

# Collecting Cancer Data: Colon

## NAACCR 2016-2017 Webinar Series

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### ●●● Q&A

- Please submit all questions concerning webinar content through the Q&A panel.
- Reminder:
  - If you have participants watching this webinar at your site, please collect their names and emails.
  - We will be distributing a Q&A document in about one week. This document will fully answer questions asked during the webinar and will contain any corrections that we may discover after the webinar.



## ●●● Fabulous Prizes



## ●●● Agenda

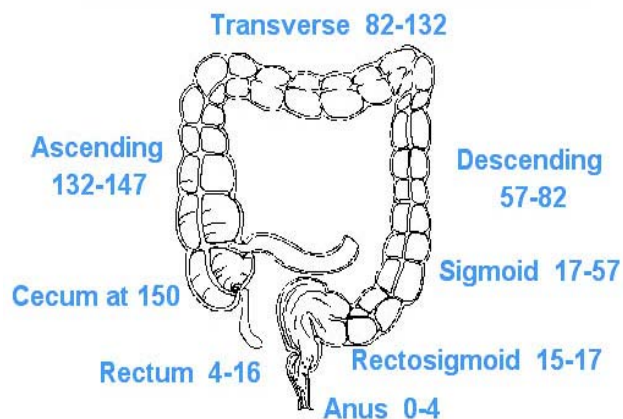
- Overview
  - Anatomy
  - MP/H
- Treatment
- Quiz
- Staging
- Quiz
- Case Scenarios



## Overview

### ●●● Anatomy

- Muscular tube about 5 feet long
- Absorbs water and salt from food
- Wall of colon consists of several layers

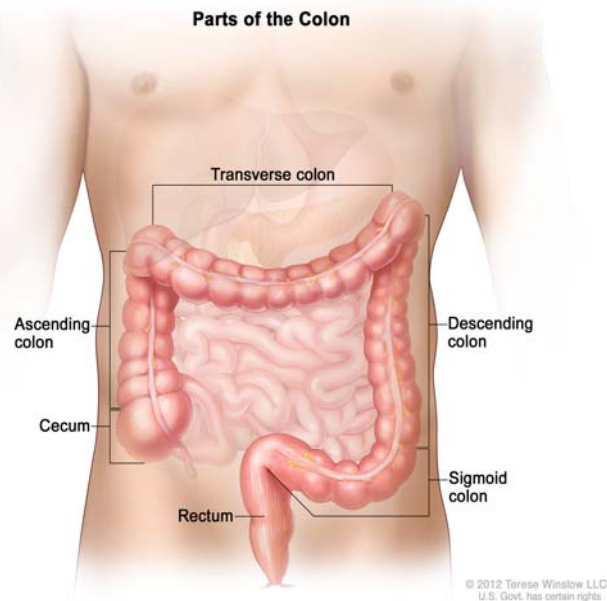


SEER Training Modules, Colorectal Cancer. U. S. National Institutes of Health, National Cancer Institute. 26 Jan 2017  
<https://training.seer.cancer.gov/colorectal/anatomy/figure/figure1.html>



## ●●● Anatomy

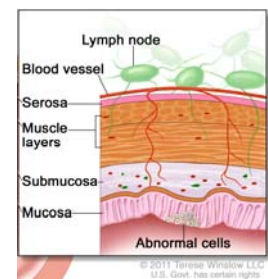
- Cecum (C18.0)
- Appendix (C18.1)
- Ascending (C18.2)
- Hepatic Flexure (C18.3)
- Transverse (C18.4)
- Splenic Flexure (C18.5)
- Descending (C18.6)
- Sigmoid (C18.7)
- Rectum (C20.9)



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## ●●● Colon Wall Layers

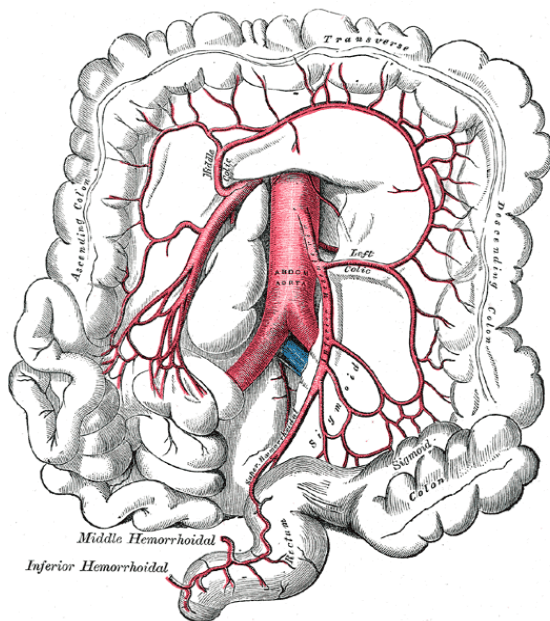
- Mucosa
  - Mucous lining of the inside of the colon
- Submucosa
  - connective tissue that hold blood vessels, lymphatics and nerve vessels
- Muscularis propria
  - Consists of two muscular layers
- Subserosa
  - Include fat and flesh between the muscularis and the serosa
- Serosa
  - Visceral peritoneum, single cell layer on outside of colon



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## ●●● Mesentery

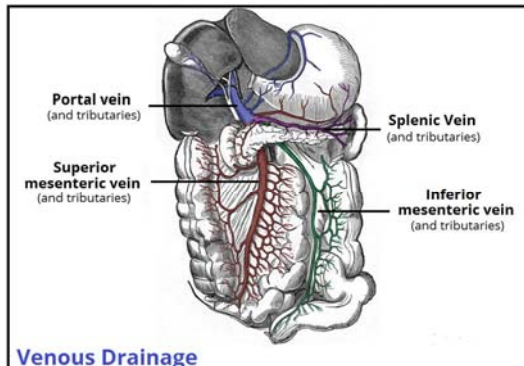
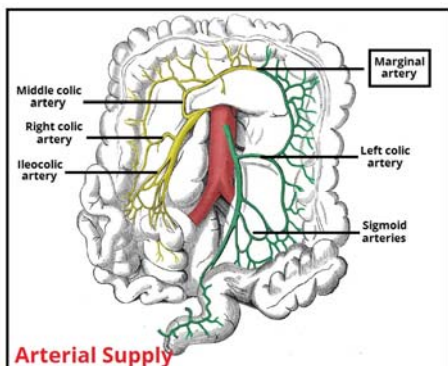
- Mesentery proper – small intestine
  - (jejunum and ileum)
- Transverse mesocolon:
  - transverse colon
- Sigmoid mesocolon
  - sigmoid colon
- Mesoappendix
  - appendix



[https://commons.wikimedia.org/wiki/File%3AInferior\\_mesenteric\\_a.gif](https://commons.wikimedia.org/wiki/File%3AInferior_mesenteric_a.gif)



## ●●● Colon Blood Supply

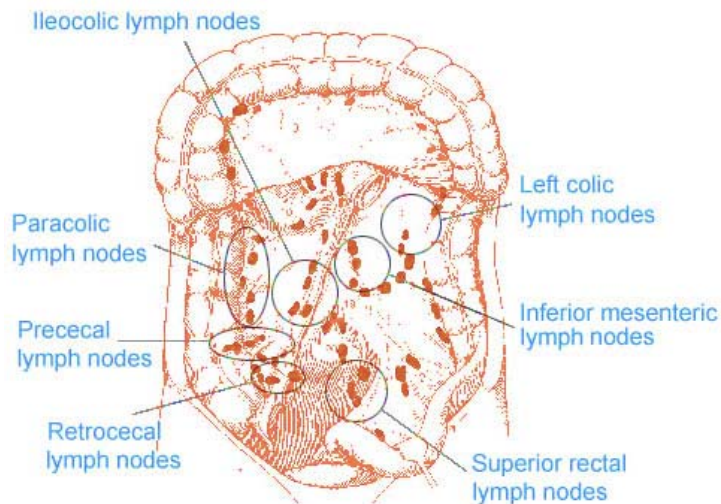


<http://teachmeanatomy.info/abdomen/gi-tract/colon/>



## Regional Lymph Nodes

- Refer to the AJCC Staging Manual for a list of regional lymph nodes

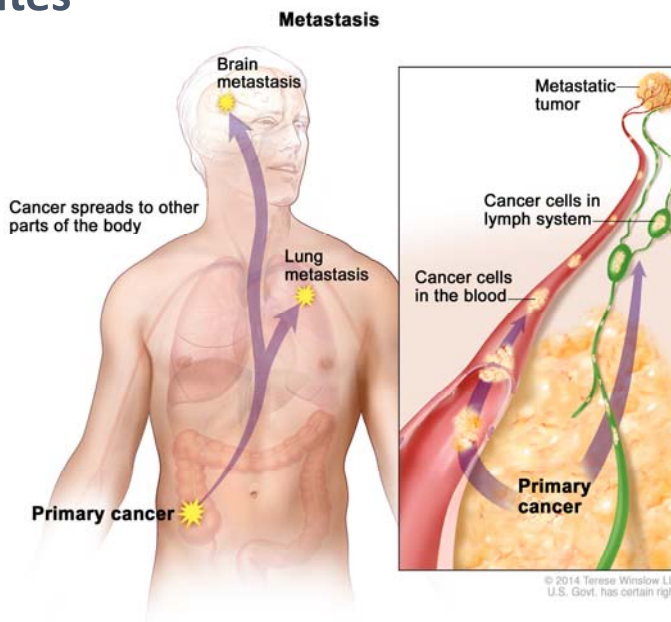


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## Common Metastatic Sites

- Liver
- Lungs
- Bone
- Distant Lymph Nodes
- Seeding



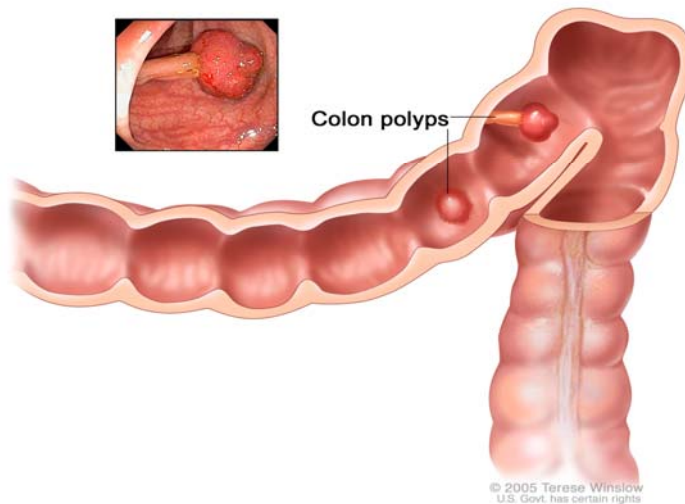
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## ●●● Pre-Cancerous Conditions

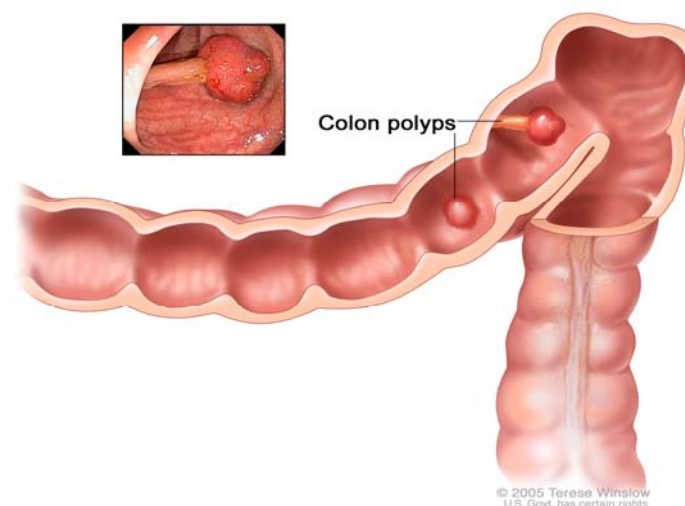
- Adenomatous polyps (adenomas)
- Hyperplastic polyps
- Dysplasia



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## ●●● Types of Polyps

- Pedunculated polyp
  - Outgrowths of the colon mucosa having a stem-like attachment.
- Sessile polyp
  - Broad based outgrowths with a flat appearance



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## ●●● Cancer in Colon and Rectum

- Adenocarcinoma
- Carcinoid Tumors
- Gastrointestinal Stromal Tumors (GISTs)
- Lymphomas
- Sarcomas



## ●●● Multiple Primary and Histology Rules

- Exophytic and polypoid not synonymous with a polyp
- Rectum and Rectosigmoid are covered by The Other Site rules
- Equivalent or Equal Terms
  - Invasion through colon wall, extension through colon wall, transmural
  - Mucin producing, mucin secreting
  - Mucinous, colloid
  - Polyp, adenoma
  - Serosa, visceral peritoneum





## ●●● Multiple Primary and Histology Rules

- Most Invasive
  - Mucosa (surface epithelium, lamina propria, basement membrane)
  - Submucosa
  - Muscularis propria
  - Subserosa
  - Retroperitoneal fat
  - Mesenteric fat
  - Serosa



## ●●● Multiple Primary Rules

- M3: Adenocarcinoma in adenomatous polyposis coli (familial polyposis) with one or more malignant polyps = single primary
- M4 Different at second (Cxxx), third (Cxxx) or fourth (C18x) character = multiple primaries
- M5 More than 1 year apart = multiple primaries



### ●●● Multiple Primary Rules

- M3: Adenocarcinoma in adenomatous polyposis coli (familial polyposis) with one or more malignant polyps = single primary
- M4 Different at second (Cxxx), third (Cxxx) or fourth (C18x) character = multiple primaries
- M5 More than 1 year apart = multiple primaries



### ●●● Multiple Primary Rules

- M7: Frank adenocarcinoma (in situ or invasive) and adenocarcinoma in a polyp (in situ or invasive) = single primary
- M10 Histology codes different at first (xxxx), second (xxxx) or third (xxxx) character = multiple primaries



### ●●● Pop Quiz 1

01/15/17 A patient presents for colonoscopy where biopsy was done on tumor found in splenic flexure (C18.5). Pathology showed adenocarcinoma. The patient has a previous primary of adenocarcinoma of the ascending colon (C18.2) that was diagnosed 12/15/2015.

- How many primaries are there
  - 2 primaries
- Which rule did you use?
  - M4



### ●●● Histology Coding Rules

- H3: Code 8140 histology is intestinal type adenocarcinoma or adenocarcinoma, intestinal type
- H4: Code 8210, 8261 or 8263 when final diagnosis is
  - Adenocarcinoma in polyp
  - Adenocarcinoma and residual polyp or polyp architecture is recorded in other parts of the pathology report
  - Adenocarcinoma and there is reference to a residual or pre-existing polyp
  - Mucinous/colloid or signet ring cell adenocarcinoma in a polyp
  - Documentation that the patient had a polypectomy



### ●●● Histology Coding Rules

- H5: Code 8480 (mucinous/colloid adenocarcinoma) or 8490 (signet ring cell carcinoma) when final diagnosis
  - Mucinous/colloid or signet ring cell carcinoma
  - Adenocarcinoma, nos and microscopic description documents 50% or more of the tumor is mucinous/colloid or signet ring cell
- H6: Code 8140 when the final diagnosis is adenocarcinoma
  - Microscopic states less than 50% of tumor is mucinous/colloid or signet ring cell carcinoma
  - Percentage of mucinous/colloid or signet ring cell is unknown
- H7: Code 8255 when combination of mucinous/colloid and signet ring cell carcinoma



### ●●● Histology Coding Rules

- H8: Code 8240 when diagnosis is neuroendocrine carcinoma and carcinoid tumor
- H9: Code 8244 when diagnosis is adenocarcinoma and carcinoid tumor
- H10: Code 8245 when diagnosis is exactly “adenocarcinoid”



## ●●● Pop Quiz 2

01/02/16 A patient was seen for a routine colonoscopy. A polyp was seen in the hepatic flexure and a polypectomy was done. The pathology came back as invasive adenocarcinoma.

- What is the histology?
  - 8210/3 adenocarcinoma in adenomatous polyp
- Which rule did you use?
  - H4



## ●●● Pop Quiz 3

12/21/16 A patient presented for partial colectomy. Pathology revealed a 2.0 cm tumor in the ascending colon, adenocarcinoma. The microscopic description stated that 65% of the tumor was mucinous.

- What is the histology?
  - 8480/3 mucinous adenocarcinoma
- Which rule did you use?
  - H5



## ●●● MPH Rules - Rectum and Rectosigmoid

- Use the Other Sites Rules
- Rule M11: Primary site differs at second or third character = multiple primaries (Cxx.x or Cxx.x)
- Rules H5, H16, H30 use of combination codes (Table 2)
- No specific rules for Mucinous/colloid or Signet Ring cell cancers



Questions?



Treatment

### ●●● Surgery - Colon

- Polypectomy
- Colectomy
  - Hemicolectomy
  - Partial colectomy
  - Segmental resection
  - Total colectomy



### ●●● Radiation Therapy - Colon

- Usually after surgery, for tumors that have attached to an internal organ or lining of abdomen.
- For patients not healthy enough for surgery
- For palliation in patients with advanced cancer causing blockage, bleeding or pain
- Mets to bone or brain



### ●●● Chemotherapy - Colon

- Adjuvant Chemo – after surgery
- Neoadjuvant chemo – to try to shrink tumor prior to surgery
- Most common drugs
  - 5-FU
  - Capecitabine
  - Irinotecan
  - Oxaliplatin
  - Trifluridine and Tipiracil



## ●●● Targeted Therapies

- Vascular Endothelial growth factor (VEGF)
  - Avastin
  - Cyramza
  - Zaltrap
- Epidermal Growth Factor Receptor (EGFR)
  - Erbitux
  - Vectibix
- Kinase Inhibitors
  - Stivarga



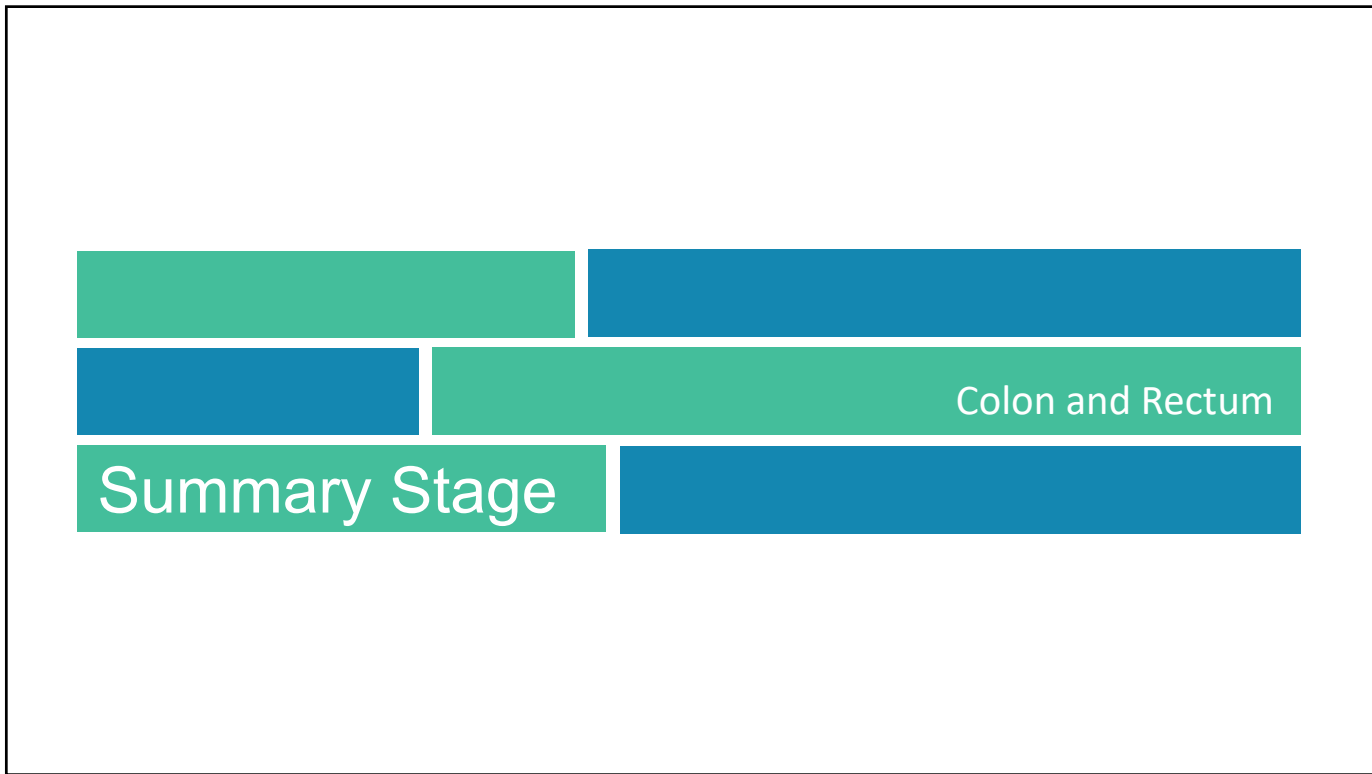
## ●●● Rectal Cancers

- Neoadjuvant Chemotherapy
- Radiation prior to surgery
- Surgery
  - Low anterior resection (LAR)
  - Hartmann's procedure
  - Anterior/posterior resection (APR)
  - Total proctectomy
    - Abdominoperineal resection (APR)



Questions?	
Quiz 1	

Staging	
Summary Stage	
TNM Stage	



●●● Anatomic Structures

- Page 64 of the SEER Summary Staging Manual 2000

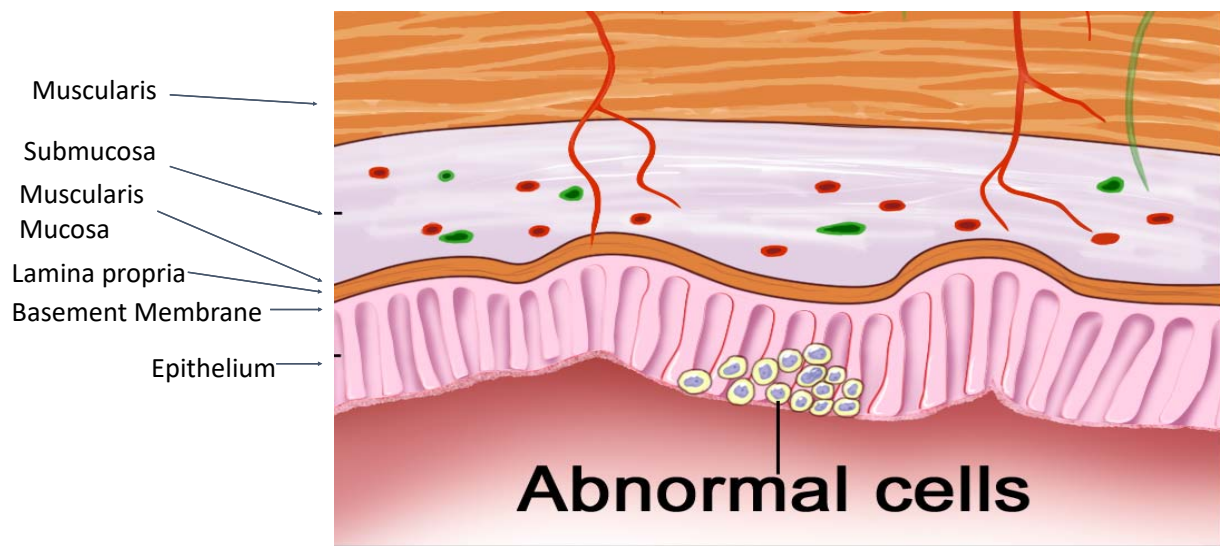
<https://seer.cancer.gov/tools/ssm/digestive.pdf>

**DIGESTIVE SYSTEM SITES  
TABLE OF ANATOMIC STRUCTURES**

PRIMARY SITE	MUCOSA				SUB-MUCOSA	MUSCULARIS	SUB-SEROSAL TISSUES <sup>1</sup>	SEROSEA <sup>2</sup>	OUTSIDE THE SEROSA <sup>3</sup>
	Epi-thelium		Lamina Propria	Muscularis					
Esophagus (C15.)	Yes	B	Yes	Yes	Yes	Yes	See note 4.	No	See note 4.
Stomach (C16.)	Yes	A	Yes	Yes	Yes	Yes	No	Yes	Greater and lesser omentum
		S							
Sm. Intestine (C17.)	Yes	E	Yes	Yes	Yes	Yes	No	Yes	Mesentery of small intestine
		M							
Colon (C18.)	Yes	E	Yes	Yes	Yes	Yes		Yes	:
.0 Cecum	Yes	N	Yes	Yes	Yes	Yes	Yes	Yes	:
.1 Appendix	Yes	T	Yes	Yes	Yes	Yes	Yes	Yes	:
.2 Ascending	Yes	M	Yes	Yes	Yes	Yes	No	See note 5.	Mesenteric or pericolic fat
.3 Hepatic flex.	Yes	E	Yes	Yes	Yes	Yes	Yes	Yes	:
.4 Transverse	Yes	M	Yes	Yes	Yes	Yes	Yes	Yes	:
.5 Splenic flex.	Yes	B	Yes	Yes	Yes	Yes	Yes	Yes	:
.6 Descending	Yes	R	Yes	Yes	Yes	Yes	No	See note 5.	:
.7 Sigmoid	Yes	A	Yes	Yes	Yes	Yes	Yes	Yes	:
.8 Overlapping	Yes	N	Yes	Yes	Yes	Yes		Yes	:
.9 Colon, NOS	Yes	E	Yes	Yes	Yes	Yes			:
Rectosigmoid (C19.9)	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Mesenteric or pericolic/perirectal fat
Rectum (C20.9)	Yes		Yes	Yes	Yes	Yes	No	No	See note 6.

1. Includes the submucosa and muscularis layers of the digestive system sites.

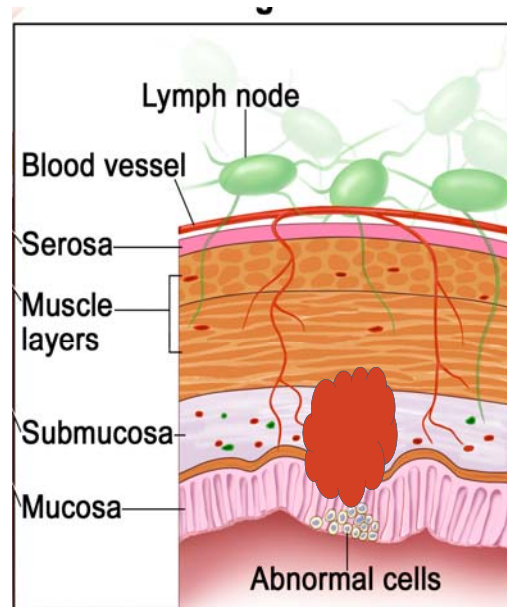
●●● Layers of the Mucosa



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●●● Localized (1)

- Invasive tumor confined to:
  - Intramucosal NOS
  - Lamina propria
  - Mucosa NOS
  - Muscularis mucosae
  - Muscularis propria
  - Perimuscular tissue invaded
  - Polyp NOS
  - Submucosa
  - Subserosal tissue/fat
  - Transmural NOS
  - Wall NOS

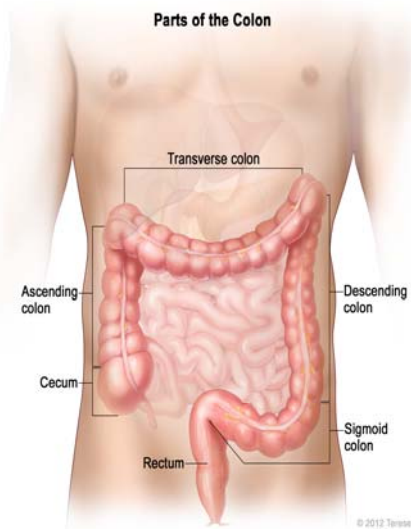


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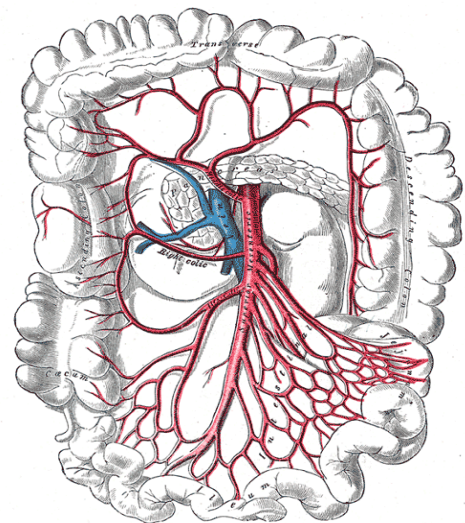
## Regional by Direct Extension (2)

- All colon sites
  - Invasion of/through serosa
  - Extension into/through:
    - Abdominal wall
    - Adjacent tissue NOS
    - Small intestine
    - Pericolic fat
- By colon subsite



## Regional to Lymph Nodes (3)

- All colon subsites:
  - Colic NOS,
  - Epicolic
  - Mesenteric NOS
  - Paracolic/pericolic
  - Regional lymph nodes NOS
- By colon subsite

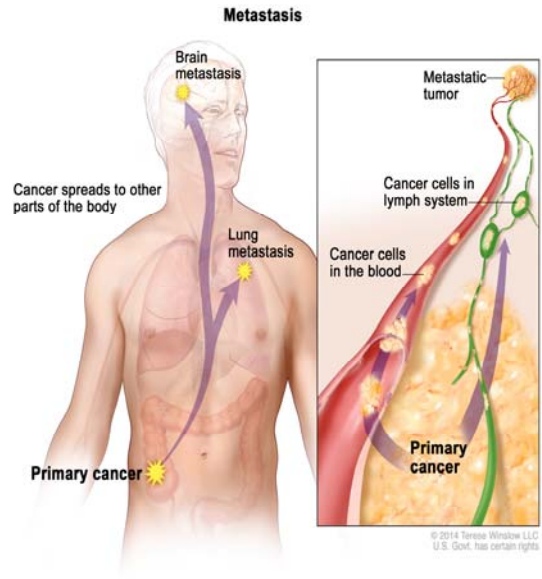


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## ●●● Distant Metastasis (7)

- Distant lymph nodes
  - All colon subsites:
    - Para-aortic, retroperitoneal, superior mesenteric, other distant
- Further contiguous extension
  - All colon subsites:
    - Adrenal, bladder, diaphragm, fallopian tube, fistula to skin, gallbladder, other segment of colon via serosa, ovary, uterus



## ●●● Pop Quiz 4

- A patient had a segmental resection of the ascending colon. The pathology showed the primary tumor extended into the pericolic fat. 12 lymph nodes were removed and 7 were found to have metastatic disease. No further disease was identified.
- What Summary Stage should be assigned?
  - 1 Localized
  - 2 Regional by direct extension
  - 3 Regional lymph nodes
  - 4 Regional by both direct extension and regional lymph nodes
  - 5 Regional NOS
  - 7 Distant metastasis.



Questions?

TNM Staging

Questions?

## ●●● Rules for Classification

- Clinical staging
  - Based on medical history, physical exam, sigmoidoscopy, and colonoscopy with biopsy
- Pathologic staging
  - Based on surgical exploration of the abdomen, cancer-directed surgical resection, and pathologic exam of resected specimen



## ●●● Pop Quiz 5

- A patient had a colonoscopy with biopsy. The biopsy confirmed adenocarcinoma of the sigmoid colon. No further staging work-up was done. The patient went on to have a segmental resection.
  - Have we met the rules for classification for clinical stage?

Yes. Colonoscopy is enough to meet the rules for classification, but probably does not give enough information to assign a T value.



### ●●● Pop Quiz 6

- A patient had a colonoscopy and biopsy. The biopsy confirmed adenocarcinoma of the descending colon. No further staging work-up was done.
- The patient returned for a segmental resection. During the procedure the surgeon found direct extension from the primary tumor into the left kidney (T4b).
- The surgeon decided not to proceed with the surgical procedure. The patient was referred to a medical oncologist for palliative chemotherapy.
  - Can the information from the surgical exploration be used for the clinical stage? Yes
  - Can the information from the surgical exploration be used for the pathologic stage? No

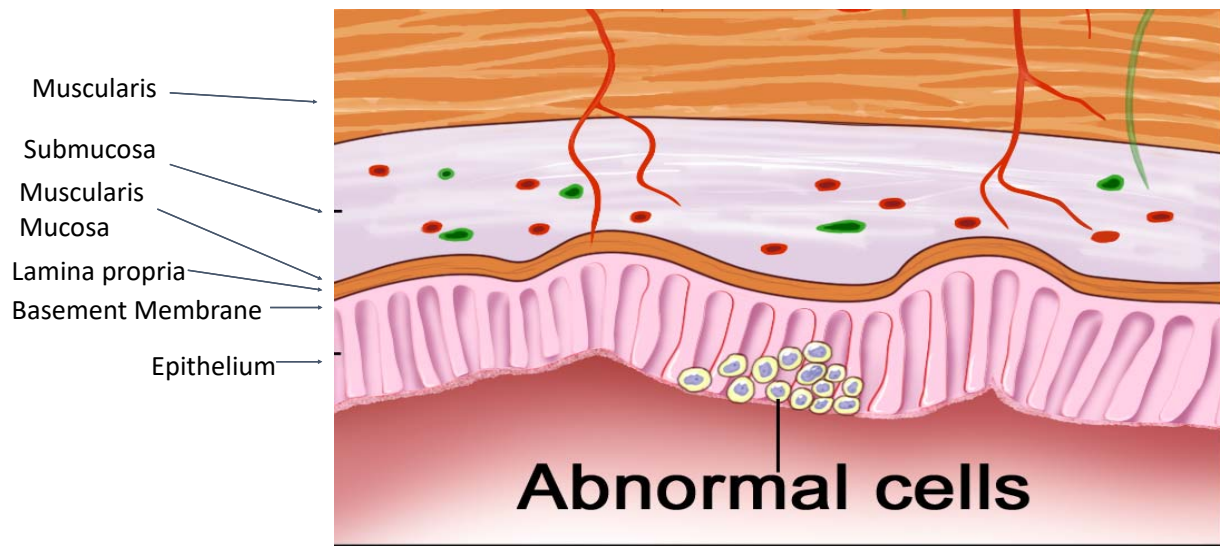


### ●●● Pop Quiz 7

- A patient had a colonoscopy and biopsy. The biopsy confirmed adenocarcinoma of the descending colon. No further staging work-up was done.
- The patient returned for a segmental resection. During the procedure the surgeon found direct extension from the primary tumor into the left kidney (T4b).
- The surgeon proceeded with the surgical procedure. Pathology confirmed direct extension into the kidney.
  - Can the information from the surgical exploration be used for the clinical stage? No
  - Can the information from the surgical exploration be used for the pathologic stage? Yes



●●● AJCC Stage 0...more than in situ!

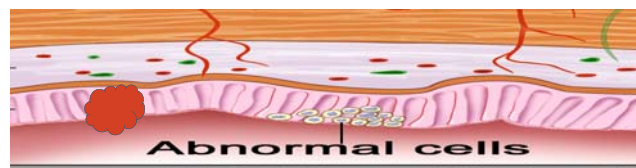


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●●● Pop Quiz 8

- A patient present for a colonoscopy with biopsy. The biopsy is positive for adenocarcinoma.
- The patient went on to have a segmental resection.
- Pathology showed adenocarcinoma that invaded into, but not through the lamina propria. No lymph nodes were removed.

Data Item	Value
Histology	8140/3
Clinical T	cTX
Clinical N	cNX
Clinical M	cM0
Clinical Stage	99
Pathologic T	pTis
Pathologic N	cN0
Pathologic M	cM0
Pathologic Stage	0
Summary Stage	1-Localized

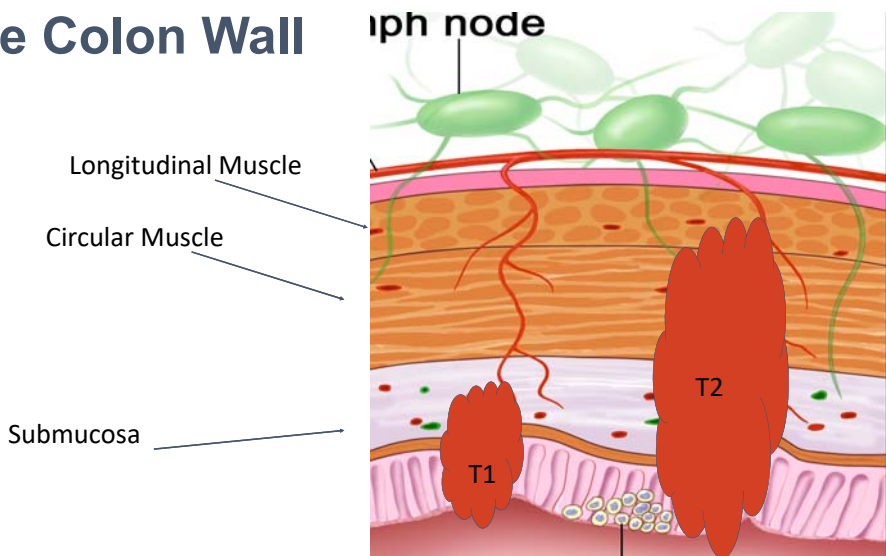


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Pg.. 143-155

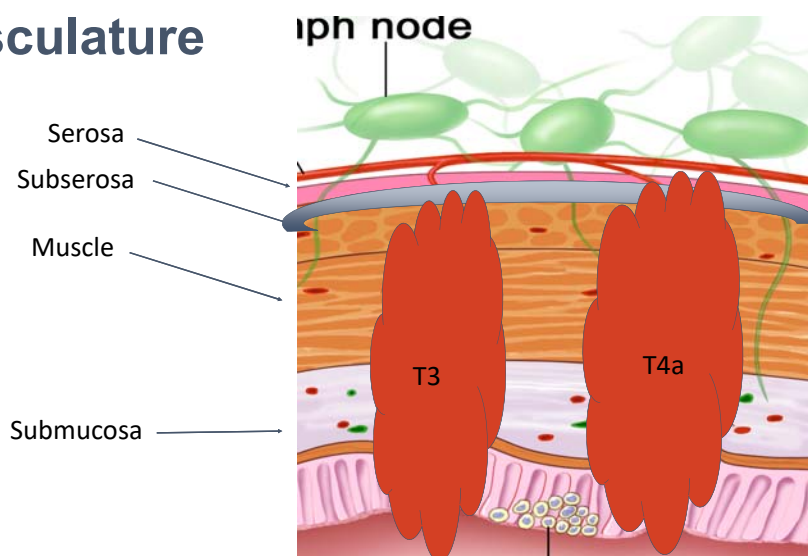
### ☘ Confined to the Colon Wall

- Invasion into, but not through the submucosa
- Invasion into, but not through the muscularis



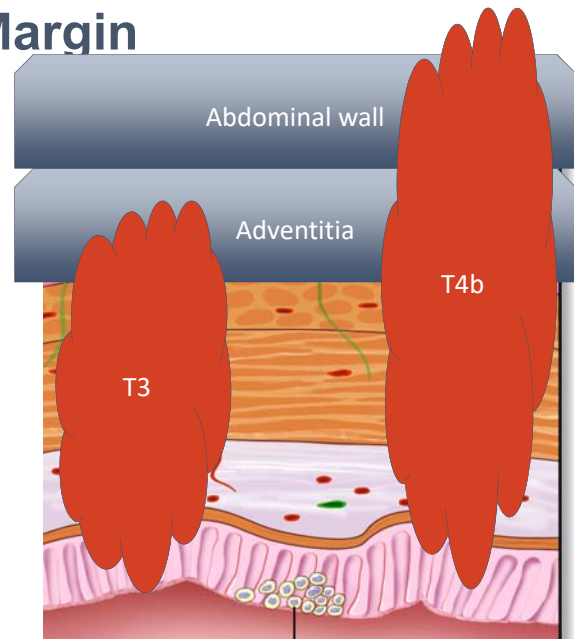
### ☘ Through the Musculature

- Invasion through the muscularis
  - No involvement of the serosa
  - No involvement of adjacent organs or structures
- Invasion into the serosa with no involvement of other sites and structures



## ••• Circumferential Resection Margin

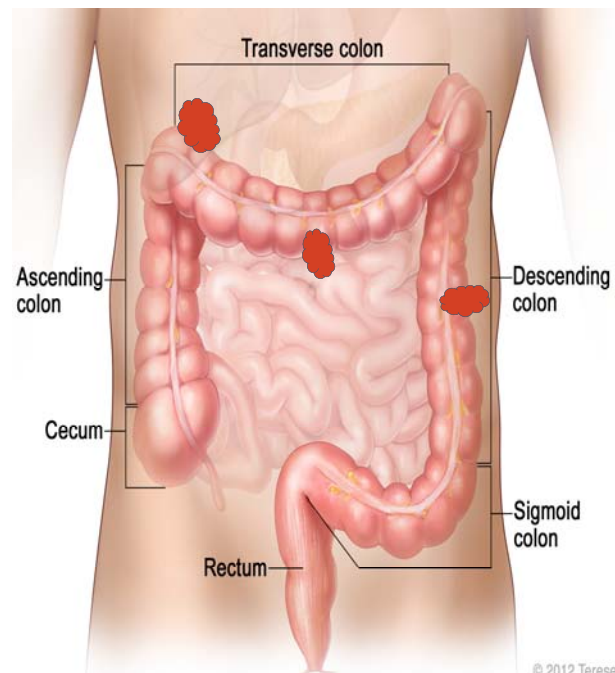
- Important for parts of the colon not covered by serosa (non-peritonealized)
  - Includes the adventitial soft tissue closest to the deepest penetration of the tumor.



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## ••• Serosa and Beyond

- Involvement of the serosa (visceral peritoneum)
- Involvement of organs or structures



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## ●●● Pop Quiz 9

- A patient had a colonoscopy and biopsy. The biopsy confirmed adenocarcinoma of the descending colon. No further staging work-up was done.
- The patient returned for a segmental resection. During the procedure the surgeon found direct extension from the primary tumor into the abdominal wall.
- The surgeon proceeded with the surgical procedure. Pathology showed that the tumor extended into the peritoneum, but the adhesions to the abdominal wall did not have any metastatic disease.
  - What is the cT? cTX
  - What is the pT? pT4a



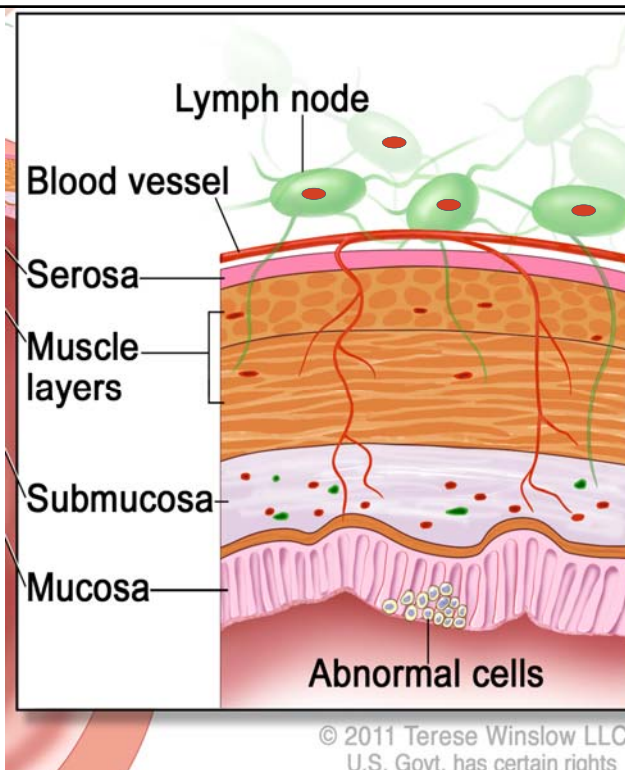
Questions?



## Does the Number of Lymph Nodes Involved Impact the Stage Group?

- Must be able to determine if 1-3 nodes were involved or if 4 or more nodes involved.
  - If you cannot differentiate between 1-3 or 4 or more, then NX
  - If you know 3 or fewer, assign N1 and you may be able to assign a stage group
  - If you know more than 4 lymph nodes are involved but you cannot differentiate between 4-6 and 7 or more, assign N2 and you may be able to assign a stage group

See stage table on page 155



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## Pop Quiz 10

- A patient presents with a recent history of anemia.
  - A colonoscopy is done and shows adenocarcinoma in the transverse colon.
  - A CT shows the tumor has perforated the colon wall and extended into the surrounding tissue, but does not appear to involve any surrounding structures or organs.
  - Also, noted are numerous malignant appearing regional lymph nodes.
  - No indication of distant mets.

Data Item	Value
Clinical T	cT4a
Clinical N	cNX
Clinical M	cM0
Clinical Stage	99

### Pop Quiz (cont)10

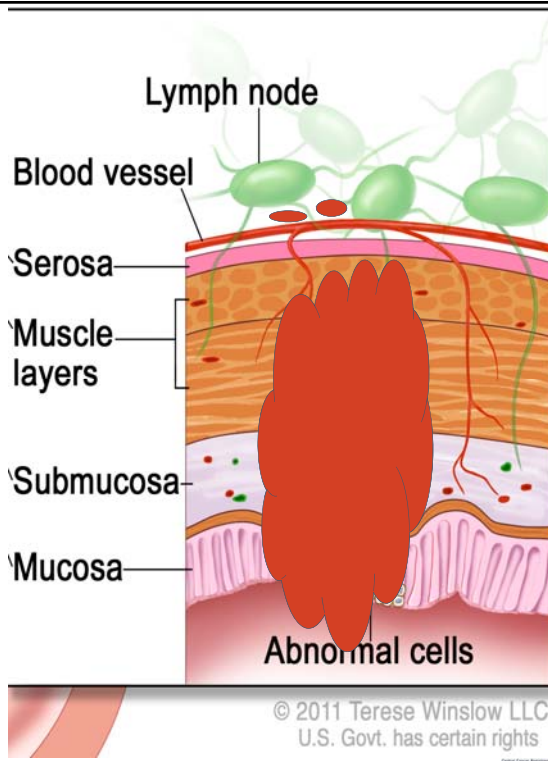
- The patient went on to have a hemicolectomy.
  - The pathology showed the primary tumor invaded through the colon wall, the visceral peritoneum and into surrounding tissue.
  - 26 lymph nodes were removed and 13 were found to be malignant.

Data Item	Value
Clinical T	cT4a
Clinical N	cNX
Clinical M	cM0
Clinical Stage	99
Pathologic T	PT4a
Pathologic N	pN2b
Pathologic M	cM0
Pathologic Stage	3C
Summary Stage	4



### Tumor Deposits (TD)

- Deposits of tumor away from the primary tumor, but within the regional lymphatic drainage area that do not show any evidence of lymph node tissue.
  - TD's do not change the T value.
  - If no positive lymph nodes, code TD as N1c.
  - If TD's are present and lymph nodes found to be positive, code N based on number of positive lymph nodes.



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## Pop Quiz 11

- A patient had a segmental resection. The pathology report showed 5 tumor deposits in the pericolic tissue adjacent to the to primary tumor and 6 lymph nodes with metastasis.

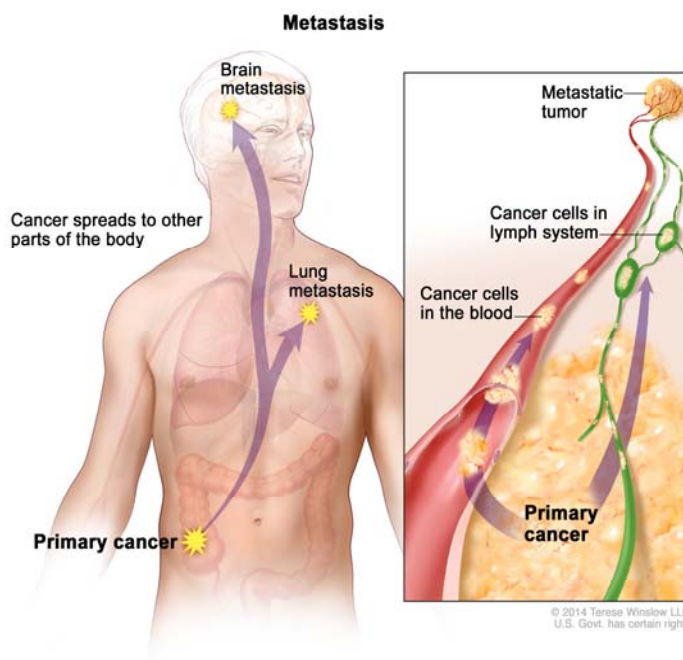
– What is the pN data item?

pN2a



## Distant Mets

- How many sites of distant metastasis are involved?



## Pop Quiz 12

- A patient is found have a mass in the liver.
  - The liver is biopsied and pathology shows adenocarcinoma most likely from a colon primary.
  - Imaging reveals a second metastatic lesion in the lung and a primary tumor in the ascending colon.
  - The patient is referred to hospice. No further work-up or treatment is done.

Data Item	Value
Clinical T	cTX
Clinical N	cN0
Clinical M	pM1b
Clinical Stage	4b
Pathologic T	
Pathologic N	
Pathologic M	pM1b
Pathologic Stage	4b
Summary Stage	7



## Neoadjuvant Treatment

- Common for rectal primaries T3 or higher.
- Often chemotherapy and radiation



### Pop Quiz 13

- A patient was found to have a large palpable rectal tumor.
- Biopsy confirmed and adenocarcinoma.
- Extensive clinical work-up showed the tumor invading through the muscle wall.
- Three enlarged malignant appearing perirectal lymph nodes were identified.
- No indication of any additional metastasis.

Data Item	Value
Clinical T	<b>cT3</b>
Clinical N	<b>cN1b</b>
Clinical M	<b>cM0</b>
Clinical Stage	<b>3B</b>



### Pop Quiz (cont) 13

- The patient received neoadjuvant chemo/radiation.
- Following completion of radiation the patient had a transabdominal resection.
  - Primary tumor was confined to the submucosa
  - 32 lymph nodes were all negative for metastasis

Data Item	Value
Clinical T	<b>cT3</b>
Clinical N	<b>cN1b</b>
Clinical M	<b>cM0</b>
Clinical Stage	<b>3B</b>
Pathologic T	<b>pT1</b>
Pathologic N	<b>pN0</b>
Pathologic M	<b>cM0</b>
Pathologic Stage	<b>1</b>
Summary Stage	<b>4</b>
Path Stage Descriptor	<b>4</b>



## Stage Groups

- Stage 1-2
  - No lymph node involvement
  - No distant metastasis
- Stage 3
  - Lymph nodes are involved
  - No distant metastasis
- Stage 4
  - Distant metastasis



Questions?

SSF's

## ••• **SSF1: Carcinoembryonic Antigen (CEA)**

- CEA
  - Is a protein molecule
  - Is a tumor marker for colorectal cancer
- SSF1
  - Record interpretation of highest CEA test result prior to treatment

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## ••• **SSF2: Clinical Assessment of Regional Lymph Nodes**

- Record clinical lymph node involvement based on diagnostic workup
  - Physical exam, imaging, diagnostic lymph node biopsy, exploratory surgery WITHOUT resection
  - Exclude endoscopy without ultrasound
- Use code 999 (unknown) if there is no diagnostic workup to assess regional node involvement
- Should reflect what was coded in cN data item

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## Pop Quiz 14

- Patient had colonoscopy with polypectomy, adenocarcinoma in tubular adenoma. After the polypectomy, patient had abdominal/pelvic CT scan that documented no lymphadenopathy. No other treatment was given.
- What is the code for SSF2?
  - a. 000: Nodes not clinically evident; imaging of regional nodes performed and nodes not mentioned
  - b. 999: Unknown

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## SSF4: Tumor Deposits

- One or more satellite peritumoral nodules in pericorectal adipose tissue without evidence of residual lymph node tissue.
- Record exact number of tumor deposits in SSF4.
- Assign code 000 (none) if resection of primary site is performed and no mention of tumor deposits.
- Assign code 998 if no surgical resection of primary site
  - Polypectomy is not resection of primary site

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## Pop Quiz 15

- A patient has a segmental resection. The pathology report showed 5 tumor deposits in the pericolic tissue adjacent to the to primary tumor and 6 lymph nodes with metastasis.
  - What is the pN data item  
pN2a
  - What is SSF 4?  
005 ssf 4



## SSF6: Circumferential Resection Margin (CRM)

- Is the measurement from deepest invasion of tumor to closest soft tissue margin
  - Radial margin, mesenteric resection margin
- Record to nearest tenth in mm exact measurement of CRM
- Assign code 998 if no surgical resection of primary site
  - Polypectomy is not resection of primary site



## Pop Quiz 16

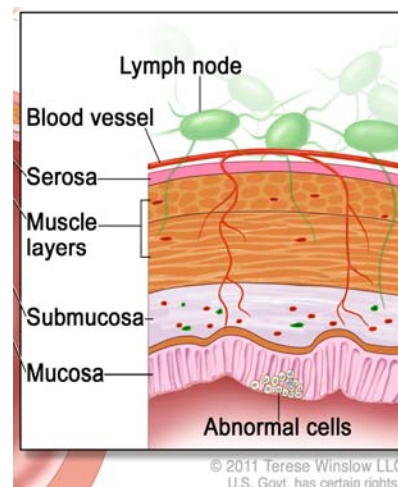
- Patient had hemicolectomy for ascending colon adenocarcinoma. Resection margins were:
  - Radial margin, serosal aspect: 0.3 mm
  - Radial margin, mesocolic aspect: 1.5 mm
- What is the code for SSF6?
  - 003
  - 015
  - 999

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## SSF8: Perineural Invasion

- Infiltration of nerves by tumor cells or spread of tumor along nerve pathway
  - Is a prognostic factor for colorectal cancer
  - Code presence or absence of perineural invasion in SSF8
- Assign code 000 (none) if histologic exam of primary site is performed and no mention of perineural invasion



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## SSF9: KRAS

- Is an oncogene that when mutated may turn a normal cell into a cancer cell
- Patients with mutated KRAS may not respond to anti-epidermal growth factor receptor drugs
- Record status of KRAS in SSF9
  - Abnormal (mutated) or Normal (wild type)

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Quiz

Questions?

### ●●● Coming Up....

- Abstracting and Coding Boot Camp: Cancer Case Scenarios  
– 3/2/2017
- Collecting Cancer Data: Lip and Oral Cavity  
– 4/13/2017



### ●●● And Our Fabulous Prizes Go To...



## ●●● CE Certificate Quiz Survey

- Phrase

- Link

<http://www.surveygizmo.com/s3/3331617/Colon-2017>



Thank You!

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