In this presentation, we are going to review the AJCC Cancer Staging criteria for the colorectal primary site.

It is important that you follow along and make notes in your manual. In addition to reading the slides and the instructor’s notes, it is important that you stop and read the related sections in your manual as not every point will be discussed in detail.
Use the Correct Chapter

- Chapter 14: Colon and Rectum
  - Colon: C18.0, C18.2–C18.9
  - Rectosigmoid Junction: C19.9
  - Rectum: C20.9

- Chapter 15: Anus
  - Anus: C21.0
  - Anal Canal: C21.1
  - Cloacogenic Zone: C21.2
  - Overlapping lesion of Rectum and Anus: C21.8

- Chapter 13: Appendix (C18.1)

- Applicable Histology Codes:

It is important for colorectal staging to determine the exact primary site and subsite as well as the histology. Colon and rectum use the same chapter (chapter 14). The anus has its own chapter (chapter 15) and the appendix has its own chapter (chapter 13). Appendix (C18.1) is in the C18 range of codes with all other colon subsites, but is specifically not listed for chapter 14. It is important to recognize these specific details. In this presentation, we will focus on the chapter for the colon and rectum.

Also, notice the applicable histology codes for these chapters. These are typically the carcinomas. For example, adenocarcinoma (8140) is in the 8000-8152 range and would be an applicable histology for staging the case using this chapter. It is possible that there may be a histology in the same histologic family as one the codes listed, but that specific histology code is not listed. Histologies in the same family are still applicable. Sarcoma, lymphoma and carcinoid is excluded.
Use the Correct Chapter

Check to see if there is a Histology Specific Chapter

- Chapter 16: Gastrointestinal Stromal Tumor
- Chapter 17: Neuroendocrine Tumors
- Chapter 57: Lymphoid Neoplasms

If the histology is not one of the codes listed in the applicable range, check to see if there is a histology specific chapter that should be used. The three listed on this slide are the histology specific chapters that may apply to the colon and rectum.

If the histology is not in the applicable range and there is no applicable histology specific chapter, page 13 of the manual states the case “should” not be staged using the AJCC classification. This is probably something that should be discussed by the cancer committee to determine how to handle these cases consistently within the facility.
This picture shows the different segments of the colon that can be helpful in determining the exact subsite. The colon measures about 5 feet in length and is divided into sections. When a colonoscopy measurement is the ONLY identification of a tumor's location, use these measurements (taken from the AJCC Cancer Staging Manual 5th edition) to assign the primary site. The measurements are APPROXIMATE. This is only a guide, particularly at the ‘edges’ of the various segments.

Description of location from a barium enema or in an operative report would be better information than a colonoscopy measurement. The surgeon labels what goes to the pathologist, so the location on the path report may not be precise. When trying to determine the appropriate site for rectosigmoid and rectum tumors, you cannot always rely on distance from the anal verge alone. Practitioners measure differently. For example, if all documentation indicates that the tumor originated in the rectum, but it is stated to be 18 cm from the anal verge, assign the primary site to the rectum.

This picture also shows which areas of the colon have a serosal layer. Notice the rectum does not have a serosal layer. The visceral peritoneum does not go around to the back of the ascending and descending colon so the posterior surface is in direct contact with the retroperitoneum. Therefore, the serosa is on the front side only of the ascending and descending colon. This information is helpful when trying to determine the extension beyond the bowel wall. Anus (C21) excludes the skin of the anus and the perianal skin. Skin of the anus would be coded to C44.5 (skin).
Anus, C21, excludes skin of the anus and the perianal skin. This is coded to C44.5 (skin).
Notice peritoneum does not go around to the back of the ascending and descending colon.
One of the most important areas for staging colorectal are the layers of the bowel. The T category is based on the depth of invasion through bowel wall. The layers of the colon wall from the lumen (inside) to the pericolic fat (outside) are listed below. This list contains a little more detail than is in the picture including other common terms used to describe the layer. The pericolic fat is not technically part of the colon wall. But, it is important to understand the difference between where the subserosal fat and the pericolic fat are located. The serosa separating these two layers is only one cell layer thick. Note that the lamina propria is the dividing line between in situ and invasive lesions.

1. [Lumen—inside]
2. Mucosa
   a. Surface epithelium
   b. Lamina propria (basement membrane) - Dividing line between in situ and invasive
   c. Muscularis mucosae
3. Submucosa
4. Muscularis propria (labeled muscularis externa on this slide, but propria is the more known term)
   a. Circular layer
   b. Longitudinal layer
5. Subserosa (subserosal fat)
6. Serosa (visceral peritoneum, mesothelium)
7. [Retroperitoneal fat (pericolic fat)]
Depth through the colon wall determines the AJCC T category. Be sure to utilize the list of ambiguous terminology to determine if the layer is involved or not. For example, ‘invasion onto’ is considered involvement but ‘approaching’ is not. The best resource for ambiguous terminology is Part I of the Collaborative Stage manual.
Intra-abdominal Anatomy

- Peritoneum
  - Serosa covering portions of colon/rectum

- Visceral peritoneum
  - Covers abdominal organs

- Parietal peritoneum
  - Lines abdominal and pelvic walls

- Peritoneal cavity
  - Space between the visceral and parietal peritoneum

The serosa is a serous membrane that lines the exterior walls of a body cavity. The peritoneum is the serosa covering portions of the colon and rectum. The visceral peritoneum surrounds the organ. It covers the abdominal organs including segments of colon and rectum. The parietal peritoneum coats the body cavity. It lines the abdominal and pelvic walls. The space between the visceral and parietal peritoneum is the peritoneal cavity.

The omentum is a peritoneal fold. The greater omentum extends from the stomach to the anterior surface of the transverse colon. The mesentery is a peritoneal fold connecting the colon to the abdominal wall.
98% of colorectal cancers are adenocarcinomas. Adenocarcinomas arise two different ways:
1. from a polyp (different kinds of polyps)
2. directly from the colon mucosa (de novo).

Other cell types include GIST (gastrointestinal stromal tumor), GANT (gastrointestinal associated neuroendocrine tumor) and lymphoma.

De Novo adenocarcinomas are cancers that arise from the colon mucosa not in a polyp or adenoma. The great majority of these are coded to adenocarcinoma, NOS. Some clinicians use the term frank carcinoma to differentiate these from those that arise in polyps.

There are various types of polyps including adenomatous, villous, and tubulovillous.

In AJCC, the T category does not differentiate between polyps and frank carcinomas. The rules (under the Pathologic Staging heading) states that if the tumor is in a polyp, the T category is still based on the depth of invasion through the wall of the polyp, just as with frank carcinomas.

In Collaborative Stage, there will be special codes to identify tumors that arose in a polyp.
Terminology
- Polyp: description of a structure
- Adenoma: neoplastic mucosal growth
- Adenoma = adenomatous polyp
- Usually polyp [unspecified] is an adenomatous polyp

Adenomatous polyp: usually a predecessor of colorectal carcinoma

There are technical differences between “polyp” and “adenoma” but for purposes of the rules, they are synonymous. A polyp can either have a stalk or not.

The term ‘adenoma’ is often referred to as a polyp because of its structure. There is a lot of biological activity even though it is not considered “pre-malignant” specifically.
A polyp can either be pedunculated (on a stalk) or sessile (flat). These are structural descriptions.

Note the distance a cancer must travel to reach the muscularis in a pedunculated tumor. The submucosa where blood vessels and lymph channels occur gets pulled up into a pedunculated polyp, so there is still the potential for cancer spread in a polyp. It is a lot easier for a tumor in a sessile polyp to spread into the muscularis propria.

The other way to describe a polyp is by its texture.

- Tubular polyps have a smooth appearance.
- Villous = velvety. Villous tumors tend to be sessile more often than tubular tumors.
- Tubulovillous is a combination of both with pathologic criteria.
Listed on this slide are some of the key clinical findings to look for when reviewing the medical record. This is only a brief summary. There are many others.
Don’t forget the general rules. These still apply.
Remember the Timing Rules

- Intent is to capture the extent of disease at the time of diagnosis

- Timing for the clinical classification
- Timing for the pathologic classification

- Pay special attention to:
  - Cases treated with neoadjuvant therapy
  - Evidence of progression of disease
  - Planned first course of treatment versus subsequent treatment

Review the timing rules for the clinical and pathologic classifications. When reviewing the medical record, begin differentiating what information will qualify for the clinical classification and what will qualify for the pathologic classification.
Colorectal Criteria for Clinical Staging

- Physical examination and history
- Biopsy
- Imaging
- Endoscopy (sigmoidoscopy and colonoscopy)
- Ultrasound (EUS)
- Studies to determine pelvic extent of disease
- Studies to determine presence or absence of distant disease

Each site-specific chapter will list the examinations and procedures that qualify for clinical and pathologic staging. Those listed here are specified in the colon and rectum chapter for clinical staging. Other clinical work up may be done and can be used, these are only the common ones.
Colorectal Criteria for Pathological Staging

- Most applicable in colon and rectum cancers
- Information from clinical staging
- Surgical exploration of the abdomen
- Pathologic examination of resected specimen
- Resection of at least 10–14 regional lymph nodes

Because the T category requires the depth of invasion, pathologic staging will be the classification most applicable for these cases.

The resected specimen must be sufficient to evaluate the extension through the bowel wall. Typically, this means resection of at least the segment of colon involved but more or less extensive surgery may be performed and still provide sufficient information. For tumors in a polyp, a polypectomy can often provide sufficient information to determine the depth of invasion.

The manual recommends resection of at least 10-14 regional lymph nodes. But remember from the general rules, if less than 10 are removed, the N category can still be assigned. The N category will be based on the finding from the nodes that are removed. If only 6 are removed and all are negative, then the N will be pN0.
Based on depth of invasion of the bowel wall
The deeper the invasion, the higher the T category

T4: Based on direct invasion or adherence to other organs or structures

SS2000 Manual, pages 64–65
- Additional information on the layers of the bowel wall

For the T4 category, the involvement of other organs or structures is based on “direct extension” of the primary tumor to those structures. Direct extension means the primary tumor in the colon grew through the bowel wall and continued growing to directly invade other structures. Basically, it is one large tumor mass.

Discontinuous extension means the tumor cells broke away from the primary tumor and travelled through the lymphatic or vascular system and the tumor cells began growing in another place. Discontinuous tumor growth would be classified under the M category for distant metastasis, but be sure to check the criteria for each site as there can be exceptions. This definition applies to all sites.

The SS2000 manual provides additional information of which layers can be found in which segments of the colon that can be helpful in staging difficult cases.
The manual lists some of the terms that are synonymous with in situ. However, the report may use other terms that are not listed. This slide provides a list of some of the other commonly used terms used to describe an in situ tumor.

Referring back to the diagram of the layers of the bowel wall, for the purposes of staging, in situ tumors do not extend through the muscularis mucosae and are confined within the basement membrane (intraepithelial).
Two of the terms synonymous with in situ in the AJCC staging manual are intramucosal and invasion of lamina propria. These types of tumors are not technically in situ tumors. They are only STAGED as in situ tumors in AJCC. Even though tumors described using these two terms are categorized in AJCC stage as Tis, the ICD-O-3 behavior is NOT in situ (7/2). These tumors are staged as in situ in staging because they act like and have a similar prognosis to in situ tumors. Staging is done based on grouping cases with similar treatment and outcomes. These cases do not have a significant potential for metastasis and have an outcome similar to cases with an in situ tumor. The behavior code for these tumors of the colon and rectum is malignant (7/3), and the stage for SS2000 is local.

High grade dysplasia: Some pathologists may consider this synonymous with carcinoma in situ and call it high grade dysplasia on the path report. According to the FORDS and the ICD-O-3, HGD is not a reportable condition as there is no ICD-O-3 code. According to the CoC’s Inquiry and Response System, the AJCC Manual does not determine case eligibility. It goes further to state that these cases should be discussed by the cancer committee to determine a consensus for the facility as to whether they should be reportable or not. If so, it would be coded as carcinoma in situ with a behavior code of 7/2 (8010/2) and assigned an AJCC Tis. Also, casefinding techniques will need to be addressed to ensure that these cases can be identified.
Read the medical record and the pathology report carefully to determine the exact depth of invasion. With the use of the CAP protocol checklists, the depth of invasion should be stated on the pathology report.
“N” Category

- Regional lymph nodes
  - Listed for each section of the colon
  - Exact N category based on number of involved nodes
  - Tumor extends directly into a node, code as node involvement
    - Check with pathologist for any unknown terms describing the involved nodes
    - SS2000 Manual, page 87

- Nodes not listed as regional are considered distant

Review the section “Regional Lymph Nodes” on page 145-146. The regional nodes do vary by the colon subsite. Page 87 of the SS2000 manual has a good drawing of the regional lymph nodes. We will also review this in the CS presentation.

Direct tumor extension into lymph node: If there is direct extension of the primary tumor into a regional lymph node, code as node involvement.

It is possible that the pathologist will use older or dated terms to describe the node. Check with a pathology book, medical dictionary or the pathologist if you frequently encounter different terminology than that listed in the manual.
Review the paragraph on “Discrete foci of tumor” on page 151.

Although not extremely common, the pathology report may describe a nodule in the fatty tissue that surrounds the colon. In the staging manuals, these are referred to as tumor deposits. These tumor deposits are malignant tumor foci, malignant peritumoral deposits, or malignant satellite nodules located in the pericolorectal adipose tissue (fat) that are discontinuous from the primary tumor and show no evidence of residual lymph node. Tumor deposits are potentially important in colorectal cancers as an adverse prognostic factor.

Tumor deposits in the pericolic or perirectal fat without evidence of residual lymph node structures can be one of several aspects of the primary cancer. If present, tumor deposits may be found within the primary lymphatic drainage area of the tumor. They are different from direct extension from the primary tumor and may be the result of lymphovascular invasion with extravascular extension, a totally replaced lymph node, or discontinuous spread.

Tumor deposits without evidence of residual lymph node(s) are assigned N1c in AJCC. To clarify even further, if the primary tumor is localized (T1 or T2) and this is the only information you have on lymph nodes, then you should assign N1c. If there are tumor deposits and node involvement, code the information on node involvement. Nodules of tumor outside the primary lymphatic drainage area of the tumor are coded as distant metastases.

The paragraph also mentions the Site-Specific Factor data item, “Tumor Deposits”. The Collaborative Stage system will provide a specific data item to record information about the number of tumor deposits. Coding this information in CS will be discussed in the CS lesson.

Note: There have been some changes in the wording and application of tumor deposits between the 6th and 7th edition. This slide represents the guidelines following the 7th edition.

This and the other prognostic factors for colon and rectum will be discussed in more detail in the CS presentation.
For the M category, you are looking for discontinuous tumor involvement. These will often be detected on imaging or during surgical exploration. Be sure to look for terms that confirm it is a metastasis from the primary site you are abstracting, such as tumor in the lung consistent with metastasis from the colon cancer. When there are separate tumors involved, you have to rule out the possibility that it is due to a different primary cancer. Remember the MP/H rules exclude tumors specifically described as a metastasis from a specified primary site. Also, don’t forget the timing rules and the point in time in which the evaluation of the metastasis was made. Progression of disease is not included in the stage at diagnosis.

The exact M1 subcategory is based on the number of metastatic sites involved. If the number is not known, then assign M1 without a subcategory.

Remember there is no pathologic M0. If biopsies of a metastatic site are negative and there are no clinical evidence of metastasis, this would be a clinical M0.

If the biopsy or other resection of a metastatic site is positive, then assign pM1 (and the appropriate subcategory if applicable).
Now that you have the T, N and M for both the clinical and pathologic classifications, you can assign the Stage Group.

Remember the stage groups are purely clinical (cT cN cM) or purely pathologic (pT pN pM). You do not mix, for example, a pT with a cN, when the cN is unknown, to get a pathologic stage group. And, remember the exceptions. The M can be either pathologic or clinical and in situ tumors (Tis) is both clinical and pathologic.

The boxes at the bottom provide a few examples. As you can see, unknowns in the T, N, or M will most likely prevent the case from being assigned a stage group and will be a stage group unknown (99).
This Concludes This Presentation

Please return to the course content to complete additional case scenarios to reinforce the coding instructions.