

Directly Coded Summary Stage Colon Cancer

National Center for Chronic Disease Prevention and Health Promotion
Division of Cancer Prevention and Control, Cancer Surveillance Branch



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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 for CDC's National Program of Cancer Registries (NPCR; not CS derived). Registries that report to the American College of Surgeons or SEER will have to 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.

Directly Coded Summary Staging

- Summary Staging (known also as SEER Staging) bases staging of solid tumors solely on how far a cancer has spread from its point of origin.
- It is an efficient tool to categorize how far the cancer has spread from the original site as the staging categories are broad enough to measure the success of cancer control and other epidemiologic efforts.
- Summary Stage uses all information available in the medical record as it is a combination of clinical and pathologic information on the extent of disease.
- Information within four (4) months of diagnosis.

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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 staging process, abstractors should always review:

- History and Physical Exam
- Radiology Reports
- Colonoscopy/Endoscopy
- 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.

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Determining how the Colon Tumor should be Staged requires the Registrar to:

- Determine which segment of the colon is involved.
- 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 colon and the regional and distant lymph node chains with the involved segment of colon to avoid incorrect staging if nodes are involved.
- Refer to the online manuals regularly and periodically check the site for updates and/or changes.

When staging colon cancers, Registrars need to familiarize themselves with the anatomy of the colon and the lymphatic chains associated with each segment of the colon.

Each colon segment has its own set of lymph node chains that are considered their regional nodes. In addition, segments have some specific sites that are considered distant.

History and physical exam documentation will provide information on the findings from palpation of the abdomen and liver, and an overall report of the patient's general health status.

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Assigning the Correct Summary Stage Code

Nine possible codes for Summary Stage

- 0 = In-Situ
- 1 = Local
- 2 = Regional disease by direct extension only
- 3 = Regional disease with only regional lymph nodes involved
- 4 = Regional disease by both direct extension and regional lymph node(s)
- 5 = Regional disease that is not otherwise specified
- 7 = Distant sites or distant lymph node involvement
- 8 = benign and borderline CNS tumors
- 9 = Unknown if there is extension or metastatic disease (unstaged, death certificate only cases)

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.

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An in-depth explanation of the Summary Stage categories can be found at <http://seer.cancer.gov/tools/ssm/>.

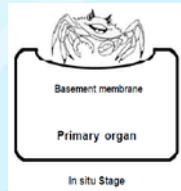
Code 9, or unknown stage should be used only when all efforts to establish the stage of disease have been exhausted, it is an unknown primary site, or it is a death certificate only case (which can only be assigned by the central cancer registry).

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

What does In-Situ Mean?

□ In-Situ is defined as malignancy without invasion

- Only in epithelial or mucosal tissue
- Must be microscopically diagnosed



□ In-Situ of the colon may also be referred to as non-invasive, pre-invasive, intraepithelial, or it may be described as a non-invasive carcinoma in a polyp or adenoma

- If pathology states the tumor is in-situ with microinvasion it is no longer staged as In-Situ but is considered to be at least a 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. A diagnosis of in-situ with micro-invasion takes it out of the in-situ stage category and it is considered at least localized. These micro-invasive cells are now able to penetrate and be carried through the lymphatic system or blood and invade other organs. It is important to know that in situ stage is assigned for carcinoma and melanomas but never for sarcomas.

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In Situ Equivalent Terms

Behavior Code of 2

Intracystic, non-infiltrating – located within a cyst

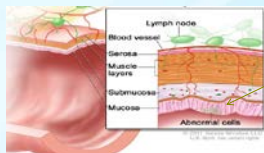
Non-infiltrating

Non-invasive

Pre-invasive

Summary Stage Code 0

No penetration below basement membrane



<http://www.seer.cancer.gov/tools/ssm/>

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.

It is important to remember that sites that do not have an epithelial layer cannot be assigned an in-situ stage since they do not have a basement membrane and therefore they cannot be diagnosed as in-situ.

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

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Staging In-Situ Cancers Requires Knowledge of a Specific Exception

In-Situ is a non-invasive malignancy and is coded as 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.**

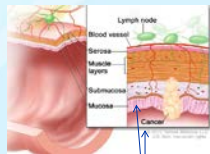
An important rule to remember is that there is an exception to a diagnosis of in-situ. Even though a pathologist has documented in-situ in the final diagnosis, if there is additional regional or distant disease spread from the primary site found – **it can no longer be considered in-situ.**

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What does Localized Mean?

Localized Colon Cancer is a malignancy confined to:

- Intramucosa, NOS
- Lamina Propria
- Mucosa, NOS
- Muscularis Mucosae
- Perimuscular tissue invaded
- Polyp, NOS
 - Head of Polyp
 - Stalk of Polyp
- Submucosa (consider superficial invasion)
- Subserosal tissue (sub) serosal fat
- Transmural, NOS
- Wall, NOS
- Confined to the colon, NOS
- Extension through wall, NOS
- Invasion through Muscularis propria or muscularis, NOS
- Localized, NOS



Invasive tumor confined to colon

Localized disease or Code 1 simply put means that while the malignancy has infiltrated beyond the basement membrane, the tumor has not spread beyond the primary site organ of origin. Information re: stage will be found in:

- Pathology report
- Operative report/operative findings

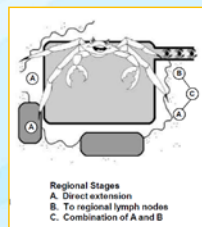
The Registrar must review all medical record documentation to confirm there are no nodes or other areas of tumor involvement.

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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 Stages
A. Direct extension
B. To regional lymph nodes
C. Combination of A and B

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.

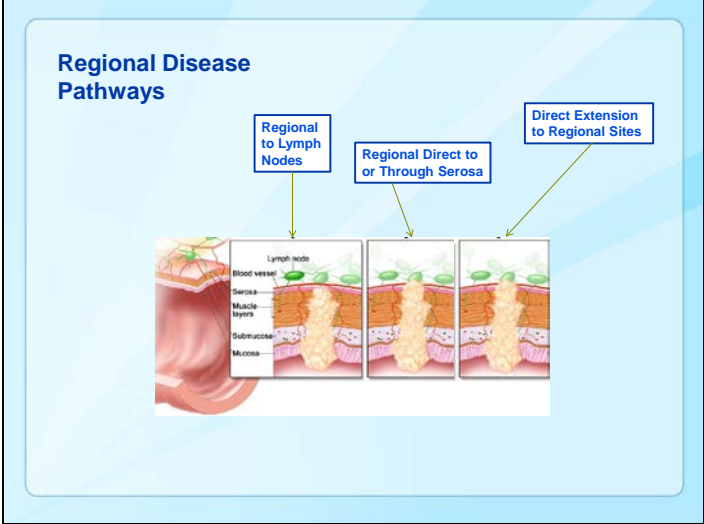
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Regional by both direct extension and involving regional lymph nodes is coded as 4.

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.



This diagram shows the multiple pathways tumor cells can travel to be considered regional disease. Each will be discussed in some detail in the next few slides.

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Staging of Regional Disease

- 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: Colon cancer with lymph node metastases means some nodes have involvement by tumor – always confirm that the lymph nodes are regional.

Regional disease can be present in both– lymph nodes and by direct extension. It is important to remain aware that 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. The Registrar needs to evaluate to determine whether nodal involvement is regional or distant before assigning the stage.

Records to review include: operative report/operative findings – and, as not all sites involved with cancer are surgically resected, the pathology report.

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Regional Direct Extension in All Colon Cancers –Code 2

For all colon cancer segmental sites, direct extension is:

- Invasion of or through the serosa (mesothelium, visceral peritoneum)*
- Extension into or through:
 - Abdominal wall **
 - Adjacent tissue, NOS
 - Connective tissue
 - Fat, NOS
 - Greater omentum
 - Mesenteric fat
 - Mesentery
 - Mesocolon
 - Pericolonic fat
 - Retroperitoneum (excluding fat) **
 - Small intestine

* In historical cases, these would have been considered local.

** In historical cases, these would have been considered distant.

As mentioned previously, each of the colon segments have regional lymph nodes and distant sites associated with them. This slide shows the direct extension that applies to all of the segments.

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Regional Direct Extension in All Colon Cancers – cont'd

- **Ascending Colon**
 - Right Kidney only **
 - Right lobe of the Liver
 - Retroperitoneal fat **
 - Right Ureter **
- **Transverse Colon and the Flexures**
 - Bile Ducts **
 - Gallbladder **
 - Gastrocolic ligament
 - Kidney
 - Liver
 - Pancreas
 - Spleen
 - Stomach**

** In historical cases, these would have been considered distant.

The Registrar should become familiar with the different segments of the colon and the local, regional or distant sites where disease may spread based on the primary tumor location within the colon. As mentioned previously each segment of the colon has its own criteria for staging. For example an ascending colon with right kidney direct extension would be coded as regional disease, but an ascending colon with left kidney spread would be distant.

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Regional Direct Extension in All Colon Cancers – cont'd

- **Descending Colon**
 - Left Kidney **
 - Pelvic Wall **
 - Retroperitoneal Fat **
 - Spleen
 - Left Ureter
- **Sigmoid Colon**
 - Pelvic Wall **

** In historical cases, these would have been considered distant.

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Become Familiar With What Constitutes Regional Lymph Nodes

- ❑ All colon subsites - Colic, NOS, Epicolic, Mesenteric - NOS, Paracolic/pericolic
- ❑ Cecum - Anterior and posterior Cecal Nodes
- ❑ Cecum and Ascending - Ileocolic Nodes
- ❑ Cecum, Ascending and Hepatic Flexure - Right Colic Nodes
- ❑ Ascending, Hepatic Flexure, Transverse and Splenic Flexure* - Middle Colic Nodes
- ❑ Splenic Flexure and Descending – Left Colic Nodes

*Nodules in the pericolic fat are considered involvement of regional nodes

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Each segment of the colon has their own criteria for assigning regional lymph node spread (coded as 3). Regional node involvement is assigned based on the following specific regional nodal chains for their regional sub sites of the colon: See slide.

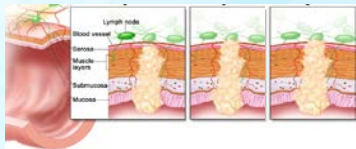
Nodules in pericolic fat refers to nodes that no longer resemble lymph nodes – but represent tumor deposits – describing lymph node involvement. **This is different than what the instructions in CS indicated.** Lymph nodes generally follow the arteries that supply the colon with its blood supply, such as the right colic artery or the right inferior mesenteric artery.

Regional Lymph Nodes cont'd

- ❑ Splenic flexure, sigmoid and descending - Inferior Mesenteric Nodes
- ❑ Descending colon - Sigmoid Nodes**
- ❑ Sigmoid colon – Sigmoid Mesenteric
- ❑ Sigmoid colon - Superior Hemorrhoidal** and Superior Rectal**

* considered distant for splenic flexure in historic stage

** considered distant in historic stage



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Again this lists the named regional lymph node chains for the specified segment of the colon. Any named lymph node not listed in the regional nodes should be classified as distant. If there are UNNAMED lymph nodes, consider the nodes to be regional.

Regional, NOS

- ❖ 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 – Summary Stage Code 5

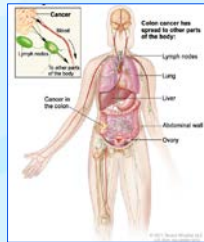
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Regional Disease with no further information is coded as Regional – NOS – Summary Stage Code 5

What is Distant Stage?

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 grow beyond the local or regional areas.



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Distant metastases is the spread of 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.

Note to the Registrar: If there is evidence of spread but the terminology does not match any of 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.

Caution about the word “metastatic” – sometimes it just means that the disease has spread – e.g. colon tumor metastatic to regional nodes.

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.

Remember: Each segment has its own list of regional nodes and distant spread sites.

Distant Sites for Colon

- All colon sites – Involvement in organs or lymph node chains that were not specified as regional in previous slides.
- Each segment of the colon has distant direct extension pathways that are foreseeable extension paths.
- All colon sites – Adrenal gland, Bladder, Diaphragm, Fallopian Tube*, Fistula to skin, Gallbladder, Other colonic segments, Ovary*, Uterus*
- Cecum and Appendix – Right Ureter, Right Kidney, Liver**
- Transverse Colon and Flexures – Ureter
- Sigmoid Colon – Ureter, Rectouterine Pouch (Cul de sac)

* Considered regional for cecum, ascending, descending and sigmoid for Historic Stage

** Considered regional in Historic Stage

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Just as it is in the lymph node involvement, some distant sites are often found to be considered a logical or foreseeable distant site for a particular segment of the colon. However, distant disease can appear anywhere. For example:

Not all nodes that are considered distant to colon are also listed within the manual; some are site-specific and some are general for any segment of the colon – as in:

Distant lymph node(s):

Para-aortic

Retroperitoneal

Superior mesenteric§

Other distant lymph node(s)

According to the manual, several lymph node chains are listed as distant for a particular colon segment.

Be sure the lymph node chain you are referencing is not regional

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.

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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.

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Important Notes to Remember

- ❖ The colon is a hollow organ with multiple segments.
- ❖ Localized disease involves only the wall of the colon.
- ❖ Each segment has its own regional nodes and direct extension sites.
- ❖ Distant sites for one segment may be regional for another.

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Exercise 1 – How would you stage this case?

- Patient presented with history of bloody stool. Colonoscopy confirmed tumor in the transverse colon.
- Patient underwent surgery with findings of poorly differentiated adenocarcinoma.
- Path report stated extension through the serosa.
- 5 nodes were removed with 4 positive for tumor.
- A liver biopsy at time of surgery was negative for metastatic disease.

Stage Case----Answer next slide

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- ❑ Patient underwent surgery with findings of poorly differentiated adenocarcinoma.
- ❑ Path report stated extension through the serosa.
- ❑ 5 nodes were removed with 4 positive for tumor.
- ❑ A liver biopsy at time of surgery was negative for metastatic disease.

Answer - Summary Stage Code 4 – extension to serosa and regional nodes positive for involvement.

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Stage Case----Answer next slide

Exercise 2 – How would you stage this case?

- ❑ Patient presented with complaints of weight loss and weakness for several months. Physical exam noted hepatomegaly.
- ❑ There was no masses identified at time of the digital rectal exam. Barium enema noted a lesion in the sigmoid colon.
- ❑ Patient underwent left hemicolectomy with findings of nodules in the left lobe of the liver positive for metastatic adenocarcinoma.
- ❑ Invasive tumor in the sigmoid colon was 5.4 cm in greatest dimension. Metastatic disease found in 4 mesocolic lymph nodes.

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- ❑ Patient underwent left hemicolectomy with findings of nodules in the left lobe of the liver positive for metastatic adenocarcinoma.
- ❑ Invasive tumor in the sigmoid colon was 5.4 cm in greatest dimension. Metastatic disease found in 4 mesocolic lymph nodes.

Answer - Summary Stage Code 7 – Discontinuous metastatic tumor deposits in liver.

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Excellent Resources for Summary Staging

- ❑ http://seer.cancer.gov/manuals/2013/SPCSM_2013_maindoc.pdf
- ❑ SEER Summary Stage 2000, SEER Training modules: <http://training.seer.cancer.gov>
- ❑ SEER Coding Manuals – Historic – 1977.

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

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Presentation created by CDC
For questions, please contact your designated CDC/NPCR Education Training Coordinator:

Donna M. Hansen, CTR
Auditor/Trainer
UC Davis Institute of Population Health
California Cancer Registry
1631 Alhambra Blvd, Suite #200
Sacramento, CA 95816
(916) 731-2543

Email: dhansen@ccr.ca.gov

For more information please contact Centers for Disease Control and Prevention

1600 Clifton Road NE, Atlanta, GA 30333
Telephone, 1-800-CDC-INFO (232-4636)/TTY:1-888-232-6348
E-mail: cdcinfo@cdc.gov Web:www.cdc.gov



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Centers for Disease Control and Prevention
Chamblee Campus, Atlanta GA

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