or it is a death certificate only case (which can only be assigned by the central cancer registry).

Code 5 or Regional, NOS should likewise only be assigned when a more specific regional stage cannot be determined.

An in-depth explanation of the Summary Stage categories can be found at http://seer.cancer.gov/tools/ssm/.
To assign the correct summary stage code, registrars need to know the anatomy of the breast. Breast cancer is a malignant tumor that starts in the cells of the breast. The disease occurs almost entirely in women, but men can get it, too.

In females, the breast is mainly made up of lobules (milk-producing glands), ducts (tiny tubes that carry the milk from the lobules to the nipple, and stroma (fatty tissue and connective tissue surrounding the ducts and lobules, blood vessels, and lymphatic vessels).

The breast is composed of glandular tissue that has a dense fibrous stroma. The glandular tissue consists of lobules that group together into ducts.

Most breast cancers begin in the cells that line the ducts (ductal cancers). Some begin in the cells that line the lobules (lobular cancers), while a small number start in other tissues.

The Registrar should become familiar with the pertinent information on how and where breast cancers usually might have spread either regionally or distant.
The Importance of the Lymphatic System

The lymphatic system is important to understand as it is one way that breast cancers can spread.

- Lymph nodes are small, bean shaped collections of immune system cells that are connected by lymphatic vessels.
- Lymphatic vessels are like small veins, except that they carry a clear fluid called lymph (instead of blood) away from the breast.
- Lymph contains tissue fluid and waste products, as well as, immune system cells.
- Breast cancer cells can enter lymphatic vessels and begin to grow in lymph nodes.


It is important to understand the lymphatic system which is one way that breast cancer or any cancer can spread.

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Lymphatic Vessels in the Breast

- Lymphatic vessels in the breast that connect to the lymph nodes under the arm
  - Axillary nodes
- Lymphatic vessels that connect to lymph nodes inside the chest
  - Internal mammary nodes
- Lymphatic vessels that connect either above or below the collarbone
  - Supraclavicular nodes
  - Infraclavicular nodes

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  - Supraclavicular nodes
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Here is an anatomic drawing of the lymph nodes in relation to the breast.

If the cancer cells spread to lymph nodes, the patient has a higher chance that the malignant cells could have also spread into the bloodstream and spread (metastasized) to other sites within the body.

It is important to determine the spread of disease as the findings of involvement of one or more lymph nodes with breast cancer often affects the patient’s treatment plan.
**What Does In-Situ Mean?**

- **In-Situ is defined as malignancy without invasion**
  - Only occurs with epithelial or mucosal tissue
  - Must be microscopically diagnosed to visualize the basement membrane.

- **In-Situ cancer of the breast may also be referred to as**
  - non-invasive
  - pre-invasive,
  - non-infiltrating
  - stage 0
  - intraductal WITHOUT infiltration
  - lobular neoplasia
  - in situ Paget disease

- If pathology states the tumor is microinvasive it is no longer staged as in-situ and is considered to be at least localized disease.

In-Situ tumors are found on the surface of the organ and microscopically have characteristics of malignant tumor. However, an in-situ lesion has not yet invaded or penetrated through the basement membrane. That is why it is so important to ascertain that the in-situ lesion has been microscopically evaluated.

In situ cancer of the breast may also be referred to as (see slide list)

If the pathologies describes an “in situ” tumor with microinvasive and/or states that there is minute focus of microinvasion or invasive component, it is no longer staged as in situ and is at least considered as localized stage.

**In-Situ Equivalent Terms**

**Behavior Code of 2**
- In situ Paget disease
- Intracystic, non-infiltrating– located within a cyst
- Intraductal
- Intraductal WITHOUT infiltration
- Lobular neoplasia
- Non-infiltrating
- Noninvasive
- Pre-invasive
- Stage 0

Review of the SEER Summary Staging 2000 will help to clarify the definitions/terms for specific malignancies.

There are multiple synonymous terms that denote if the cancer is in-situ and the Registrar needs to become acquainted with those terms. Newer Registrars may find it helpful to post a listing of the equivalent terms near their work station.

**In Situ (code 0)**

- An in situ cancer:
  - meets the pathologic criteria for a malignancy.
  - has not invaded supporting structure of the organ of origin.

Generally, a cancer begins in the rapidly dividing cells of the epithelium or lining of an organ and grows from the inside to the outside of an organ. If there is no penetration of the basement membrane of the tissue and no stromal invasion, it is in situ.
Staging In-Situ Breast Cancer Requires Knowledge of a Specific Exception

In-Situ is a non-invasive malignancy and is coded as a 0 UNLESS

- Primary Tumor was documented in the pathology report as having only an in-situ behavior, but there is an additional statement confirming malignancy has spread and is present in regional node(s) or in a distant site.
  - Should that occur, the in situ stage is not valid and the stage must be documented to reflect the regional or distant disease.
- If the pathologists describes the in situ tumor as microinvasive, the stage is at least localized.

Once again an important reminder that there is an exception to staging in-situ. If there is additional disease spread from the in-situ primary site found – it can no longer be considered in-situ. If the pathologists describes the in situ tumor as microinvasive, the stage is at least localized.

What Does Localized Mean?
Localized breast cancer is a malignancy which has not spread beyond the breast.
- Breast tissue
- Breast fat
- Nipple
- Areola
- Paget's disease, with or without underlying tumor.

Localized disease or Code 1 means that the tumor has not spread beyond the breast. The Registrar must review all medical record documentation to confirm there are no nodes or other areas of tumor involvement.

A word about Paget’s disease of the nipple or breast:
It is a rare type of breast cancer, which can occur in women and men. It is identified in and around the nipple, and may be a signal of a breast cancer beneath the skin. Although most usually diagnosed in menopausal women, it may appear in women as young as 20 years old.

Localized (code 1)
- Malignancy is limited to organ of origin.
- No spread beyond the organ of origin.
- Infiltration past the basement membrane of epithelium into the functional part of the organ; however, there is no spread beyond the boundaries of the organ.

Source: SEER Summary Stage Manual - 2000
What Does Regional Disease Mean?
Regional Disease indicates that the tumor has gone beyond the organ of origin but is not considered distant.

- **Regional by direct extension (code 2)**
  Tumor has invaded surrounding organ(s) or adjacent tissues. May also be referred to as direct extension or contiguous spread.

- **Regional to lymph nodes (code 3)**
  Tumor cells may have traveled through the lymphatic system to regional lymph nodes where they remain and begin to “grow.”

- **Regional by direct extension and lymph nodes (code 4)**
  Extension into adjacent structures or organs and lymph node involvement are both present.

- **Regional (as stated by the physician but the site[s] of regional spread is/are not clearly documented) (code 5)**

Regional disease has many avenues of presentation. Regional by direct extension or contiguous spread (Coded as 2) occurs when the tumor invades into adjacent tissue or organs. Review the record to be certain that there are no nodes or distant tumor involvement before assigning this code.

Regional to lymph nodes or code 3 indicates that tumor cells have found their way to node(s) that are considered regional and have actively begun “to grow.” The record should document that nodal involvement is the only disease other than the primary in order to assign code 3.

Regional by both direct extension and involving regional lymph nodes is coded as 4.

Code 5 indicates there is a physician statement that patient has regional breast cancer but no other documentation.

If there is lymph node involvement but the chain is not named in the records, assume that the chain is regional.

Staging of Regional Disease (codes 2, 3, 4, 5)
- Review records to confirm that tumor is more than localized.
- Review all pertinent reports looking for specific regional disease references and exclusions of distant spread.
  - Terms to watch for are seeding, implants and nodules – scrutinize diagnostic reports for regional disease spreading references to eliminate that spread is not distant.

Caution: Breast cancer with lymph node metastases means involvement by tumor – always confirm that the lymph nodes are regional.

Regional disease can be present in many sites – lymph nodes and direct extension. With the drainage in the lymphatic channels from the tumor site, a cell or cells from the tumor can result in lymph nodes anywhere in the body to become involved. It is extremely important that the Registrar evaluate whether nodal involvement is regional or distant before assigning the stage.
Regional by Direct Extension (code 2)
- Presence of satellite nodule or nodules in the skin or the breast.
- Skin edema.
- Extensive skin involvement including Peau d’orange, inflammation of skin, and satellite nodules of the skin of primary breast.
- Ulceration of skin.
- Inflammatory carcinoma includes diffuse dermal lymphatic permeation or infiltration (which may be beyond the skin directly overlying the tumor).
- Invasion of or fixation to the chest wall, intercostal muscle or muscles, pectoral fascia or muscles, adjacent ribs, serratus anterior muscle(s) or subcutaneous tissue.
- Local infiltration of dermal lymphatics adjacent to primary tumor involving skin by direct extension.

The SEER manual has a comprehensive listing of these and other regional presentations. It is recommended that the Registrar refer to the manual’s comprehensive listing when assigning the regional direct disease status.

Regional Lymph Nodes (code 3)

Axillary Nodes:
- Level 1 – (low, superficial or NOS, adjacent to the tail of the breast)
  - Anterior (pectoral)
  - Lateral (brachial)
  - Posterior (subcapsular)
- Level II – (mid-level, central or NOS)
  - Interpectoral (Rotter’s)
- Level III – (high, deep or NOS)
  - Apical (subclavian)
  - Axillary vein

Summary Stage 2000 Breast Regional Axillary Node Levels.

An FYI for Registrars - in Summary Stage 1977, Infraclavicular or subclavicular nodes would have been considered distant.

“Nodules in axillary fat” is a description of lymph nodes that no longer resemble lymph nodes because of the malignancy. It represents tumor deposits in the ipsilateral axillary fat.
Here is a diagram of the regional lymph nodes of the breast.

Regional by BOTH Direct Extension AND Lymph Node Involvement (code 4)

- Assign code 4 (combination code) when there is BOTH:
  - Direct extension of disease
  - AND
  - Involvement of regional lymph nodes

When to Code as Regional, NOS (code 5)

- It is unclear if the tissues involved are regional direct extension or lymph nodes
- Physician statement says “Regional disease” with no additional documentation in the medical record.

Regional Disease with no further information is coded as Regional, NOS – Code 5
Carcinoma of the breast with regional lymph nodes

- This indicates that the involved lymph nodes are those that are the first to drain the primary and should be staged as regional to lymph nodes.

- Example: Breast adenocarcinoma with axillary lymph node metastases means the axillary nodes are involved and should be coded as regional to lymph nodes (code 3).

- Don’t be misled by the term metastases – It doesn’t always mean distant disease.

What is Distant Stage (code 7)?

Distant Stage indicates that the tumor has spread to areas beyond the regional sites.

- These sites may be called:
  - Remote
  - Metastatic
  - Diffuse

- Distant lymph nodes are those that are not included in the drainage area of the primary tumor.

- Hematogenous metastases develop from tumor cells carried by the bloodstream and begin to grow beyond the local or regional areas.

Distant metastases is the spread by tumor through blood or lymphatics that carry tumor cells to areas of the body beyond the primary or regional areas. While there are several sites that are normally expected to be involved in distant spreading, metastatic disease can occur in any distant site.

If there is evidence of spread but the terminology does not match any of the in the various categories in the manual, try to research the terms to match them. If there is no match, it is assumed the site is distant.

Information regarding distant stage are not always/often available in a pathology report. These are often detected via physical exam, through x-rays or scans or even by an autopsy evaluation.
Important Things to Remember

- Changes such as dimpling of the skin, tethering, and nipple retraction are caused by tension on Cooper's ligament(s), not by actual skin involvement. They do not alter the classification.

- Consider adherence, attachment, fixation, induration, and thickening as clinical evidence of extension to skin or subcutaneous tissue; code regional by direct extension. (These terms would have been ignored in the 1977 Summary Staging Guide and cases would have been considered localized in the absence of further disease.)

- Consider “fixation, NOS” as involvement of pectoral muscle; code regional by direct extension.

- Since “inflammatory carcinoma” was not specifically categorized in either the Historic Stage or the 1977 Staging Guide, previous cases of inflammatory carcinoma may have been coded to either regional or distant.

Tips for the Abstractor

- If review of the patient’s records documents distant metastases, the Registrar can avoid reviewing records to identify local or regional disease.

- Pathology reports that contain a statement of invasion, nodal involvement or metastatic spread cannot be staged as in-situ even if the pathology of the tumor states it.

- If there are nodes involved, the stage must be at least regional.

- If there are nodes involved but the chain is not named in the pathology report, assume the nodes are regional.

Tips for the Abstractor – cont’d

- A way to remember the difference between regional direct extension and distant metastases is whether the secondary site has tumor on the surface (most likely direct extension) or in the organ (blood-borne metastases).

- If the record does not contain enough information to assign a stage, it must be recorded as unstageable.

There are some areas that have caused some concern with Registrars and some of those areas are problems due to changes between the Summary Staging Guides. These notes are a few of the concerns that have been found when staging breast cancer.
Exercise 1 – How would you stage this case?

- Patient presented after noting a mass in her left breast. Physical exam stated there was no discharge or retraction of the nipple.

- Enlarged axillary nodes were noted in the record. Patient underwent a needle biopsy of the breast lesion which identified infiltrating ductal carcinoma, moderately differentiated.

- A modified radical mastectomy identified tumor had infiltrated the dermis. Ten axillary nodes were examined and three were found to be involved.

Stage Case----Answer on next slide
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- A modified radical mastectomy identified tumor had infiltrated the dermis. Ten axillary nodes were examined and three were found to be involved.

Answer - Code 4 – Direct extension to dermis (code 2) and regional nodal involvement (code 3).

Exercise 2 – How would you stage this case?

- Patient presented with a fixed mass in her left breast. It was 4 cm in size with no lymphadenopathy.

- Mammogram confirmed mass to be deep in the breast and was highly suspicious for malignancy.

- Pt underwent a radical mastectomy with findings of pectoralis muscle involvement with poorly differentiated ductal carcinoma.

- There were 6 of 14 axillary nodes (code 2) and 2 of 3 supraclavicular nodes involved with tumor (code 7).

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- There were 6 of 14 axillary nodes (code 2) and 2 of 3 supraclavicular nodes involved with tumor (code 7).

Answer - Code 7 – Distant disease to distant supraclavicular nodes.

Exercise 3 – How would you stage this case?

- Patient presented for breast exam which identified a 2 cm lesion in the right breast. No adenopathy. Mammogram noted some changes in the right breast.
- Patient had a biopsy which showed ductal carcinoma, well differentiated. She subsequently had a modified radical mastectomy with axillary dissection.
- Margins were clear. No metastatic disease was found in the 11 lymph nodes dissected.
- Other work-up studies were negative.

Stage Case----Answer on next slide
Exercise 3 – How would you stage this case?

- Patient presented for breast exam which identified a 2 cm lesion in the right breast. No adenopathy. Mammogram noted some changes in the right breast.

- Patient had a biopsy which showed ductal carcinoma, well differentiated. She subsequently had a modified radical mastectomy with axillary dissection.

- Margins were clear. No metastatic disease was found in the 11 lymph nodes dissected.

- Other work-up studies were negative.

Answer - Code 1 – Localized Disease

Exercise 4 – How would you stage this case?

- 81 year old patient presented with a hard nodule in her right breast.

- She subsequently had work up and opted for a modified radical mastectomy.

- Following the surgery she elected not to undergo any further workup or treatment for her apparent regional disease.

Stage Case----Answer on next slide
Exercise 4 – How would you stage this case?

- 81 year old patient presented with a hard nodule in her right breast.
- She subsequently had work up and opted for a modified radical mastectomy.
- Following the surgery she elected not to undergo any further workup or treatment for her apparent regional disease.

Answer - Code 5 - Regional Disease not otherwise specified.

Excellent Resources for Summary Staging

- SEER Summary Stage 2000, SEER Training modules:

The CDC gratefully acknowledges Terese Winslow for granting permission to incorporate her illustrations in this presentation.
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