

Liver and Bile Ducts

NAACCR Webinar Series 2016-2017

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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



ICE CREAM, SHAKES & POPSICLES
SIZZLING BBQ
FUN IN THE SUN
poolside
DAD, DADDY, DADA
SUMMER
FLIP FLOPS
Sunglasses



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●●● Agenda

- Overview
 - Anatomy
 - Prognostic Factors
 - Epi Moment
- Treatment
- Quiz
- Staging
- Quiz
- Case Scenarios

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Overview

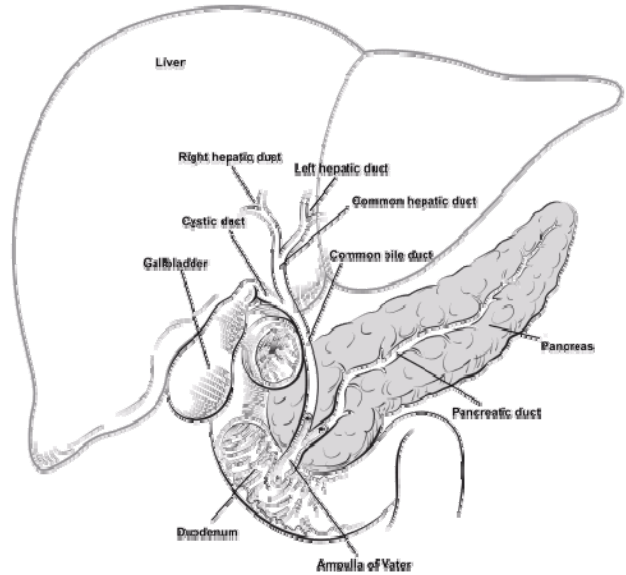
●●● Pop Quiz 1

- Liver is a common type of cancer?
- True or False

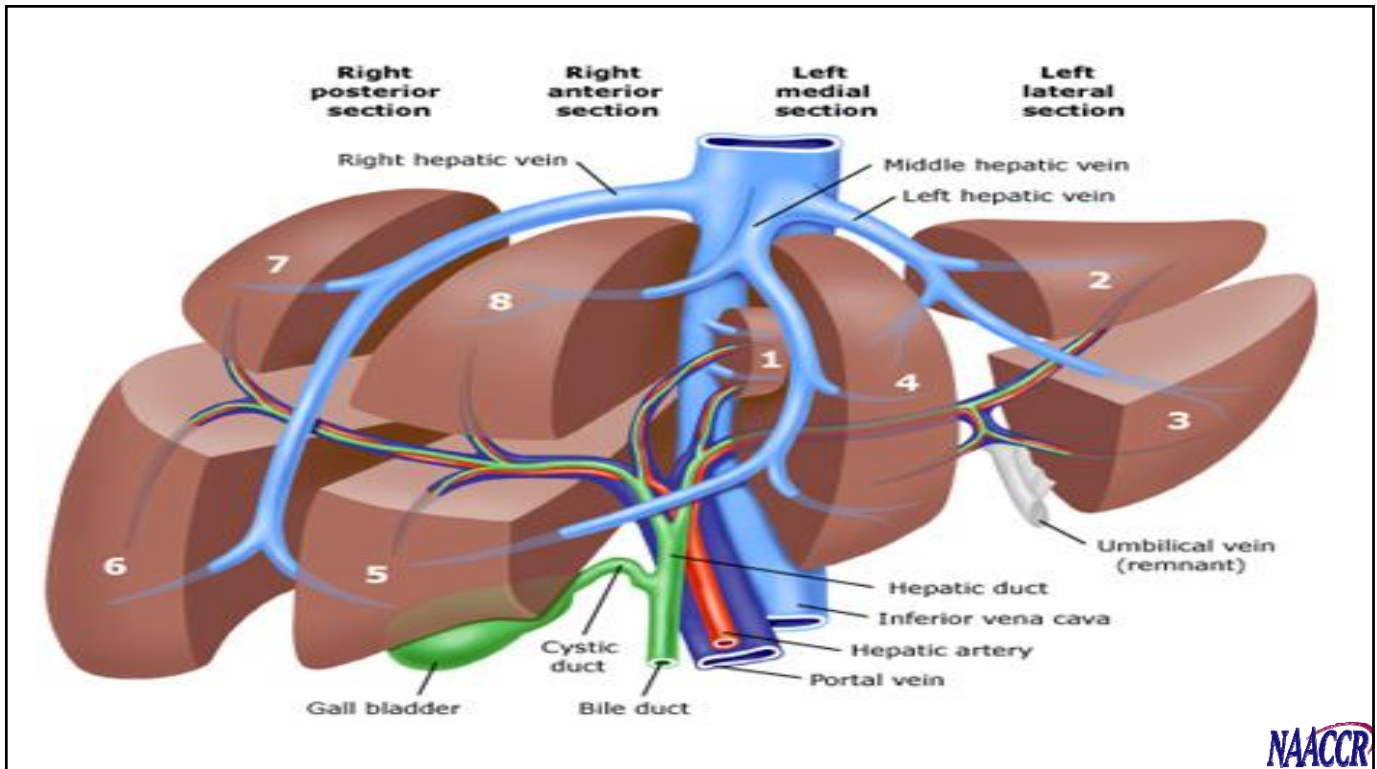
- False

●●● Anatomy

- Liver (C22.0)
- Intrahepatic Bile Ducts (C22.1)
- Extrahepatic Bile Duct (C24.0)
- Ampulla of Vater (C24.1)
- Overlapping lesion of biliary tract (C24.8)
- Biliary tract, NOS (C24.9)



<https://www.cancer.org/cancer/bile-duct-cancer/about/what-is-bile-duct-cancer.html>



●●● Lymph Nodes

- Liver
 - Hilar
 - Hepatoduodenal ligament lymph nodes
 - Caval
 - Hepatic artery and portal vein
- Intrahepatic bile duct
 - Hilar
 - Gastrohepatic (left lobe)
 - Periduodenal and peripancreatic (right lobe)
 - Inferior phrenic nodes



●●● Common Metastatic Sites

- Lung
- Abdominal lymph nodes
- Peritoneum
- Bone

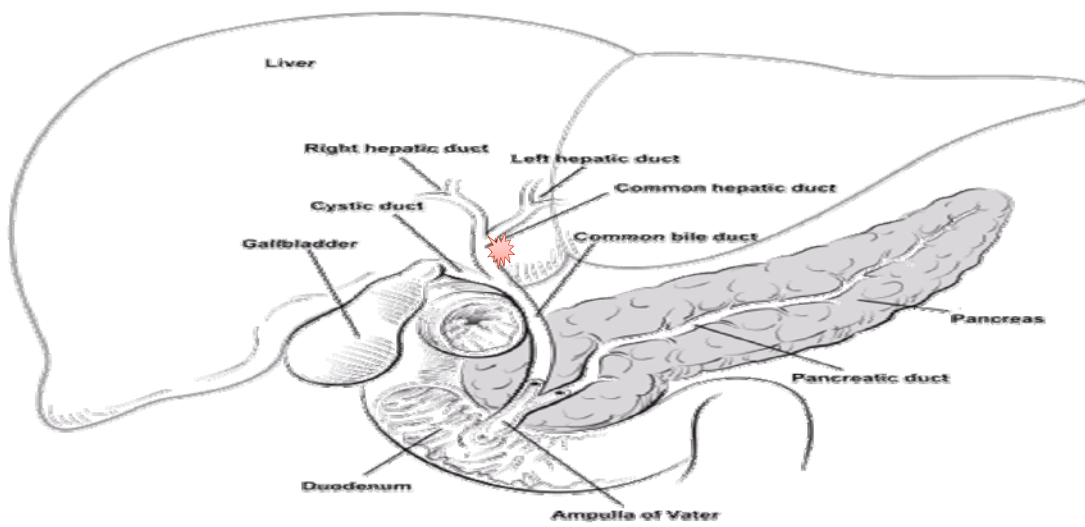


●●● Histologies

- Hepatocellular carcinomas (8170-8175)
- Cholangiocarcinoma (8160-8161)
 - Also known as bile duct carcinoma or bile duct adenocarcinoma
- Klatskin Tumor (8162)
- Combined hepatocellular carcinoma and cholangiocarcinoma (8180)



●●● Klatskin Tumor

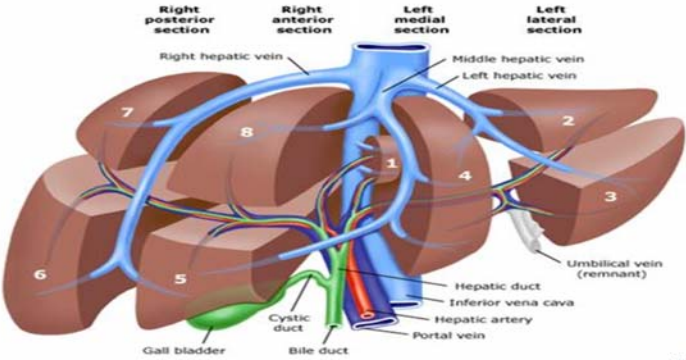


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●●● Pop Quiz

- What primary site code should be coded to cholangiocarcinoma?



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Prognostic Factors

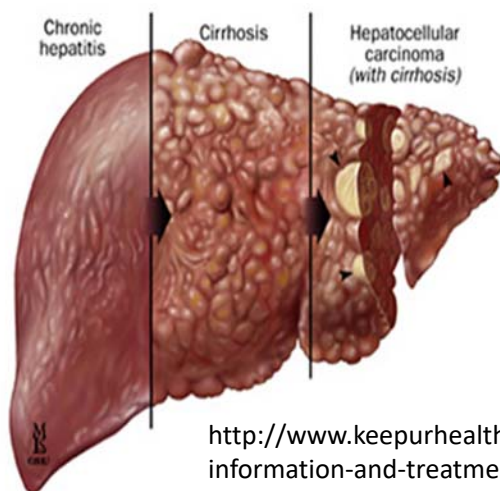
●●● Alpha Fetoprotein (AFP)

- Plasma protein
- Predictive of survival
- Monitor for response to therapy or recurrence



●●● Cirrhosis

- Healthy tissue replaced by scar tissue
- Blocks the flow of blood through the liver



●●● Fibrosis and Ishak Fibrosis Score

- Fibrous scar tissue in the liver
- Disease progression leads to cirrhosis
- Score of 1-2
 - Minimal liver scarring around liver blood vessels
- Score of 3
 - Scarring extended out from liver blood vessels
- Score of 4
 - Scarring that forms “bridges” between blood vessels
- Score of 5-6
 - Extensive scarring or cirrhosis



●●● Creatinine, Total Bilirubin, and INR

- Used in the MELD calculation
- Creatinine
 - Waste product filtered by the kidneys
 - Use the highest blood or serum creatinine value prior to treatment
- Total Bilirubin
 - Left after the breakdown of red blood cells
 - High levels can lead to jaundice
- International Normalized Ratio for Prothrombin Time (INR)





Epi Moment

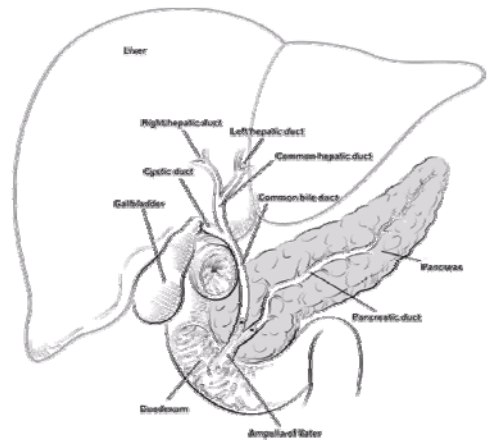
Theme song

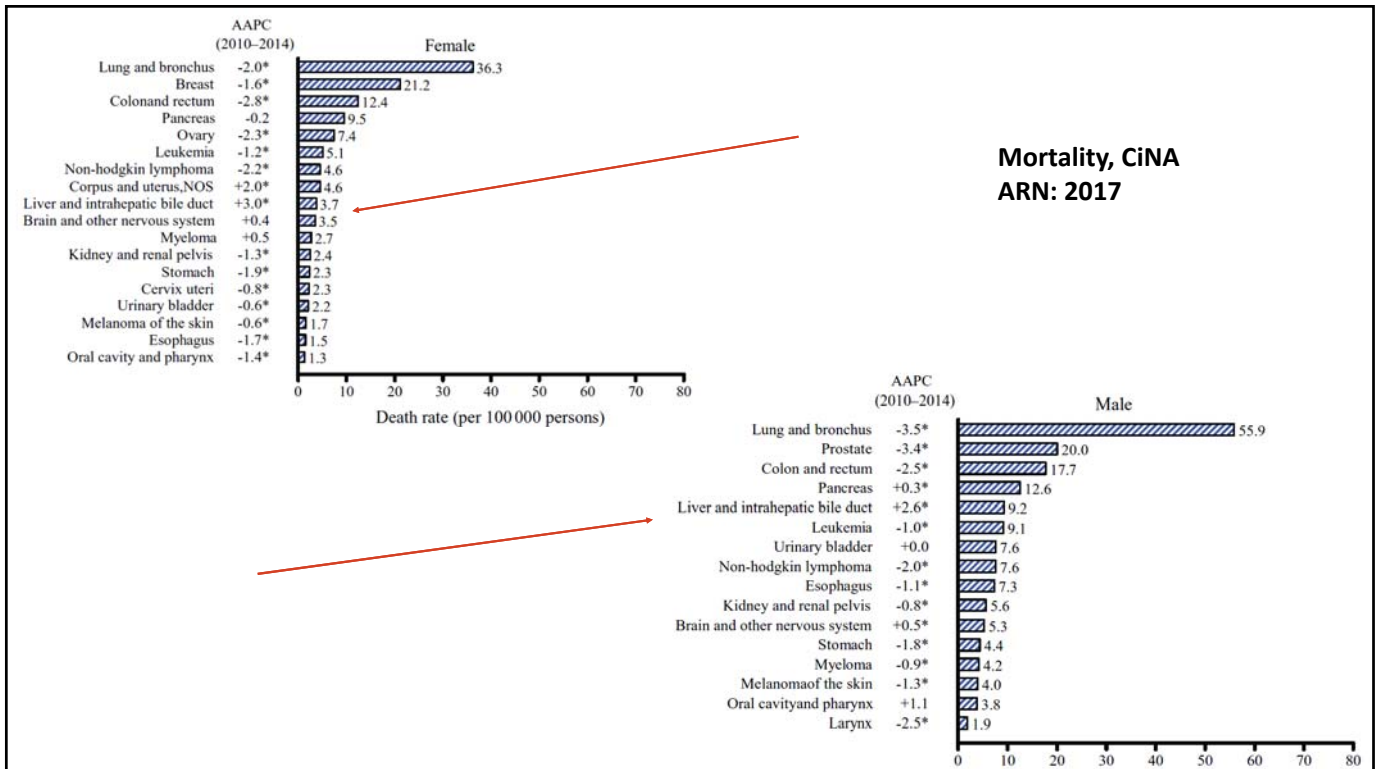
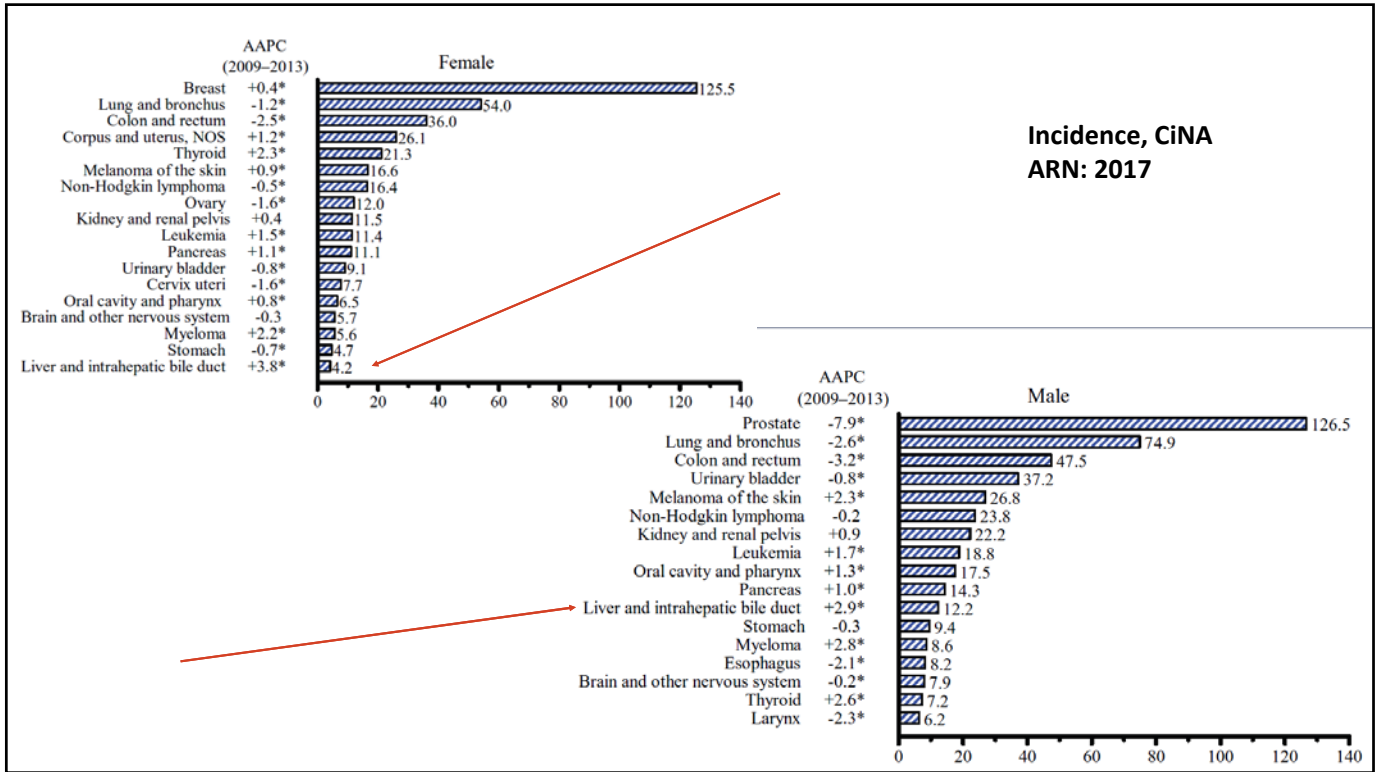
Liver and intrahepatic bile duct

Blame is on the a a a a a.....

••• Liver and intrahepatic bile duct cancers

- One of our largest organs
 - Filtration (cleansing)
 - bile production (digestion)
 - glycogen storage (energy)
- intra versus extra bile duct
 - Inside versus outside
 - Intrahepatic reported with liver
- Bile cancer less common (cholangiocarcinoma)
- Men ↑ vs women; nonwhites ↑ vs whites
 - API highest
 - Approximately 1% of US population will be diagnosed
- Mortality & survival follow similar patterns
- More common worldwide
 - 7th incidence; 2nd mortality
 - Highest rates in Asian & Africa
- Hepatocellular carcinoma (75%)
 - Hepatoblastoma (rate, pediatric)





Risk Factors

- Parasitic infections
 - *Opisthorchis viverrini*; *Clonorchis sinensis*
- Viral infections
 - Hepatitis B & C
- Heavy alcohol use/cirrhosis
 - Non-fatty liver disease
- Obesity, type 2 diabetes
- Tobacco use, steroids, aflatoxins
- Inherited metabolic disease, heredity hemochromatosis
- Rare conditions: Tyrosinemia, Glycogen storage diseases, Wilson disease
- Environmental: arsenic, vinyl chloride, thorium
- Uncertain: birth control
- Protective: coffee drinking



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Symptoms, Diagnosis & Screening

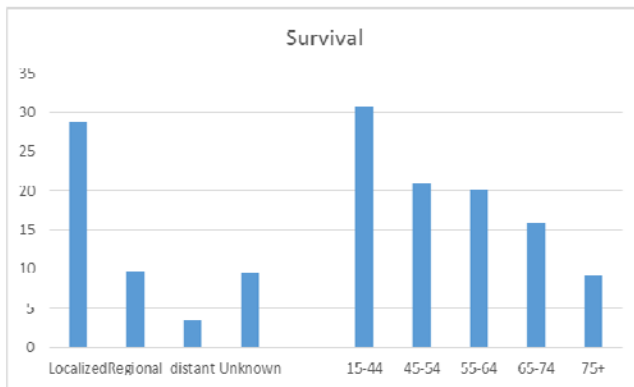
- Difficult to dx; often misclassified
- Common metastatic site
 - DCO cases
- <1/2 local at dx
- No population based screening
 - Ultrasound & other imaging
 - AFP & other blood tests
- Symptoms non-specific
 - Other liver disease



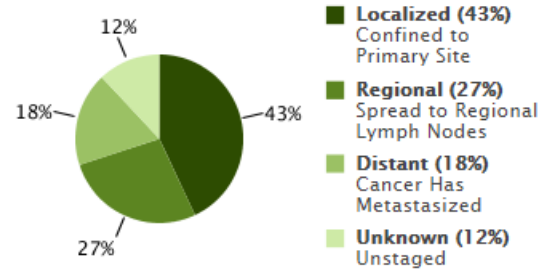
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Survival

- Lower among men, non-whites, older

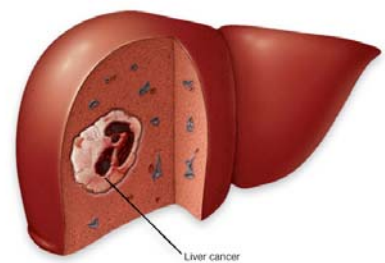


Average age at DX: 63



Current research directions

- Screening
 - DKK1
- Treatment
 - Radioembolization
 - adjuvant therapies none currently effective
 - Regorafenib (Stivarga)
 - Targeted therapy
 - JX-594
 - Virus therapy

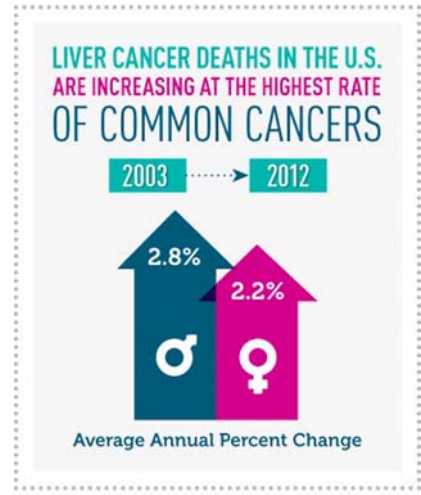


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••• Liver cancer is on the rise....?

- Increased diagnosis, screening efforts
- Increased risk
 - Viral infection, obesity, fatty liver disease, & diabetes
 - Cohort effects
 - Baby boomers



www.seer.cancer.gov
 Source: Annual Report to the Nation on the Status of Cancer, 1975-2012



●●● Prognosis and treatment options

- Depend on the stage of the cancer
- How well the liver is working
- Patient's general health
 - Cirrhosis of liver
- Seven main treatment options



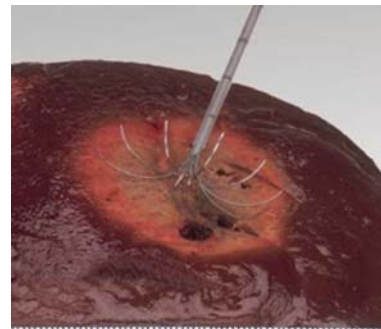
●●● Types of Treatment

- Surveillance
 - For lesions smaller than 1 cm
- Surgery
 - Partial hepatectomy
 - Liver transplant



●●● Ablation Therapy

- Radiofrequency Ablation (RFA)
 - A “heating probe” is used to destroy tumors in the liver
 - Generally done on smaller tumors
 - Can be performed during open surgery or laporoscopically
 - Coded under Surgery 16 Heat-Radio-frequency ablation (RFA)
 - Only if no specimen sent to pathology from the procedure
- Percutaneous Ethanol Injection (PEI)
 - Sterile, 100% alcohol injected into the liver to kill cancer cells
 - Code surgery code 15
- Other ablation therapies



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●●● Chemoembolization

- Transcatheter Arterial Chemoembolization (TACE)
 - 75% of the liver is supplied by the portal vein
 - Most hepatocellular carcinomas are supplied by the hepatic artery and are highly vascular
- Drug-Eluting Beads (DEB-TACE)
 - Microspheres used to embolize the tumor and release chemotherapy (doxorubicin)
- Code as chemotherapy-single or multiple agents



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●●● Transarterial Radioembolization (TARE)

- Same concept as DEB TACE, but rather than chemotherapy Yttrium-90 is used
- Code as follows
 - *Regional Treatment Modality*: 53 - Brachytherapy, interstitial, LDR
 - *Radiation Treatment Volume*: 14 – Liver
 - *Regional Dose-cGy*: 88888 - Not applicable (brachytherapy)
 - *Boost Treatment Modality*: 00 - None, no boost administered
 - *Boost Dose-cGy*: 88888 - Not applicable (brachytherapy)
- If embolization is done and there is no chemotherapy agent or radiation, code to Other

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●●● External Beam Radiation (EBRT)

- Often used on patients with 1-3 tumor with minimal or no extrahepatic disease
 - Stereotactic body radiation (SBRT)
 - Code as 41, 42, or 43
 - 3D Conformal
 - Code as 32

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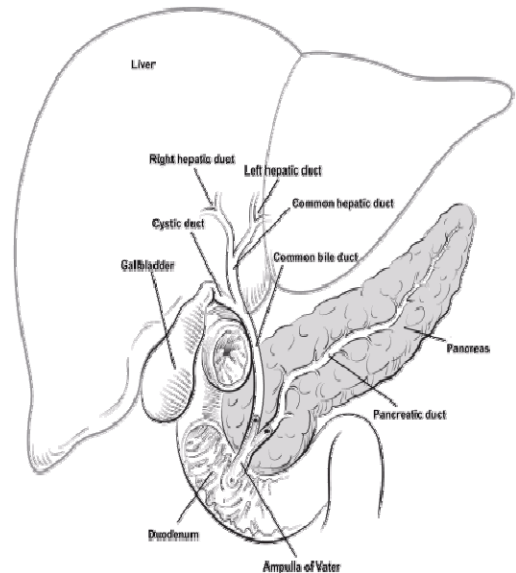
●●● Pop Quiz 2

- What treatment modality should be coded for TARE?



●●● Liver and Intrahepatic Bile Ducts

- In situ (0)
 - Noninvasive; intraepithelial
- Localized (1)
 - Confined to 1 lobe with or without vascular invasion
 - Multiple (satellite) nodules/tumors confined to 1 lobe
 - Confined to liver NOS
 - Localized NOS

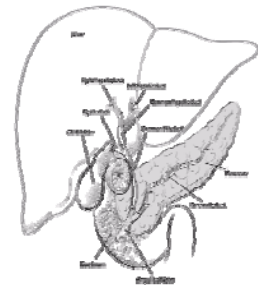


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●●● Liver and Intrahepatic Bile Ducts

Regional by Direct Extension (2)

- More than 1 lobe involved by contiguous growth (single lesion)
- Extension to:
 - Diaphragm; extrahepatic bile duct; extrahepatic blood vessel (hepatic artery, portal vein, vena cava); gallbladder; lesser omentum; ligament (coronary, falciform, hepatoduodenal, hepatogastric, triangular); peritoneum NOS (parietal, visceral)
- Multiple (satellite) nodules/tumors in more than 1 lobe of liver or on surface of parenchyma
- Satellite nodules NOS



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●●● Liver and Intrahepatic Bile Ducts

- Regional lymph nodes(s) involved only (3)
 - Hepatic NOS: Hepatic artery, hepatic pedicle, inferior vena cava, porta hepatis (portal) (hilar) [in hilus of liver]
 - Periportal
 - Regional lymph nodes NOS
- Regional by BOTH direct extension AND regional lymph node(s) involved (4)
 - Summary Stage 2000 codes 2 + 3
- Regional NOS (5)

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●●● Liver and Intrahepatic Bile Ducts

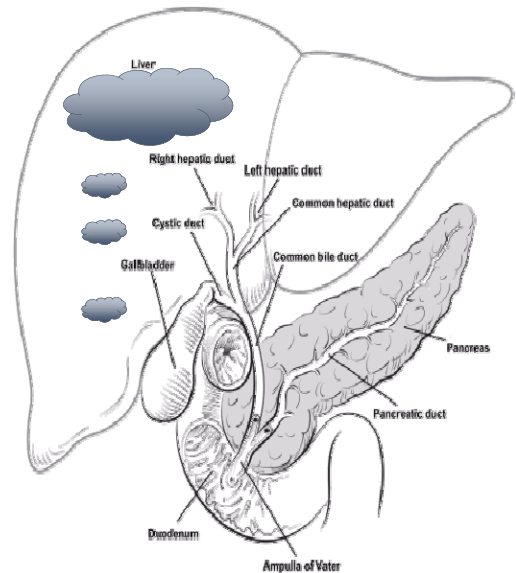
- Distant site(s)/lymph node(s) involved (7)
 - Distant lymph nodes
 - Aortic, NOS [lateral (lumbar), para-aortic, periaortic]; cardiac; coronary artery; diaphragmatic [pericardial (pericardiac)]; peripancreatic; posterior mediastinal (tracheoesophageal) including juxtaphrenic nodes; renal artery; retroperitoneal, NOS; other distant lymph nodes
 - Extension to
 - Pancreas; pleura; stomach
 - Further contiguous extension
 - Metastasis

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●●● Pop Quiz 3

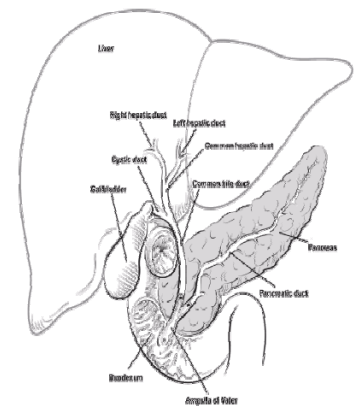
- MRI: Hepatomegaly; 7 cm right liver lobe mass with intrahepatic metastases confined to the right lobe. No vascular invasion; small hepatic nodes; no other organomegaly. Liver is cirrhotic.
- Hepatic biopsy: Hepatocellular carcinoma, grade 3.
- What is the code for Summary Stage 2000?
 - Localized



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●●● Extrahepatic Bile Duct

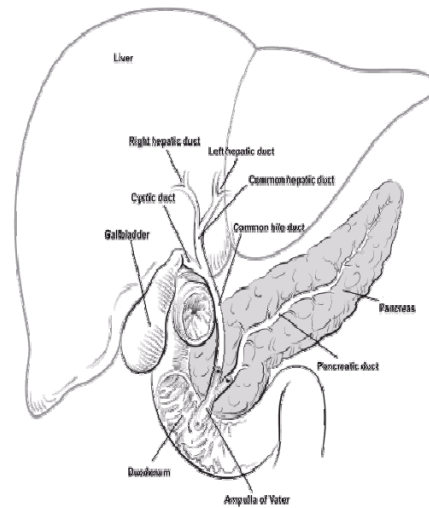
- 0 In situ:
 - Noninvasive;
 - intraepithelial
- 1 Localized only Invasive tumor confined to:
 - Lamina propria
 - Mucosa, NOS
 - Muscularis propria
 - Submucosa (superficial invasion)



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●●●● Extrahepatic Bile Duct

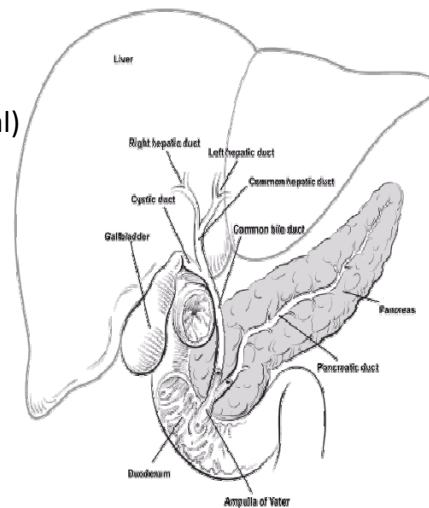
- 2 Regional by direct extension only
 - Extension to:
 - Blood vessel(s) (major):
 - Hepatic artery
 - Portal vein
 - Colon, NOS:
 - Duodenum
 - Gallbladder
 - Liver including porta hepatis
 - Omentum
 - Pancreas
 - Periductal/fibromuscular connective tissue
 - Stomach, NOS



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●●●● Extrahepatic Bile Duct

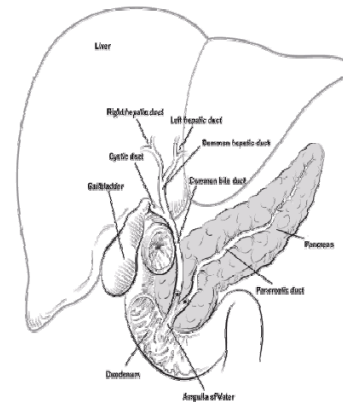
- 3 Regional lymph node(s) involved only
 - Cystic duct (Calot's node)
 - Node of the foramen of Winslow (epiploic) (omental)
 - Pancreaticoduodenal
 - Pericholedochal (common bile duct)
 - Periduodenal
 - Peripancreatic (near head of pancreas only)
 - Periportal
 - Porta hepatis (portal) (hilar) [in hilus of liver]



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●●● Extrahepatic Bile Duct

- 7 Distant site(s)/node(s) involved
 - Distant lymph node(s):
 - Celiac
 - Para-aortic
 - Superior mesenteric
 - Other distant lymph node(s)
 - Further contiguous extension
 - Metastasis



TNM Stage

Liver

See Page 193

●●● Rules for Classification

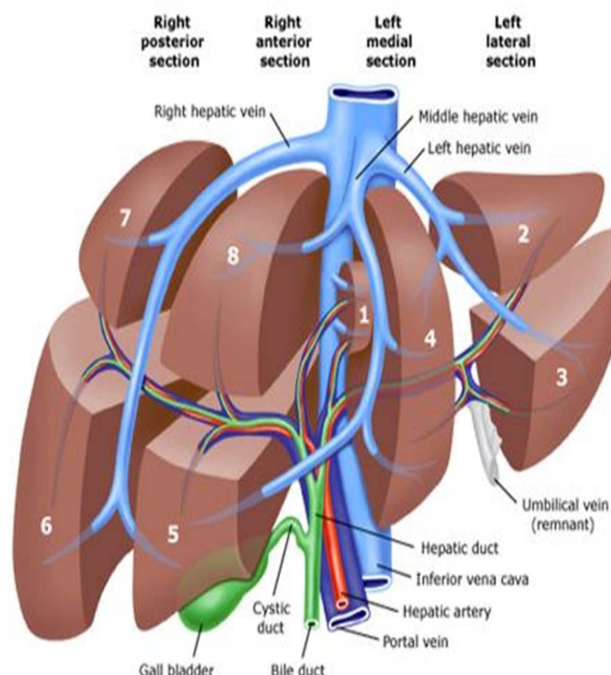
- Clinical Staging
 - Imaging techniques that clearly show the size of the tumor and vascular invasion
 - CT and MRI with intravenous contrast
- Pathologic staging
 - Pathologic evaluation of the primary tumor
 - Pathologic evaluation of regional lymph nodes



●●● Primary Tumor

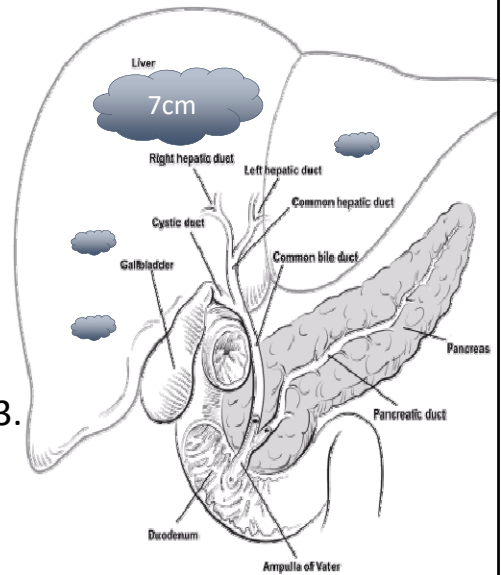
- Primary tumor is assessment
 - Size of tumor
 - Solitary vs multiple tumors
 - Major branch of the portal/hepatic vein involvement

See page 196
Blue table



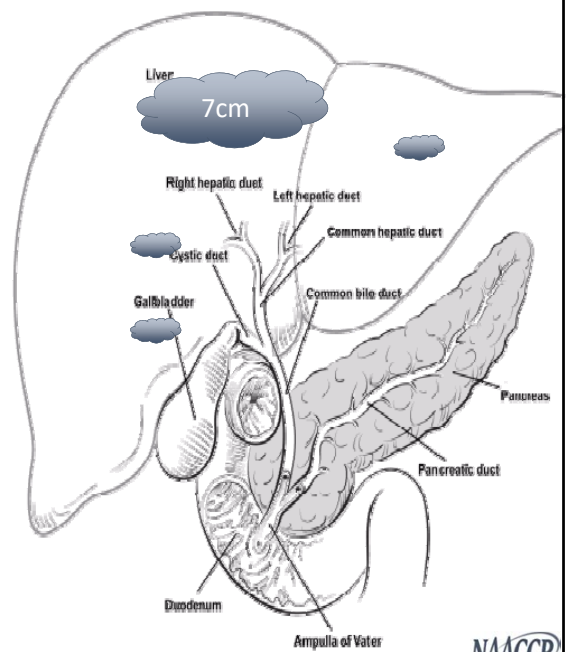
●●● Pop Quiz 4

- MRI: Hepatomegaly; 7 cm right liver lobe mass with intrahepatic metastases in both lobes.
 - No vascular invasion
 - Small hepatic nodes
 - No other organomegaly.
 - Liver is cirrhotic.
 - Patient is not a surgical candidate.
- Hepatic biopsy: Hepatocellular carcinoma, grade 3.



●●● Pop Quiz 4

Data Item	Value
Clinical T	
Clinical N	
Clinical M	
Clinical Stage	
Pathologic T	
Pathologic N	
Pathologic M	
Pathologic Stage	
Summary Stage	



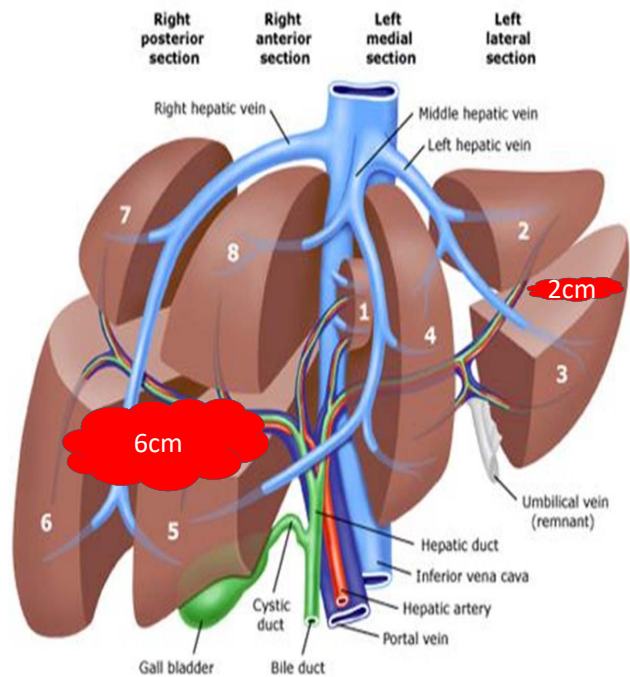
●●● Pop Quiz 5

- A CT of the abdomen showed a 6cm tumor in the left lobe of the liver with right portal vein thrombus. A second 2cm tumor was identified in the left lobe of the liver. No vascular invasion identified. No lymphadenopathy.
 - A biopsy confirmed moderately differentiated hepatocellular carcinoma



●●● Pop Quiz 5

Data Item	Value
Clinical T	
Clinical N	
Clinical M	
Clinical Stage	
Pathologic T	
Pathologic N	
Pathologic M	
Pathologic Stage	
Summary Stage	



●●● Regional Lymph Nodes

- Regional lymph node metastasis is rare in patients with hepatocellular carcinoma.
 - Prognosis is poor for patients with lymph node metastasis.
 - Prognosis is similar to that of patients with distant metastasis
- Regional lymph node metastasis is more common in patients with fibrolamellar hepatocellular carcinoma.



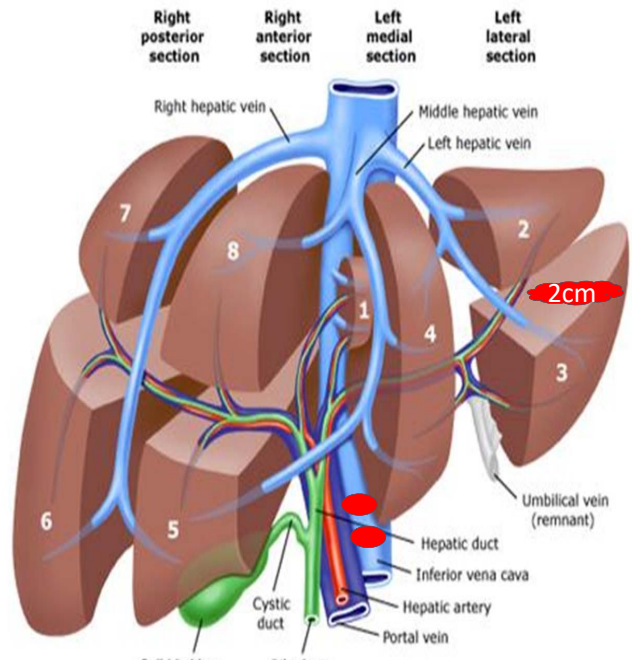
●●● Pop Quiz 6

- A CT of the abdomen showed a 2cm tumor in the left lobe of the liver.
 - No major vascular invasion identified.
 - A biopsy confirmed moderately differentiated fibrolamellar hepatocellular carcinoma
 - Metastatic lymph nodes seen along the hepatic artery
- The patient went on to have a resection of the left lobe of the liver.
 - Pathology confirmed a 2 cm moderately differentiated hepatocellular carcinoma
 - Two lymph nodes removed and found to have metastatic disease



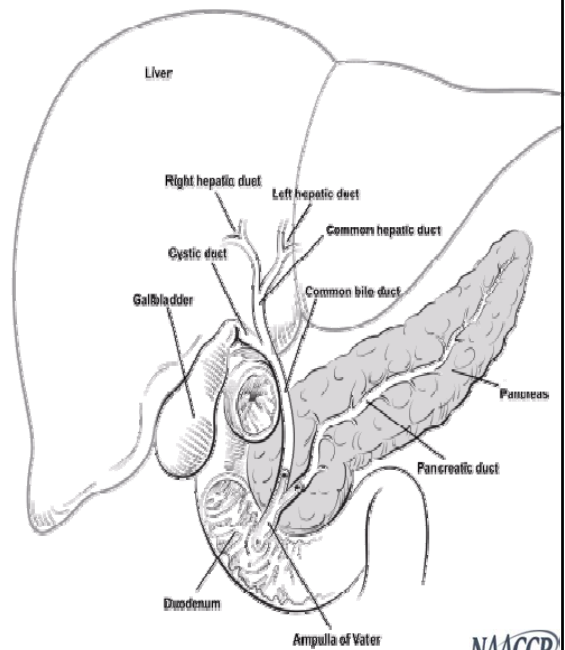
●●● Pop Quiz 6

Data Item	Value
Clinical T	
Clinical N	
Clinical M	
Clinical Stage	
Pathologic T	
Pathologic N	
Pathologic M	
Pathologic Stage	
Summary Stage	



●●● Bile Ducts

- Intrahepatic
 - Chapter 19 (pg 203)
 - C22.1
 - Cholangiocarcinoma
- Perihilar (pg 221)
 - Chapter 21
 - C24.0
 - Adenocarcinoma
- Distal (pg 229)
 - Chapter 22
 - Adenocarcinoma



●●● Pop Quiz 7

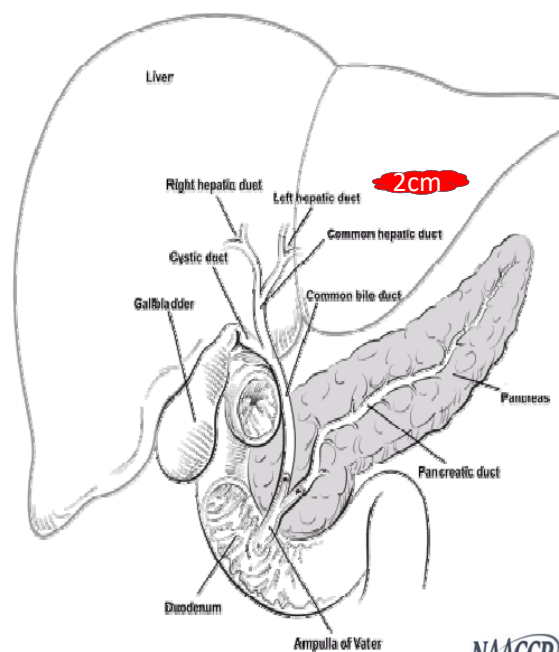
- MRI: 2 cm malignant tumor confined to left lobe of the liver with tumor thrombus of the left hepatic vein. No lymphadenopathy.
- CT scan chest: No abnormalities in lungs.
- Hepatic biopsy: Cholangiocarcinoma, grade 2

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●●● Pop Quiz 7

Data Item	Value
Clinical T	
Clinical N	
Clinical M	
Clinical Stage	
Pathologic T	
Pathologic N	
Pathologic M	
Pathologic Stage	
Summary Stage	



●●● Pop Quiz 8

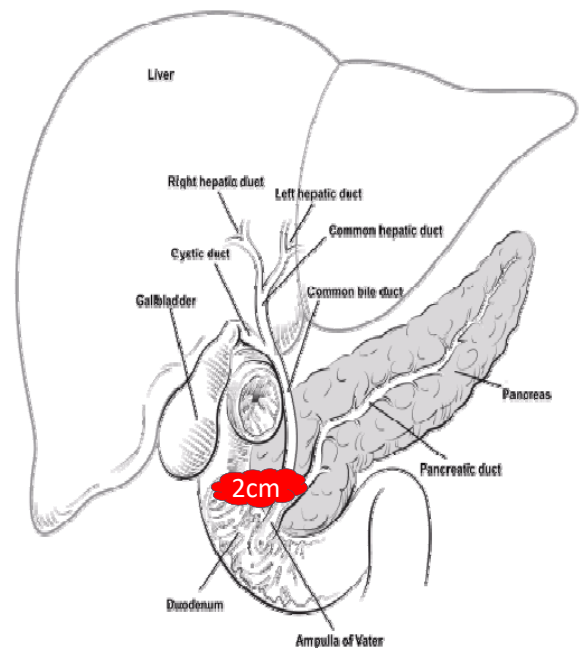
- MRI: 2 cm tumor arising in the distal bile duct. The tumor invades into the duodenum. No lymphadenopathy.
 - CT scan chest: No abnormalities in lungs.
 - Hepatic biopsy: Cholangiocarcinoma, grade 2
- Patient is not a surgical candidate.

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●●● Pop Quiz 8

Data Item	Value
Clinical T	
Clinical N	
Clinical M	
Clinical Stage	
Pathologic T	
Pathologic N	
Pathologic M	
Pathologic Stage	
Summary Stage	



●●● Coming Up....

- 7/13/17 Clinical Outcomes and Quality Improvement: Oncology Dashboard Drivers
 - Jocelyn Hoopes and Lisa Landvogt
- 8/3/13 Collecting Cancer Data: Central Nervous System



●●● And Our Fabulous Prizes Go To...



ICE CREAM, SHAKES & POPSICLES
 SIZZLING BBQ
 FUN IN THE SUN
 poolside
 DAD, DADDY, DADA
 SUMMER
 FLIP FLOPS
 Sunglasses



●●● CE Certificate Quiz Survey

- Phrase

- Link

<http://www.surveygizmo.com/s3/3594484/Liver-and-Bile-Duct>



Thank You!

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