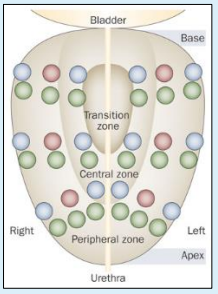
FCDS Florida Cancer Data System

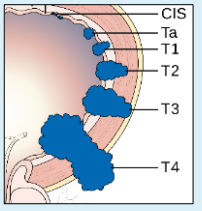
2018 Updates for Neoplasms of the Urinary System

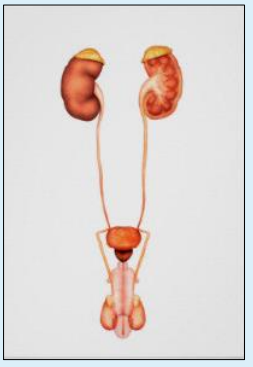
2018-2019 FCDS Educational Webcast Series

Steven Peace, CTR

January 17, 2019







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CDC & Florida DOH Attribution

"Funding for this conference was made possible (in part) by the Centers for Disease Control and Prevention. The views expressed in written conference materials or publications and by speakers and moderators do not necessarily reflect the official policies of the Department of Health and Human Services, nor does the mention of trade names, commercial practices, or organizations imply endorsement by the US Government."

CDC Centers for Disease Control and Prevention

Florida HEALTH

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FLccSC LMS – CEU Quiz –FCDS IDEA

FLccSC
Fundamental Learning Collaborative for the Cancer Surveillance Community

- 2017 - Florida Changed How FCDS Awards CEUs for FCDS Webcasts
- Attendees must take and pass a 3-5 question CEU Quiz to get CEUs
- CEU Awards are Restricted to Attendees with a FLccSC LMS Account
- The CEU Quiz will be posted to FLccSC 1-2 hours after the webcast ends

- Only registered FLccSC Users will be given access to the CEU Quiz
- Florida attendees must have a Florida FLccSC Account to take the Quiz
- South Carolina attendees must have a South Carolina FLccSC Account
- New FLccSC States will follow similar instructions for the CEU Quiz

- Attendees can attend any of the live webcasts without receiving CEUs
- Recorded Sessions are also available for non-FLccSC Users – No CEUs[3]

2018 - A Year for Major Changes to Cancer Registry Data Standards

- New ICD-O-3 Histology Code & Behavior Codes
- New Histology Coding Rules and Tools
- New Reportable Cancers
- 2018 Solid Tumor MP/H Rules
- 2018 Hematopoietic MP/H Rules
- Cancer Staging Updates
  - SS2018
  - Grade Coding
  - Site-Specific Data Items
  - AJCC TNM 8th ed.
  - 2018 SEER EOD
- EDITS v18
- STORE Manual
- 2018 FCDS DAM

Harmonization & Interconnectivity with Lots of Moving Parts

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2018 - A Year for Major Changes to Cancer Registry Data Standards

ICD-O-3 Third Edition - 2007 Updates for Selected Solid Tumors	https://seer.cancer.gov/icd-o-3/
ICD-O-3 Third Edition - 2010 Updates for Hematopoietic and Lymphoid Neoplasms	https://seer.cancer.gov/icd-o-3/
2018 Guidelines for ICD-O-3 Histology Code and Behavior Update	https://seer.cancer.gov/icd-o-3/
2018 Solid Tumor MP/H Coding Rules	https://seer.cancer.gov/tools/solidtumor/
2018 Hematopoietic Database & MPH Rules – web-based version only	http://seer.cancer.gov/seertools/hemelymph/
2018 SEER*Rx – current web version	http://seer.cancer.gov/seertools/seerrx/
2018 Grade Coding Manual, Instructions and Tables	https://apps.naaccr.org/ssdi/list/
2018 Summary Stage Manual	http://seer.cancer.gov/tools/ssm/
AJCC Cancer Staging Manual, 8th ed.	http://www.springer.com/medicine
AJCC Cancer Staging Manual, 8th ed. – errata & breast chapter replacement	https://cancerstaging.org/references-tools/deskreferences/Pages/8EUpdates.aspx#Histology/Topography
AJCC Histology and Topography Code Supplement	https://cancerstaging.org/references-tools/deskreferences/Pages/8EUpdates.aspx#Histology/Topography
2018 Site-Specific Data Items Manual	https://apps.naaccr.org/ssdi/list/
2018 Site/Type Validation Table from SEER	https://seer.cancer.gov/icd-o-3/
CoC STORE Manual - STandards for Oncology Registry Entry	https://www.facs.org/quality-programs/cancer/ncdb/registrymanuals/cocmanuals
SEER*SINQ - Inquiry System	https://seer.cancer.gov/seerinquiry/index.php
Coc Canswer - Inquiry System	http://cancerbulletin.facs.org/forums/
Your State EDITS Metafile – current version	https://fcds.med.miami.edu/inc/downloads.shtml

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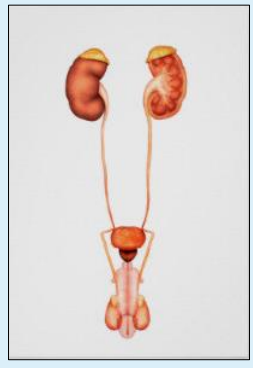
Presentation Outline

- Introduction to the Genitourinary System
- FCDS Audit of 2016/2017 GU Cancers
- Anatomy of the Genitourinary System
- Neoplasms of the Kidney
- Neoplasms of the Urothelium
- Neoplasms of the Prostate
- Text Documentation
- Practice Cases - Pending
- Questions



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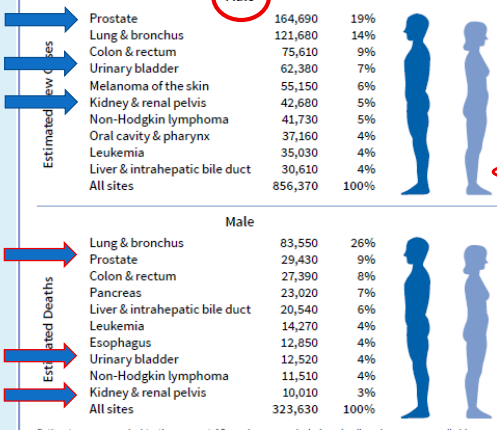
Introduction

Figure 3. Leading Sites of New Cancer Cases and Deaths – 2018 Estimates



Estimated New Cases

Male			Female		
Prostate	164,690	19%	Breast	266,120	30%
Lung & bronchus	121,680	14%	Lung & bronchus	112,350	13%
Colon & rectum	75,610	9%	Colon & rectum	64,640	7%
Urinary bladder	62,380	7%	Uterine corpus	63,230	7%
Melanoma of the skin	55,150	6%	Thyroid	40,900	5%
Kidney & renal pelvis	42,680	5%	Melanoma of the skin	36,120	4%
Non-Hodgkin lymphoma	41,730	5%	Non-Hodgkin lymphoma	32,950	4%
Oral cavity & pharynx	37,160	4%	Pancreas	26,240	3%
Leukemia	35,030	4%	Leukemia	25,270	3%
Liver & intrahepatic bile duct	30,610	4%	Kidney & renal pelvis	22,660	3%
All sites	856,370	100%	All sites	878,980	100%

Estimated Deaths

Male			Female		
Lung & bronchus	83,550	26%	Lung & bronchus	70,500	25%
Prostate	29,430	9%	Breast	40,920	14%
Colon & rectum	27,390	8%	Colon & rectum	23,240	8%
Pancreas	23,020	7%	Pancreas	21,310	7%
Liver & intrahepatic bile duct	20,540	6%	Ovary	14,070	5%
Leukemia	14,270	4%	Uterine corpus	11,350	4%
Esophagus	12,850	4%	Leukemia	10,100	4%
Urinary bladder	12,520	4%	Liver & intrahepatic bile duct	9,660	3%
Non-Hodgkin lymphoma	11,510	4%	Non-Hodgkin lymphoma	8,400	3%
Kidney & renal pelvis	10,010	3%	Brain & other nervous system	7,340	3%
All sites	323,630	100%	All sites	286,010	100%

Estimates are rounded to the nearest 10, and cases exclude basal cell and squamous cell skin cancers and in situ carcinoma except urinary bladder. Ranking is based on modeled projections and may differ from the most recent observed data.

American Cancer Society – 2018 Cancer Facts & Figures

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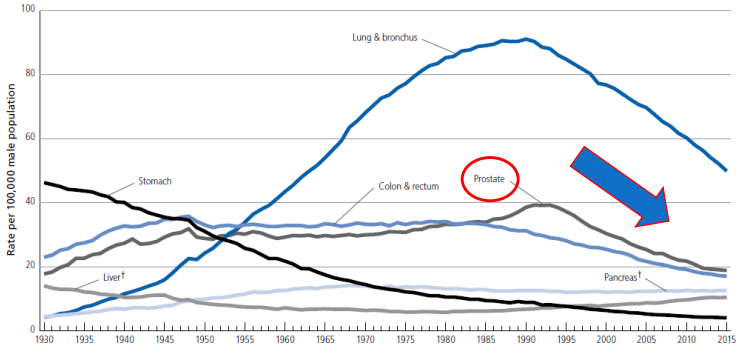
Introduction

Figure 1. Trends in Age-adjusted Cancer Death Rates* by Site, Males, US, 1930-2015



*Age adjusted to the 2000 US standard population. †Mortality rates for pancreatic and liver cancers are increasing.

Note: Due to changes in ICD coding, numerator information has changed over time. Rates for cancers of the liver, lung and bronchus, colon and rectum, and uterus are affected by these coding changes.

Source: US Mortality Volumes 1930 to 1959, US Mortality Data 1960 to 2015, National Center for Health Statistics, Centers for Disease Control and Prevention.

Source: Cancer Facts and Figures 2018

FCDS AUDIT Preliminary Results

FCDS Data Quality Audit
2016 Diagnosis Year
Urinary System including; C64.9, C65.9, C66.9, C67.0—C67.9 and C68.9 sites
All Cases Reviewed Are Analytic for the Facility

1. This study has shown that introducing a new staging system statewide even with what was expected to be sufficient training resulted in inadequate qualify of data using the new system – even among those thought to be experienced users. And, what happens when the data standard changes from something as apparently meaningless as an 'x' to <blank> making the data essentially useless. Fortunately, FCDS continued to capture the date using an older method that has not changed since 2000.
2. Registrars do not understand or do not follow the basic rules for assigning T, N, M or Group
   a. Clinical TNM and Clinical Stage Group Missing on Most Cases
   b. Pathological TNM and Path Stage Group often coded when case does not meet resection requirements for staging (partial or total cystectomy for bladder)
3. Grade of Tumor often miscoded for urothelial – low/high grade /2 versus /3 grade = I, II, III
4. Most of the Kidney cancers look pretty good – some questions about ablation technique as TX
5. Registrars still having problems with MP Rules for Urothelial Sites includes bladder. They want to report every single occurrence of cancer as new primary despite incomplete resection - TURB
6. Review Diagnostic Confirmation and No Path Cases – kidney and bladder ablation without tissue
7. It appears we are still missing a lot of mitomycin and/or BCG instillation therapy performed in physician offices. We get them in CAPIS – but, should get from both hospitals and physicians
8. Most urothelial cases have extremely limited documentation – like a pass-through case
9. Need improved communication with urology practices to ensure complete case history and case reporting – many cases reported as history of bladder cancer but no info on that history
10. Identifying behavior of tumor (in-situ or invasive) appears to be problematic for some registrars
11. Coding Nodes Examined and Nodes Positive when biopsy or aspiration of regional lymph node 95/95 not 00/98 or 01/01
12. Registrars still forgetting to code the Scope Reg LN Dissection = 1 when biopsy or aspiration of regional lymph node performed – usually same cases that miscode 95/95 for nodes+/examined
13. Registrars still coding 9's for treatment (bladder – XRT in particular) rather than 0's not done, when no further treatment would be necessary or recommended per treatment guidelines
14. Problems understanding when to code subsite and when not to – especially when multiple bladder tumors present – should be C67.9 not a single subsite and not C67.8 (overlapping sites which would be only 1 tumor overlapping subsites).
15. Related to multiple tumors in the bladder is that registrars are not setting the clinical and/or pathological descriptor used for AJCC TNM Staging to describe multiple tumors – this is not being set to '3' for multiple tumors on most of the multiple tumors in bladder cases.

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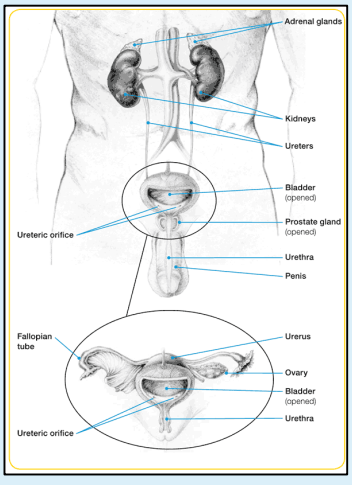
Introduction and Anatomy of the Genitourinary System



Source: http://cancervic.org.au/bladder_cancer

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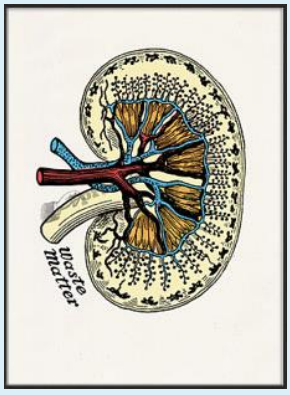
Kidney



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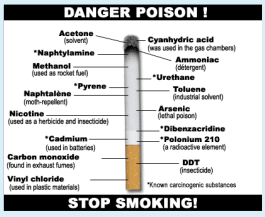
Risk Factors and Screening

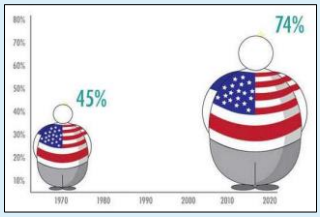
Risk Factors

- Cigarette Smoking
- Obesity (30% of cases)
- High Blood Pressure
- Chronic Kidney Disease
- Occupational Exposures
- Long-term Use of Medicines
- Family History of RCC or
- Family History of Von Hippel-Lindau Disease



Screening

- None
- Incidental Finding
  - Ultrasound
  - CT Scan



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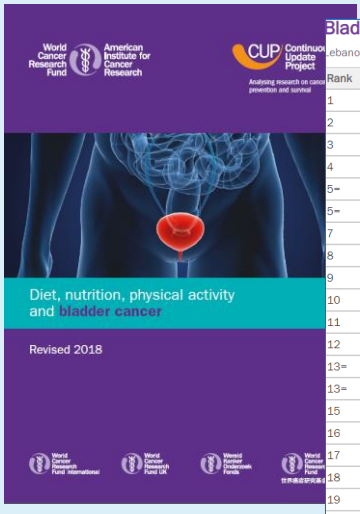
Risk Factors and Screening

World Cancer Research Fund/American Institute for Cancer Research

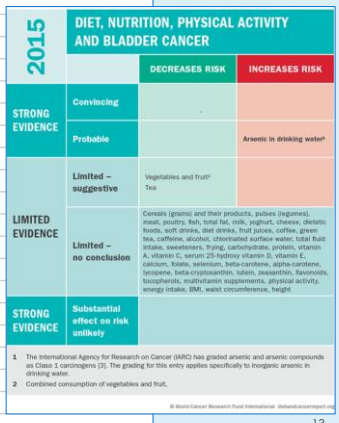


Bladder cancer rates: both sexes

Lebanon had the highest rate of bladder cancer in 2018, followed by Greece.

Rank	Country	Age-standardised rate per 100,000
1	Lebanon	25.0
2	Greece	21.2
3	Denmark	17.9
4	Hungary	16.6
5=	Albania	16.3
5=	Netherlands	16.3
7	Belgium	16.2
8	Italy	15.9
9	Germany	15.7
10	Spain	15.6
11	Serbia	15.1
12	Croatia	13.7
13=	Iceland	13.5
13=	Poland	13.5
15	Norway	13.0
16	Syria	12.9
17	Switzerland	12.7
18	Malta	12.6
19	Bulgaria	12.1
20	US	12.0

2018 Report



Signs and Symptoms

1. Flank Pain – low back pain
2. Hematuria – blood in urine
3. Abdominal Mass
4. Other
   - Weight Loss
   - Anorexia
   - Anemia
   - Polycythemia
   - Discolored Urine
   - Leg and Ankle Swelling

Flank Pain

- Pain in one side of the body between the abdomen or upper belly area and the back.
- Normally flank pain is a sign of kidney problems or kidney failure.
- Normally the flank pain is worse on one side of the body.

- - - - -

- Flank pain could be kidney stone
- Flank pain could be neoplasm
- Flank pain could be polycystic

Kidney - Workup

- History and Physical Exam
  - Genetic Testing
- Urine Cytology – blood in urine and/or cancer cells in urine
- Imaging – CT, Ultrasound, MRI, PET or PET/CT – can find incidental usually small cancers (<5cm) that are asymptomatic when looking at other illnesses like gallbladder disease
- Biopsy – histology, behavior, Fuhrman Grade
- Treatment Planning
  - Ablation
  - Resection
  - Embolization
  - Immunotherapy
  - Usually NOT Chemo

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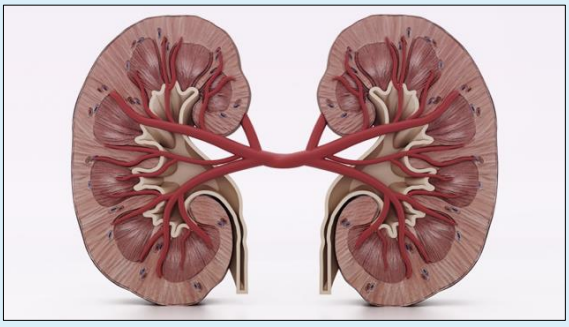
Kidney - Anatomy



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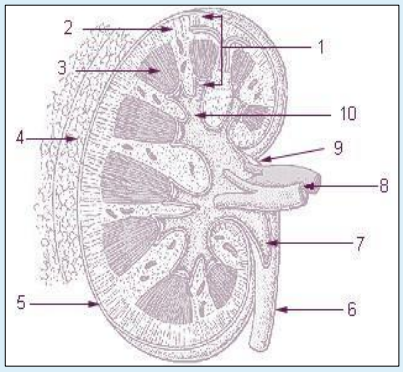
Kidney - Anatomy



1. Parenchyma
2. Cortex
3. Medulla
4. Perirenal fat
5. Capsule
6. Ureter
7. Pelvis of kidney
8. Renal vessels
9. Hilum
10. Calyx

Source: http://training.seer.cancer.gov

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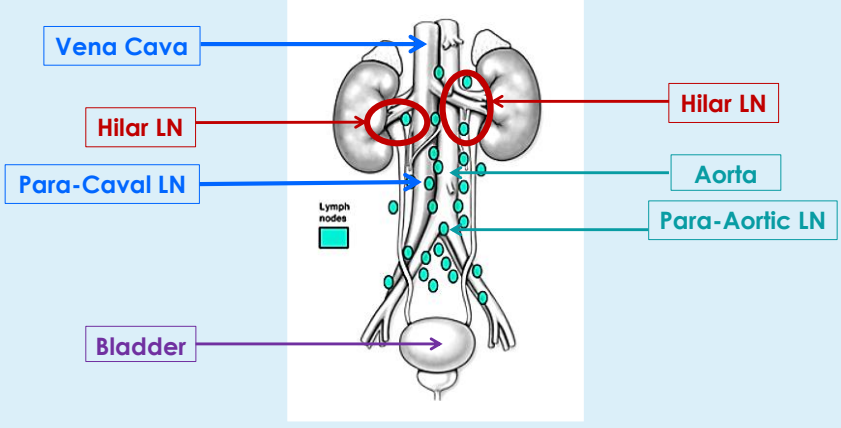
Regional Lymph Nodes



Source: http://www.laparoboticsurgery.com

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Kidney - Histology

Renal Cell Carcinoma and Renal Cell Carcinoma Subtypes

- 8312 Renal cell carcinoma is a "generic" term – do not use highest code

✓8255	Adenocarcinoma with mixed subtypes
✓8260	Papillary (Chromophil) – 15%
✓8310	Clear Cell (75%)
✓8316	Cyst associated, cystic
✓8317	Chromophobe
✓8318	Sarcomatoid (Spindle cell)
✓8319	Collecting duct type (Bellini duct)
✓8320	Granular cell
✓8510	Medullary carcinoma, NOS; medullary adenocarcinoma
✓8959	Malignant cystic nephroma

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Kidney - Histology

Component is not equivalent to subtype/variant

Status	Histology	Behavior	label	Reportable
Behavior code/term	8311	3	Hereditary leiomyomatosis & RCC- associated renal cell carcinoma (C64.9)	Y
Behavior code/term	8311	3	MiT family translocation renal cell carcinoma (C64.9)	Y
New term	8312	3	Renal cell carcinoma, unclassified (C64.9)	Y
New term	8316	3	Acquired cystic disease-associated renal cell carcinoma (RCC) (C64.9)	Y
New term	8316	3	Tubulocystic renal cell carcinoma (C64.9)	Y
New term	8480	3	Mucinous tubular and spindle cell carcinoma (C64.9)	Y
New term	8510	3	Renal medullary carcinoma (C64.9)	Y

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Kidney - Histology

Component is not equivalent to subtype/variant

Histologic Type (Note A)
___ Clear cell renal cell carcinoma
___ Multilocular cystic clear cell renal cell neoplasm of low malignant potential
___ Papillary renal cell carcinoma
___ Papillary renal cell carcinoma, Type 1
___ Papillary renal cell carcinoma, Type 2
___ Chromophobe renal cell carcinoma
___ Collecting duct carcinoma
___ Renal medullary carcinoma
___ MiT family translocation renal cell carcinoma
___ Xp11 translocation renal cell carcinoma
___ t(6;11) renal cell carcinoma
___ Mucinous tubular and spindle renal cell carcinoma
___ Tubulocystic renal cell carcinoma
___ Acquired cystic disease associated renal cell carcinoma
___ Clear cell papillary renal cell carcinoma
___ Hereditary leiomyomatosis and renal cell carcinoma-associated renal cell carcinoma
___ Succinate dehydrogenase (SDH) deficient renal cell carcinoma

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Kidney – Molecular Genetics

- **VHL/HIF** - Problems with the VHL tumor suppressor gene are found in most clear cell RCCs. This allows other genes such as the hypoxia-inducible factor (HIF) gene to be activated when they shouldn't be, which drives a cell toward being cancerous.
- **MET** – Hereditary papillary renal cell carcinoma – individuals can develop one or more papillary RCCs, but do not have tumors in other parts of the body as in the case of other disorders like VHL
- **FH** – leiomyoma and RCC
- **FLCN/BHD** – Birt-Hogg-Dube Syndrome – may develop various kidney tumors benign or malignant
- **SDHB/SDHD** – familial renal cell carcinoma – also develop paraganglioma of head and neck and pheochromocytoma of adrenal gland and thyroid cancers
- **PTEN**/Cowden Syndrome – high risk of breast, thyroid and kidney

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2018 Site Specific Grade

There are RULES for using this Manual and Menus

- **Your Software will direct you – but cannot think for you.**
  - This is the **GRADE of the PRIMARY TUMOR**.
  - DO NOT ASSIGN Grade from a metastatic site – EVER.
  - Clinical Grade Must NEVER BE BLANK
  - Either Pathological **or** Post-Therapy Grade Must BE BLANK
  - Either Pathological **or** Post-Therapy Grade Must BE FILLED
  - There are NOTES that accompany every single Grade Table.
  - DO ASSIGN the highest grade identified from any type of biopsy (FNA, core, excisional, incisional) or resection (partial or complete) of the primary tumor assessed during the clinical time frame
  - If there is only one grade available and it cannot be determined if it is clinical, pathological, or after neo-adjuvant therapy, assign as a clinical grade and code unknown (9) for pathological grade, and blank for post-therapy grade.

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2018 Site Specific Grade

- **Clinical Grade** - the grade of a solid primary tumor before any treatment. Treatment may include surgical resection, systemic therapy, radiation therapy, or neoadjuvant therapy. NOTE: All surgical procedures are not treatment, e.g. TURB and endoscopic biopsies.
- **Pathological Grade** - the grade of a solid primary tumor that has been surgically resected and for which no neoadjuvant therapy was administered. If AJCC pathological staging is being assigned, the tumor must have met the surgical resection requirements in the AJCC manual. This may include the grade from the clinical workup, as all information from diagnosis (clinical staging) through the surgical resection is used for pathological staging.
- **Post-Therapy Grade** - the grade of a solid primary tumor that has been resected following neoadjuvant therapy. If AJCC post-therapy staging is being assigned, the tumor must have met the surgical resection requirements for yp in the AJCC manual. Neoadjuvant therapy must meet guidelines or standards, and not be that given for variable or unconventional reasons as noted in the AJCC manual.

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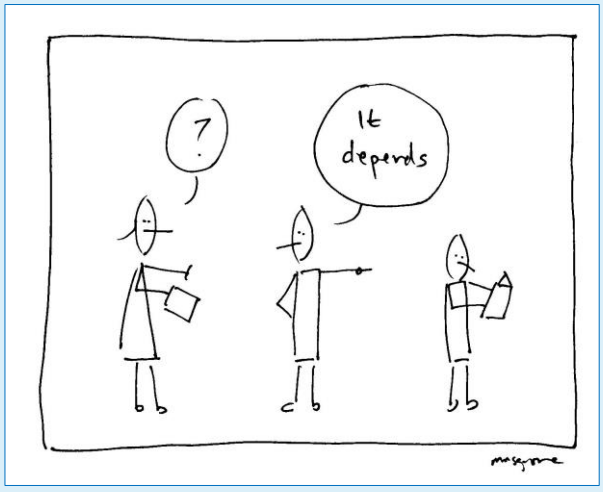
2018 Grade – Kidney



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Kidney – 2018 Grade

Grade Coding Instructions and Tables

Effective with Cases Diagnosed 1/1/2018 and Forward

Published May 2018

Editors: Jennifer Ruhl, MSHCA, RHIT, CCS, CTR, NCI SEER
Jim Hofferkamp, CTR, NAACCR
Elizabeth Ward, PhD, Consultant to NAACCR

Suggested Citation: Ruhl J, Ward E, Hofferkamp J, et al. (March 2018). Grade Manual. NAACCR, Springfield, IL 62704-4194

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Grade 18

Grade ID 18-Clinical Grade Instructions

Schema ID#	Schema ID Name	AJCC ID	AJCC Chapter
00600	Kidney	60	Kidney

Note 1: Clinical grade must not be blank.

Note 2: Assign the highest grade from the primary tumor assessed during the clinical time frame.

Note 3: Codes 1-4 take priority over codes A-D.

Note 4: The Fuhrman grade is no longer used for coding grade for Kidney cancers. The WHO/ISUP grade is now used. If the Fuhrman grade is documented, code 9.

Note 5: Code 9 when:

- Grade from primary site is not documented
- Clinical workup is not done (for example, cancer is an incidental finding during surgery for another condition)
- Grade checked "not applicable" on CAP Protocol (if available) and no other grade information is available

Note 6: If there is only one grade available and it cannot be determined if it is clinical, pathological, or after neo-adjuvant therapy, assign as a clinical grade and code unknown (9) for pathological grade, and blank for post-therapy grade.

Code	Grade Description
1	G1: Nucleoli absent or inconspicuous and basophilic at 400x magnification
2	G2: Nucleoli conspicuous and eosinophilic at 400x magnification, visible but not prominent at 100x magnification
3	G3: Nucleoli conspicuous and eosinophilic at 100x magnification
4	G4: Marked nuclear pleomorphism and/or multinucleate giant cells and/or rhabdoid and/or sarcomatoid differentiation
A	Well differentiated
B	Moderately differentiated
C	Poorly differentiated
D	Undifferentiated, anaplastic
9	Grade cannot be assessed (GX); Unknown

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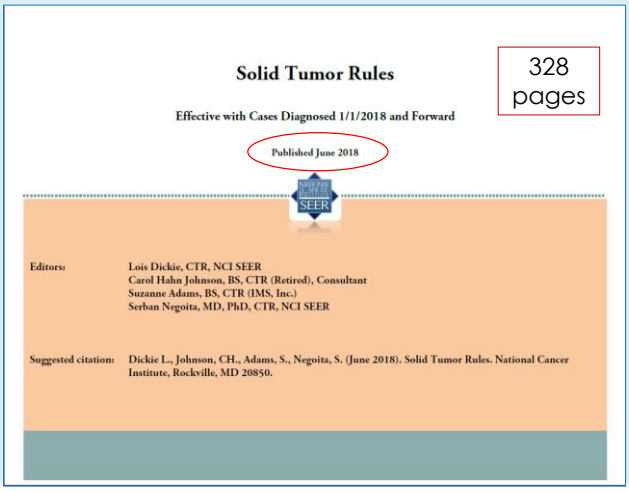
2018 Solid Tumor MP/H Rules

Published June 2018 – but still had MAJOR changes in October 2018 – be sure you have the correct set of rules



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General Instructions

- TEXT ONLY RULES INCLUDE:
  - General Instructions PLUS
  - 10 Sets of Solid Tumor MP/H Rules
  - Each Module includes Multiple Sections (Notes/Site/MP/Histology)
- Code subtypes/variants when definitively described (no modifiers)
- Do Not Use Ambiguous Terminology to Code Histology
- Ambiguous terminology is used to determine "case reportability"
- Ambiguous terminology is not to be used to determine histology
- Ambiguous terminology such as "with features of", etc. are no longer used to determine a subtype OR to determine which histology should be coded. See the following histology rules for instructions on coding multiple histologies.
- Use the Histology (H) Rules to determine when to use or not use any ambiguous terminology when an ambiguous term is used to describe a histologic type – sometimes you use the ambiguous term to code a subtype or variant or mixed histology -- and sometimes you do not.

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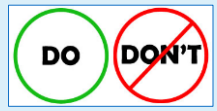
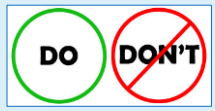
General Instructions

- **Introduction**
- Changes from 2007 MPH Rules
- **Definitions**
- Equivalent or Equal Terms
- Terms that are NOT Equivalent or Equal
- **Table and Instructions for Coding Primary Site**
- **Table: Specific Histologies, NOS and Subtypes Variants**
- **Table: Combination/Mixed Histology Codes**
- **Table: Histologies Not Reportable for This Site**
- Illustrations
- Multiple Primary Rules
- Histology Coding Rules





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General Instructions

How to Use the Solid Tumor Rules

Note: The rules do not apply to hematopoietic primaries (lymphoma and leukemia) of any site. Use the Hematopoietic & Lymphoid Neoplasm Coding Manual and Database for histologies M9590-M9992.

1. Use the following site-specific rules for tumors diagnosed 1/1/2018 and forward:
   - Malignant CNS and Peripheral Nerves
   - Non-Malignant CNS
   - Breast
   - Colon
   - Head and neck
   - Kidney
   - Lung
   - Urinary sites
2. Use the following site-specific rules for tumors diagnosed 1/1/2007 through 12/31/2018:
   - Malignant melanoma of the skin (not updated for 2018)
   - Other Sites (not updated for 2018) for solid tumors which occur in primary sites not covered by the site-specific rules.
3. 2007 MPH Rules and 2018 Solid Tumor Rules are used based on **date of diagnosis**.
   - Tumors diagnosed 01/01/2007 through 12/31/2017: Use 2007 MPH Rules
   - Tumors diagnosed 01/01/2018 and later: Use 2018 Solid Tumor Rules
   - An original tumor diagnosed before 1/1/2018 and a subsequent tumor diagnosed 1/1/2018 or later **in the same primary site**: Use the 2018 Solid Tumor Rules
4. The Solid Tumor Rules are **not used** to determine case reportability, stage, or tumor grade.
5. Other staging systems are **not used** to determine the number of primaries or histology.
6. Use rules in the following order:
   A. General Instructions
   B. Equivalent Terms and Definitions
   C. Multiple Primary rules
   D. Histology rules
7. The Solid Tumor Rules are available in text format.
8. Notes and examples are included with some of the rules to highlight key points or to add clarity to the rules.
9. Rules are in **hierarchical** order within each module. Use the first rule that applies and

STOP

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General Instructions

How to Use the Histology Rules

Note 1: Do not use these rules to determine case reportability.
Note 2: First use the Multiple Primary Rules to determine whether this is a single primary or multiple primaries. Determine the histology for each case.

1. Rules are divided into two sections: Single Tumor and Multiple Tumors Abstracted as a Single Primary
   A. Each section is a complete set of rules.
   B. Within each section, the rules are hierarchical. Use the first rule that applies and **STOP**. Do not continue through the rules.
2. Code the histology diagnosis prior to **neoadjuvant therapy**. Neoadjuvant therapy can change the histological profile of the tumor.
3. A list of terms which can be used and terms which cannot be used to code histology precede each set of histology rules.
4. Do not code histologies or subtypes/variants described by **ambiguous terms**:

Apparently	Most likely
Appears	Presumed
Comparable with	Probable
Compatible with	Suspect(ed)
Consistent with	Suspicious (for)
Favor(s)	Typical (of)
Malignant-appearing	

Note: Histology described by ambiguous terminology is coded **ONLY** when a case is accessioned based on ambiguous terminology and no other histology information is available/documented.

Ambiguous terminology from the SEER Manual and CoC Manual is used to determine reportability, not to determine histology.

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Multiple Primary Rules – Remember: Most People Have Only One Cancer

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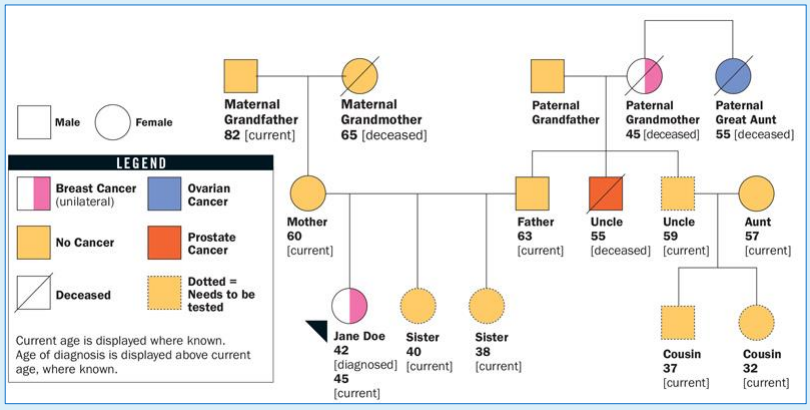
Some People or Their Families Have More Than One Cancer



https://www.curetoday.com/journey/cancer-guides/at-diagnosis/

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Kidney – 2018 Solid Tumor Rules

Note 3: **Renal cell carcinoma** (RCC) **8312** is a **group term** for glandular (adeno) carcinoma of the kidney. Approximately 85% of all malignancies of the kidney C649 are RCC or subtypes/variants of RCC.
Note 1: See Table 1 for renal cell carcinoma **subtypes/variants.**
Note 2: **Clear cell renal cell carcinoma** (ccRCC) **8310** is the most **common** subtype/variant of RCC.

Note 4: **Transitional cell carcinoma rarely** arises in the kidney C649. Transitional cell carcinoma of the upper urinary system usually arises in the renal pelvis C659. Only code a transitional cell carcinoma for kidney in the **rare** instance when **pathology confirms** the tumor originated in the kidney.

Note 5: For those sites/histologies which have recognized biomarkers, the biomarkers frequently identify the histologic type. Currently, there are clinical trials being conducted to determine whether these biomarkers can be used to identify multiple primaries. Follow the Multiple Primary Rules; do not code multiple primaries based on biomarkers.

1. **New histology terms and codes were included** (identified by asterisks (*) in the histology table in the Terms and Definitions).
   A. Histologies with terms that indicate they are **hereditary** (hereditary leiomyomatosis and renal cell carcinoma syndrome–associated RCC **8311**)
   B. Histologies with **genetic anomalies** (succinate dehydrogenase–deficient RCC)

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Kidney – 2018 Solid Tumor Rules

Not Reportable Histology Term and Code	Synonyms
Adult cystic teratoma **8959/0**	Mixed epithelial and stromal tumor Renal epithelial stromal tumor
Angiomyolipoma **8860/0**	
Congenital mesoblastic nephroma **8960/1**	CMN
Cystic partially-differentiated nephroblastoma **8959/1**	
Epithelioid angiolipoma **8860/1***	
Hemangioblastoma **9161/1**	
Hemangioma **9120/0**	
Juxtaglomerular cell tumor **8361/0**	
Leiomyoma **8890/0**	
Lymphangioma **9170/0**	
Metanephric adenofibroma **9013/0**	Nephrogenic adenofibroma
Metanephric adenoma **8325/0**	
Metanephric stromal tumor **8935/1**	
Multilocular cystic renal neoplasm of low malignant potential **8316/1***	
Nephrogenic rests **(no code)**	
Oncocytoma **8290/0**	
Papillary adenoma **8260/0**	
Paraganglioma **8700/0**	Extra-adrenal pheochromocytoma
Pediatric cystic nephroma **8959/0**	
Renomedullary interstitial cell tumor **8966/0**	Medullary fibroma
Schwannoma **9560/0**	
Solitary fibrous tumor **8815/1**	

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Kidney – 2018 Solid Tumor Rules

NOS/Specific Histology Term and Code	Synonyms	Subtypes/Variants
Nephroblastoma **8960**	Wilms tumor	
Renal cell carcinoma NOS **8312** *Note 1:* WHO, IARC, and CAP agree that sarcomatoid carcinoma is a pattern of differentiation, not a specific subtype, of renal cell carcinoma. *Note 2:* Sarcomatoid is listed in the CAP Kidney protocol under the header "features."	RCC Sarcomatoid carcinoma Sarcomatoid renal cell carcinoma Succinate dehydrogenase-deficient renal cell carcinoma (SDHD) Unclassified renal cell carcinoma	Acquired cystic disease-associated renal cell carcinoma/tubulocystic renal cell carcinoma **8316*** Chromophobe renal cell carcinoma (ChRCC) **8317** Clear cell papillary renal cell carcinoma **8323/3** *Note:* The 2016 WHO 4th Edition Classification of Tumors of the Urinary System and Male Genital Organs has reclassified this histology as a /1 because it is low nuclear grade and is now thought to be a neoplasia. This change was not implemented in the 2018 ICD-O update. Clear cell renal cell carcinoma (ccRCC) **8310** Collecting duct carcinoma **8319** Hereditary leiomyomatosis and renal cell carcinoma-associated renal cell carcinoma **8311*** MiT family translocation renal cell carcinomas **8311*** *Note:* Hereditary leiomyomatosis and renal cell carcinoma-associated renal cell carcinoma and MiT family translocation renal cell carcinomas have the same ICD-O code but are distinctly different histologies. Because they are different, they are on different lines in column 3. Mucinous tubular and spindle cell carcinoma **8480*** Papillary renal cell carcinoma (PRCC) **8260** Renal medullary carcinoma **8510*** *Note:* This is a new term (previously called renal spindle cell carcinoma).

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Kidney – 2018 Solid Tumor Rules

2. **Do not** code the histology when:
   A. The following **modifiers** are used as a descriptor:
      - Architecture
      - Differentiation
        Note: Only **code differentiation** when there is a **specific code** for the NOS with differentiation in **Table 1** in the Equivalent Terms and Definitions, **ICD-O** and all **updates.**
      - Features (of)/with features of
        Note: Only **code features** when there is a **specific code** for the NOS with features in **Table 1** in the Equivalent Terms and Definitions, **ICD-O** and all **updates.**
      - Foci; focus, focal
      - Major/majority of
        Note: Major describes the greater amount of tumor.
      - Pattern(s)
      - Predominantly
        Note: Predominantly describes the greater amount of tumor.

   B. The following **ambiguous terminology** is used as a modifier:
      - Apparently
      - Appears
      - Comparable with
      - Compatible with
      - Consistent with
      - Favor(s)
      - Malignant appearing
      - Most likely
      - Presumed
      - Probable
      - Suspect(ed)
      - Suspicious (for)
      - Typical (of)

   Note 1: See SEER Program Manual and COC Manual. **Ambiguous** terminology is used to **determine reportability.**

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Staging Kidney Cancers

Collapsed Table | Full Table

Histology	Behavior	AJCC ID	Description
8000, 8010, 8140	3	60	Kidney
8255, 8260	3	60	Kidney
8310-8312, 8316-8319, 8323	3	60	Kidney
8480, 8510	3	60	Kidney
8000, 8010, 8140	2	XX	Other Kidney
8255, 8260	2	XX	Other Kidney
8310-8312, 8316-8319, 8323	2	XX	Other Kidney
8480, 8510	2	XX	Other Kidney
8001-8005, 8011-8131, 8141-8254	*<Any value>*	XX	Other Kidney
8256-8257, 8261-8300	*<Any value>*	XX	Other Kidney
8313-8315, 8320-8322, 8324-8474	*<Any value>*	XX	Other Kidney
8481-8509, 8512-8700, 8720-8790, 9700-9701	*<Any value>*	XX	Other Kidney

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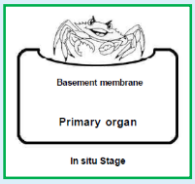
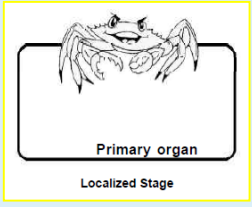
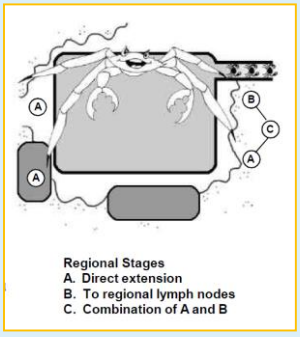
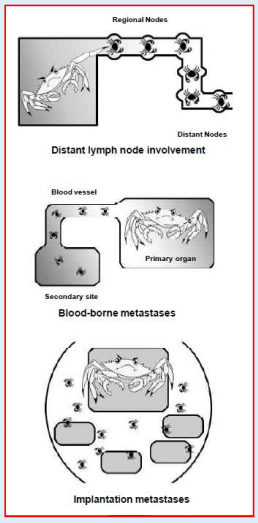
2018 SEER Summary Stage



Purpose of Staging
Biochemical Tumor Markers
Molecular Tumor Markers
Genetic Mutations/Variations
Risk Stratification







Source: SEER Summary Staging Manual 2018

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SS2018 - Kidney

KIDNEY (RENAL PARENCHYMA)

8000-8700, 8720-8790, 9700-9701

C649
C649 Kidney, NOS (Renal parenchyma)

Note 1: The following sources were used in the development of this chapter

- SEER Extent of Disease 1988: Codes and Coding Instructions (3rd Edition, 1
(https://seer.cancer.gov/archive/manuals/EOD10Dig.3rd.pdf)
- SEER Summary Staging Manual-2000: Codes and Coding Instructions
(https://seer.cancer.gov/tools/ssm/)
- Collaborative Stage Data Collection System, version 02.05:
https://cancerstaging.org/cstage/Pages/default.aspx
- Chapter 60 *Kidney*, in the AJCC Cancer Staging Manual, Eighth Edition (201
published by Springer International Publishing. Used with permission of the
College of Surgeons, Chicago, Illinois.

Note 2: See the following chapters for the listed histologies

- 8710-8714, 8800-8934, 8940-9137, 9141-9582: *Soft Tissue*
- 8935-8936: *GIST*
- 9140: *Kaposi Sarcoma*

SUMMARY STAGE

0 In situ: noninvasive, intraepithelial

1 Localized only (localized, NOS)

- Confined (limited) to the kidney, NOS
- Invasion of renal capsule
- Invasive cancer confined to kidney cortex and/or medulla
- Pelvicalyceal system
- Renal pelvis or calyces involved
- Separate focus of tumor in renal pelvis/calyx

2 Regional by direct extension only

- Adrenal gland (ipsilateral) (contiguous metastasis)
- Ascending colon from right kidney
- Beyond Gerota's fascia, NOS
- Blood vessel(s) (major)
  - Extrarenal portion of renal vein or segmental (muscle containing branc
  - Hilar blood vessel
  - Inferior vena cava
  - Perirenal vein/fat
  - Renal artery
  - Renal vein, NOS/sinus fat
  - Tumor thrombus in a renal vein, NOS
- Descending colon from left kidney
- Diaphragm
- Duodenum from right kidney
- Perinephric tissue
- Peritoneum
- Psoas muscle
- Quadratus lumborum muscle
- Retroperitoneal soft tissue
- Tail of pancreas
- Ureter (ipsilateral), including implant(s)

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SS2018 - Kidney

3 Regional lymph node(s) involved only

- Aortic, NOS
  - Lateral (lumbar)
  - Para-aortic
  - Periaortic
  - Preaortic
  - Retroaortic
- Caval, NOS
  - Interaortocaval
  - Paracaval
  - Pericaval
  - Precaval
  - Retrocaval
- Renal hilar
- Retroperitoneal, NOS
- Regional lymph node(s), NOS
  - Lymph node(s), NOS

7 Distant site(s)/lymph node(s) involved

- Distant site(s) (including further contiguous extension)
  - Adrenal gland
    - Contralateral
    - Ipsilateral, noncontiguous
  - Aorta
  - Contralateral kidney
  - Contralateral ureter
  - Liver
  - Ribs
  - Spleen
  - Stomach
- Distant lymph node(s), NOS
- Distant metastasis, NOS
  - Carcinomatosis
  - Distant metastasis WITH or WITHOUT distant lymph node(s)

9 Unknown if extension or metastasis

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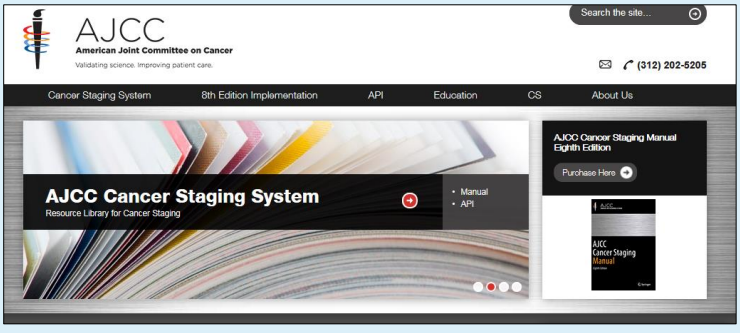
AJCC TNM -- Helpful Information

https://cancerstaging.org



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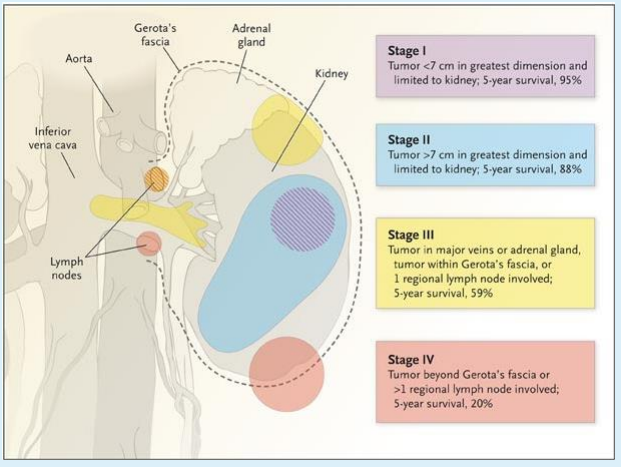
AJCC TNM Staging - Kidney



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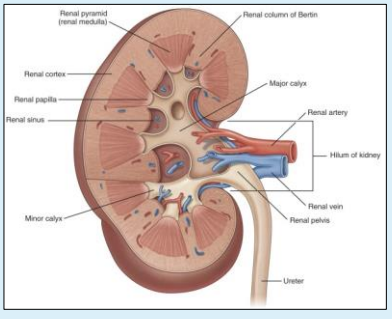
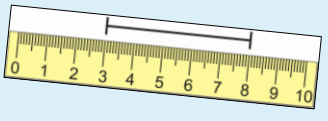
http://www.aboutcancer.com/renal_cell_stage_survival_nejm.j

Primary Tumor – T Category





T	Primary Tumor
TX	Primary tumor cannot be assessed
T0	No evidence of primary tumor
T1	Tumor ≤7 cm in greatest dimension, limited to the kidney
T1a	Tumor ≤4 cm in greatest dimension, limited to the kidney
T1b	Tumor >4 cm but ≤7 cm in greatest dimension, limited to the kidney
T2	Tumor >7 cm in greatest dimension, limited to the kidney
T2a	Tumor >7 cm but ≤10 cm in greatest dimension, limited to the kidney
T2b	Tumor >10 cm, limited to the kidney
T3	Tumor extends into major veins or perinephric tissues, but not into the ipsilateral adrenal gland and not beyond Gerota's fascia
T3a	Tumor extends into the renal vein or its segmental branches, or invades the pelvicalyceal system, or invades perirenal and/or renal sinus fat but not beyond Gerota's fascia
T3b	Tumor extends into the vena cava below the diaphragm
T3c	Tumor extends into the vena cava above the diaphragm or invades the wall of the vena cava
T4	Tumor invades beyond Gerota's fascia (including contiguous extension into the ipsilateral adrenal gland)

http://www.aboutcancer.com/kidneywalsh0509.jpg

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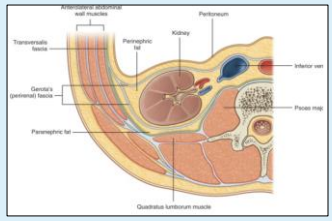
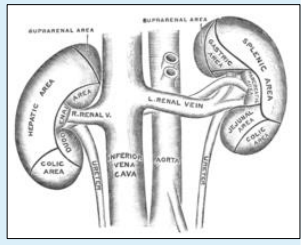
Primary Tumor – T Category

T	Primary Tumor
TX	Primary tumor cannot be assessed
T0	No evidence of primary tumor
T1	Tumor ≤7 cm in greatest dimension, limited to the kidney
T1a	Tumor ≤4 cm in greatest dimension, limited to the kidney
T1b	Tumor >4 cm but ≤7 cm in greatest dimension, limited to the kidney
T2	Tumor >7 cm in greatest dimension, limited to the kidney
T2a	Tumor >7 cm but ≤10 cm in greatest dimension, limited to the kidney
T2b	Tumor >10 cm, limited to the kidney
T3	Tumor extends into major veins or perinephric tissues, but not into the ipsilateral adrenal gland and not beyond Gerota's fascia
T3a	Tumor extends into the renal vein or its segmental branches, or invades the pelvicalyceal system, or invades perirenal and/or renal sinus fat but not beyond Gerota's fascia
T3b	Tumor extends into the vena cava below the diaphragm
T3c	Tumor extends into the vena cava above the diaphragm or invades the wall of the vena cava
T4	Tumor invades beyond Gerota's fascia (including contiguous extension into the ipsilateral adrenal gland)





http://www.aboutcancer.com/kidney_anatomy.htm

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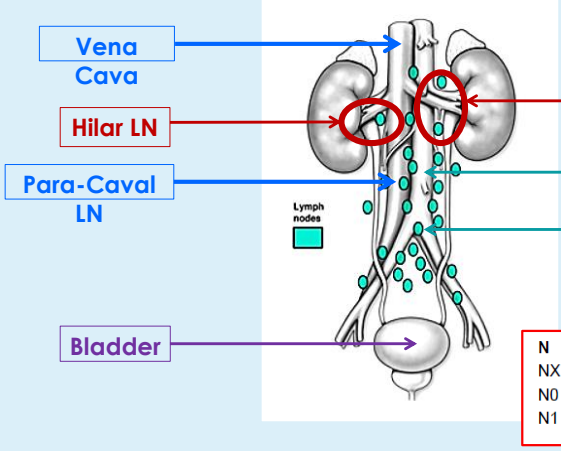
Regional Lymph Nodes – N Category



N	Regional Lymph Nodes
NX	Regional lymph nodes cannot be assessed
N0	No regional lymph node metastasis
N1	Metastasis in regional lymph node(s)

Source: http://www.laparoboticsurgery.com

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AJCC Stage/Prognostic Group

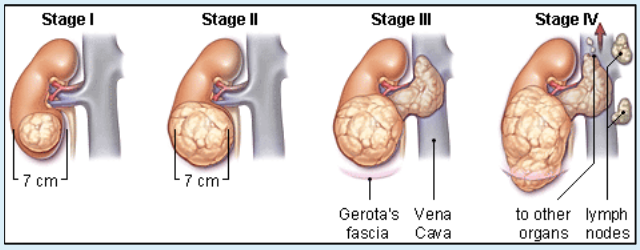

Table 2. AJCC Prognostic Groups

	T	N	M
Stage I	T1	N0	M0
Stage II	T2	N0	M0
Stage III	T1-T2	N1	M0
	T3	N0-N1	M0
Stage IV	T4	Any N	M0
	Any T	Any N	M1

Regional Lymph Nodes (N)
NX Regional lymph nodes cannot be assessed
N0 No regional lymph node metastasis
N1 Metastasis in regional lymph node(s)

Distant Metastasis (M)
M0 No distant metastasis
M1 Distant metastasis

http://www.aboutcancer.com/kidney_anatomy.htm

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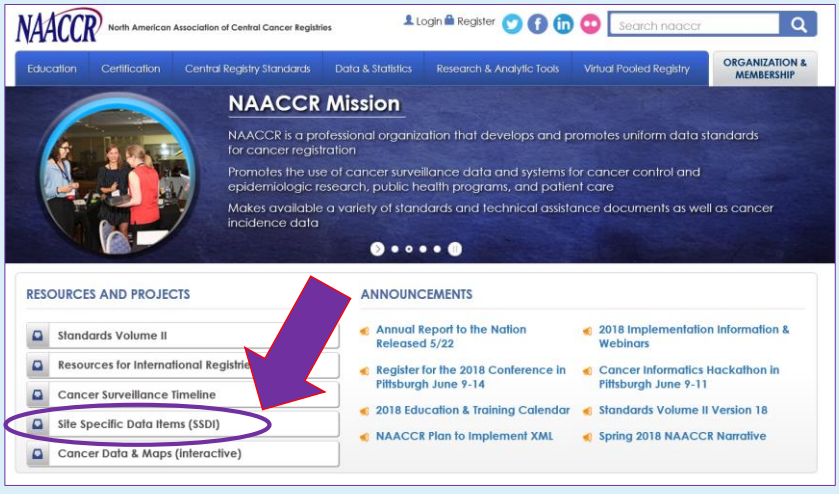
Introduction to SSDI Manual



https://apps.naaccr.org/ssdi/list/

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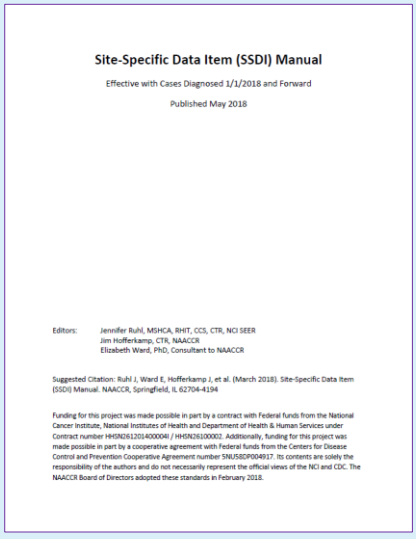
Introduction to SSDI Manual



Site-Specific Data Item (SSDI) Manual

Effective with Cases Diagnosed 1/1/2018 and Forward

Published May 2018

Editors: Jennifer Ruhl, MSHCA, RHIT, CCS, CTR, NCI SEER
Jim Hofferkamp, CTR, NAACCR
Elizabeth Ward, PhD, Consultant to NAACCR

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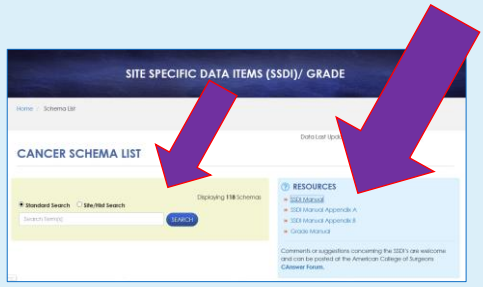

https://apps.naaccr.org/ssdi/list/

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Types of Site Specific Data Items

- Prognostic Factors "Required for Stage Grouping" (All Cases)
  - Not ALL SSDIs Labeled "Required for Stage Grouping" are actually required for staging.
  - Some "Required for Stage Grouping" Items have "Prognostic Significant" and are Required.
- Additional Factors Recommended for Clinical Care (CoC/NCDB and SEER)
- Emerging Factors for Clinical Care (Web Only – Not Required)
- May Include Molecular or Protein Biomarkers, Genetic Markers, Lab Test Value, Interpretation of Lab Value, Clinical Factors such as Size of Lymph Node, Alternate Staging such as FIGO, Measured Depth of Invasion (Breslow Depth), Site Specific Grade Detail (Gleason), Cytogenetics, Immunochemistry, Surgical Margin Details, MSI or Microsatellite Instability and More
- You may not see the SSDIs that clinicians reference and think are important today…the reason is that it takes time for cancer registry standards to catch up with present day technology and testing – particularly for genetic factors.
- Your Cancer Program can define any additional SSDIs you would like to capture for your physicians – genetic markers for lung for example - approve these through your Cancer Committee and carefully define user-defined instructions and codes

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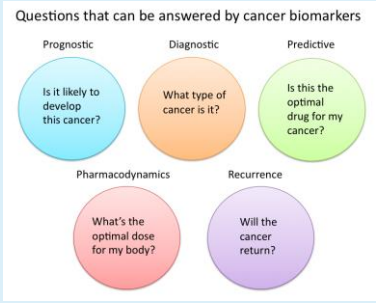
Types of Site Specific Data Items

- Molecular Genetics still minimally addressed in 2018 SSDIs
- 2018 SSDIs support TNM data - not biomarkers/molecular markers or genetics
- Most evaluate genetic mutations and/or protein surface markers
- Some have targeted therapy(s) associated with mutation

- Chromosomal Abnormality(s) – Mutation
- Biochemical Abnormality
- Genetic/DNA Mutation

- Prognostic
- Diagnostic
- Predictive
- Tumor Burden
- Pharmacodynamics
- Recurrence Monitoring



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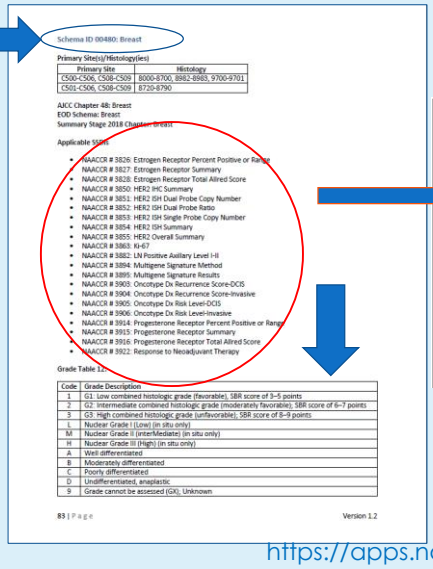
Schema ID Drives the SSDI Tables



Schema ID 00480: Breast

Primary Site(s)/Histology(ies)

Primary Site	Histology
C500-C506, C508-C509	8000-8700, 8982-8983, 9700-9701
C501-C506, C508-C509	8720-8790

AJCC Chapter 48: Breast
EOD Schema: Breast
Summary Stage 2018 Chapter: Breast

Applicable SSDIs

- NAACCR # 3826: Estrogen Receptor Percent Positive or Range
- NAACCR # 3827: Estrogen Receptor Summary
- NAACCR # 3828: Estrogen Receptor Total Allred Score
- NAACCR # 3850: HER2 IHC Summary
- NAACCR # 3851: HER2 ISH Dual Probe Copy Number
- NAACCR # 3852: HER2 ISH Dual Probe Ratio
- NAACCR # 3853: HER2 ISH Single Probe Copy Number
- NAACCR # 3854: HER2 ISH Summary
- NAACCR # 3855: HER2 Overall Summary
- NAACCR # 3863: KI-67
- NAACCR # 3882: LN Positive Axillary Level I-II
- NAACCR # 3894: Multigene Signature Method
- NAACCR # 3895: Multigene Signature Results
- NAACCR # 3903: Oncotype Dx Recurrence Score-DCIS
- NAACCR # 3904: Oncotype Dx Recurrence Score-Invasive
- NAACCR # 3905: Oncotype Dx Risk Level-DCIS
- NAACCR # 3906: Oncotype Dx Risk Level-Invasive
- NAACCR # 3914: Progesterone Receptor Percent Positive or Range
- NAACCR # 3915: Progesterone Receptor Summary
- NAACCR # 3916: Progesterone Receptor Total Allred Score
- NAACCR # 3922: Response to Neoadjuvant Therapy

Grade Table 12

Code	Grade Description
1	G1: Low combined histologic grade (favorable), SBR score of 3–5 points
2	G2: Intermediate combined histologic grade (moderately favorable), SBR score of 6–7 points
3	G3: High combined histologic grade (unfavorable), SBR score of 8–9 points
L	Nuclear Grade I (Low) (in situ only)
M	Nuclear Grade II (InterMediate) (in situ only)
H	Nuclear Grade III (High) (in situ only)
A	Well differentiated
B	Moderately differentiated
C	Poorly differentiated
D	Undifferentiated, anaplastic
9	Grade cannot be assessed (GX), Unknown

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Schema ID#/Description	AJCC #/Chapter	SSDI #/Description
00480: Breast	48:BREAST	3826: Estrogen Receptor Percent Positive or Range 3827: Estrogen Receptor Summary 3828: Estrogen Receptor Total Allred Score 3914: Progesterone Receptor Percent Positive or Range 3915: Progesterone Receptor Summary 3916: Progesterone Total Allred Score 3850: HER2 IHC Summary 3851: HER2 ISH Dual Probe Copy Number 3852: HER2 ISH Dual Probe Ratio 3853: HER2 ISH Single Probe Copy Number 3854: HER2 ISH Summary 3855: HER2 Overall Summary 3894: Multigene Signature Method 3895: Multigene Signature Results 3903: Oncotype Dx Recurrence Score-DCIS 3904: Oncotype Dx Recurrence Score-Invasive 3905: Oncotype Dx Risk Level-DCIS 3906: Oncotype Dx Risk Level-Invasive 3863: KI-67 3882: LN Positive Axillary Level I-II 3922: Response to Neoadjuvant Therapy

https://apps.naaccr.org/ssdi/list/

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Site-Specific Data Items - Kidney

- **Required by FCDS – NONE**
- AJCC/CoC Registry Data Collection Variable
  - ✓Invasion Beyond Capsule
  - ✓Ipsilateral Adrenal Gland Involvement
  - ✓Major Vein Involvement
  - ✓Sarcomatoid Features

Code	Description
000	Sarcomatoid features not present/not identified
001-100	Sarcomatoid features 1-100%
R01	Sarcomatoid features stated as less than 10%
R02	Sarcomatoid features stated as range 10%-30% present
R03	Sarcomatoid features stated as a range 31% to 50% present
R04	Sarcomatoid features stated as a range 51% to 80% present
R05	Sarcomatoid features stated as greater than 80%
XX6	Sarcomatoid features present, percentage unknown
XX7	Not applicable: Not a renal cell carcinoma morphology
XX8	Not applicable: Information not collected for this case (If this information is required by your standard setter, use of code XX8 may result in an edit error.)
XX9	Not documented in medical record Sarcomatoid features not assessed or unknown if assessed No surgical resection of primary site is performed

AJCC Cancer Staging Manual, 8th ed, SSDI Manual, NCCN Guidelines – Kidney, 2019

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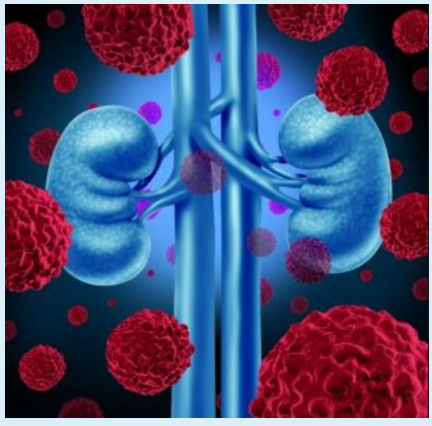
Treatment Options - Kidney



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Active Surveillance

- Active surveillance is an option for the initial management of patients with clinical stage T1 renal lesions, for example:
  - Patients with small renal masses <2 cm given the high rates of benign tumors and low metastatic potential of these masses.
  - Patients with clinical stage T1 masses and significant competing risks of death or morbidity from intervention.
  - Active surveillance entails serial abdominal imaging with timely intervention should the mass demonstrate growth (eg, tumor size, growth rate, infiltrative pattern) indicative of increasing metastatic potential.
  - Active surveillance should include periodic metastatic survey including blood work and chest imaging, particularly if the mass demonstrates growth.

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Thermal Ablation

- Thermal ablation (eg, cryosurgery, radiofrequency ablation) is an option for the management of patients with clinical stage T1 renal lesions.
  - Thermal ablation is an option for masses <3cm, but may also be an option for larger masses in select patients. Ablation in masses >3cm is associated with higher rates of local recurrence/persistence and complications.
  - Biopsy of small lesions confirms a diagnosis of malignancy for surveillance, cryosurgery, and radiofrequency ablation strategies.
  - Ablative techniques are associated with a higher local recurrence rate than conventional surgery and may require multiple treatments to achieve the same local oncologic outcomes.[a,b]

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Ablation or Embolization

- "Ablation" is destruction of tumor by vaporization, chipping away (like chipping ice) or various other erosive processes. Ablation may be used when tumor(s) are small (<3cm), peripheral lesions, inferior pole or posterior location. Large (>5cm) or centrally located tumors or tumors in anterior location are generally not suitable for ablation as primary tx.
- Thermal (heat) ablation used to be called "hyper-thermia"
- **Tumor Ablation is coded as Surgery – ablation directly destroys the tumor**
- Types of Ablation Include:
  - Cryo-Ablation – Uses Cold
  - Laser-Ablation – Uses Light
  - Microwave-Ablation – Uses Heat
  - RFA – Radiofrequency-Ablation – Uses Heat – electro-cautery
  - PDT – photodynamic therapy is a type of laser ablation
  - High-Intensity Ultrasound – Uses Sound Waves to create heat

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Ablation or Embolization

- "Embolization" is a procedure performed to create an embolus, a blocked or hardened blood vessel, to shut down blood flow and blood supply to the primary tumor/metastasis. This method of treatment indirectly kills tumor by cutting off the blood supply to tumor.
- Embolization can also include injection of a chemical like alcohol or a chemotherapy agent that acts to sclerose or harden key blood vessel(s) OR the approach may even be designed to trap chemo behind the embolus using 2 approaches; or performed by injecting a foreign material or substance like coils or radioactive beads to block the artery and prevent any blood flow to the tumor. The chemotherapy agent(s) or radioactive beads directly treat the tumor but not the embolization…the embolization is still only indirectly killing tumor cells.
- **Treatment Code Will Depend on Type of Embolization -** Code the type of treatment.
- Types of Embolization Include:
  - Chemo-Embolization – Uses Chemotherapy Agent(s) - TACE
  - Alcohol-Embolization – Uses Alcohol
  - Radioactive Beads/Spheres – Combines Radioisotopes / Mechanical Block
  - Artificial Embolus – plastic or metal coils, foam, other plugs to Block

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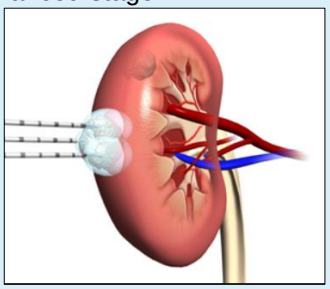
Resection

- Energy Ablation (heat or cold) of Primary Tumor
- Partial Nephrectomy – Stage I-III tumors (unilateral)
- Radical Nephrectomy – usually robotic – may be laparoscopic
- Regional Node Dissection is Optional BUT is Recommended for Patients with Adenopathy on Imaging or Visible at Surgery
- Cytoreductive Nephrectomy – advanced stage
- Kidney Transplant



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Targeted Therapies

- Sorafenib (Nexavar) – blocks angiogenesis and growth stimulating proteins – tyrosine kinase inhibitor (TKI)
- Sunitinib (Sutent) – tyrosine kinase inhibitor (TKI) blocks blood vessel growth
- Temsirolimus (Torisel) – blocks *m*TOR protein (*m*TOR Inhibitor)
- Everolimus (Afinitor) – blocks *m*TOR Protein (*m*TOR Inhibitor)
- Bevacizumab (Avastin) – angiogenesis inhibitor – blocks growth of new blood vessels – usually used with alfa interferon
- Pazopanib (Votrient) – TKI Inhibitor
- Axitinib (Inlyta) – TKI Inhibitor
- Cabozantinib (Cabometyx) – TKI-Inhibitor
- Lenvatinib (Lenvima) – TKI-Inhibitor

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Immunotherapy

- Cytokines – man-made versions of activation proteins used to activate the immune system – interleukin-2 and interferon-alpha
- Interleukin-2 (IL-2) – used to be first line therapy before targeted drugs came onto the scene. Only a small percentage of patients respond to IL-2. However, for those who do respond they have long-lasting response
- Interferon-alfa – Usually used with a targeted drug often Avastin
- Immune CheckPoint Inhibitors like Nivolumab (Opdivo) which targets PD-1. When PD-1 is blocked there is a boost in the body's own immune system to respond against cancer cells
- CTLA-4 Inhibitors like Ipilimumab (Yervoy) which blocks a different checkpoint protein called CTLA-4.

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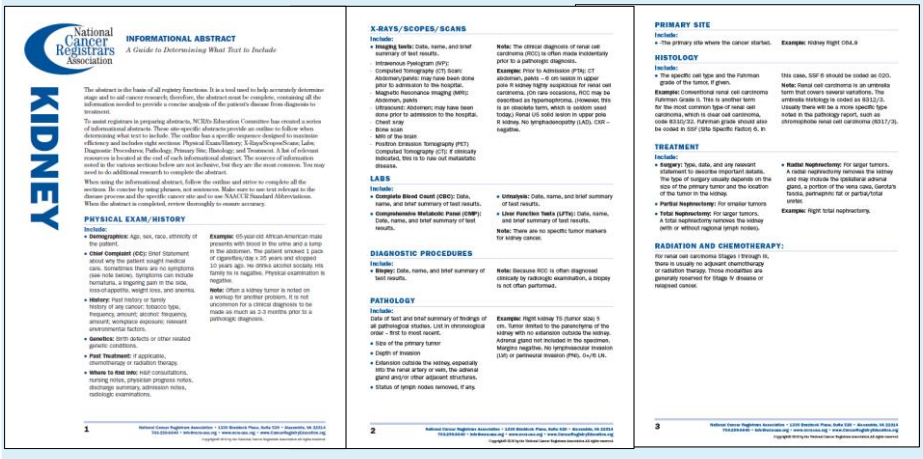
Text Documentation - Kidney



National Cancer Registrars Association

INFORMATIONAL ABSTRACT

A Guide to Determining What Text to Include

KIDNEY

The abstract is the basis of all registry functions. It is a tool used to help accurately determine stage and to aid cancer research; therefore, the abstract must be complete, containing all the information needed to provide a concise analysis of the patient's disease from diagnosis to treatment.

To assist registrars in preparing abstracts, NCRA's Education Committee has created a series of informational abstracts. These site-specific abstracts provide an outline to follow when determining what text to include. The outline has a specific sequence designed to maximize efficiency and includes eight sections: Physical Exam/History; X-Rays/Scopes/Scans; Labs; Diagnostic Procedures; Pathology; Primary Site; Histology; and Treatment. A list of relevant resources is located at the end of each informational abstract. The sources of information noted in the various sections below are not inclusive, but they are the most common. You may need to do additional research to complete the abstract.

When using the informational abstract, follow the outline and strive to complete all the sections. Be concise by using phrases, not sentences. Make sure to use text relevant to the disease process and the specific cancer site and to use NAACCR Standard Abbreviations. When the abstract is completed, review thoroughly to ensure accuracy.

PHYSICAL EXAM/HISTORY

Include:

- **Demographics:** Age, sex, race, ethnicity of the patient.
- **Chief Complaint (CC):** Brief statement about why the patient sought medical care. Sometimes there are no symptoms (see note below). Symptoms can include hematuria, a lingering pain in the side, loss of appetite, weight loss, and anemia.
- **History:** Past history or family history of any cancer; tobacco type, frequency, amount; alcohol: frequency, amount; workplace exposure; relevant environmental factors.
- **Genetics:** Birth defects or other related genetic conditions.
- **Past Treatment:** If applicable, chemotherapy or radiation therapy.
- **Where to find info:** H&P, consultations, nursing notes, physician progress notes, discharge summary, admission notes, radiologic examinations.

Example: 65-year-old African-American male presents with blood in the urine and a lump in the abdomen. The patient smoked 1 pack of cigarettes/day x 35 years and stopped 10 years ago. He drinks alcohol socially. His family Hx is negative. Physical examination is negative.

Note: Often a kidney tumor is noted on a workup for another problem. It is not uncommon for a clinical diagnosis to be made as much as 2-3 months prior to a pathologic diagnosis.

1

X-RAYS/SCOPES/SCANS

Include:

- **Imaging tests:** Date, name, and brief summary of test results.
  - Intravenous Pyelogram (IVP)
  - Computed Tomography (CT) Scan: Abdomen/pelvis: may have been done prior to admission to the hospital.
  - Magnetic Resonance Imaging (MRI): Abdomen, pelvis
  - Ultrasound: Abdomen; may have been done prior to admission to the hospital.
  - Chest: xray
  - Bone scan
  - MRI of the brain
  - Positron Emission Tomography (PET)
  - Computed Tomography (CT): If clinically indicated, this is to rule out metastatic disease.

Note: The clinical diagnosis of renal cell carcinoma (RCC) is often made incidentally prior to a pathologic diagnosis.

Example: Prior to Admission (PTA): CT abdomen, pelvis – 6 cm lesion in upper pole R kidney highly suspicious for renal cell carcinoma. (On rare occasions, RCC may be described as hypernephroma. However, this is an obsolete term, which is seldom used today.) Renal US solid lesion in upper pole R kidney. No lymphadenopathy (LAD). CXR – negative.

LABS

Include:

- **Complete Blood Count (CBC):** Date, name, and brief summary of test results.
- **Comprehensive Metabolic Panel (CMP):** Date, name, and brief summary of test results.
- **Urinalysis:** Date, name, and brief summary of test results.
- **Liver Function Tests (LFTs):** Date, name, and brief summary of test results.

Note: There are no specific tumor markers for kidney cancer.

DIAGNOSTIC PROCEDURES

Include:

- **Biopsy:** Date, name, and brief summary of test results.

Note: Because RCC is often diagnosed clinically by radiologic examination, a biopsy is not often performed.

PATHOLOGY

Include:

Date of test and brief summary of findings of all pathological studies. List in chronological order – first to most recent.

- Site of the primary tumor
- Depth of invasion
- Extension outside the kidney, especially into the renal artery or vein, the adrenal gland and/or other adjacent structures.
- Status of lymph nodes removed, if any.

Example: Right kidney T6 (tumor size) 5 cm. Tumor limited to the parenchyma of the kidney with no extension outside the kidney. Adrenal gland not included in the specimen. Margins negative. No lymphovascular invasion (LVI) or perirenal invasion (PNI). 0+/0 LN.

2

PRIMARY SITE

Include:

- The primary site where the cancer started.

Example: Kidney Right C64.9

HISTOLOGY

Include:

- The specific cell type and the Fuhrman grade of the tumor, if given.

Example: Conventional renal cell carcinoma Fuhrman Grade II. This is another term for the most common type of renal cell carcinoma, which is clear cell carcinoma, code 8310/33. Fuhrman grade should also be coded in SSF (Site Specific Factor) 6, in this case, SSF 6 should be coded as 020.

Note: Renal cell carcinoma is an umbrella term that covers several variations. The umbrella histology is coded as 8312/3. Usually there will be a more specific type noted in the pathology report, such as chromophobe renal cell carcinoma (8317/3).

TREATMENT

Include:

- **Surgery:** Type, date, and any relevant statement to describe important details. The type of surgery usually depends on the size of the primary tumor and the location of the tumor in the kidney.
- **Partial Nephrectomy:** For smaller tumors
- **Total Nephrectomy:** For larger tumors. A total nephrectomy removes the kidney (with or without regional lymph nodes).
- **Radial Nephrectomy:** For larger tumors. A radial nephrectomy removes the kidney and may include the ipsilateral adrenal gland, a portion of the vena cava, Gerota's fascia, perinephric fat or partial/total ureter.

Example: Right total nephrectomy.

RADIATION AND CHEMOTHERAPY:

For renal cell carcinoma Stages I through III, there is usually no adjuvant chemotherapy or radiation therapy. Those modalities are generally reserved for Stage IV disease or relapsed cancer.

3

Source: NCRA Informational Abstracts – Improving Text

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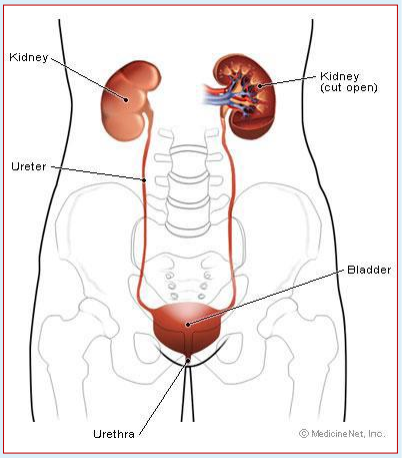
Neoplasms of the Urothelium

Includes:

- ✓ C65.9 - Renal Pelvis *
- ✓ C66.9 – Ureter *
- ✓ C67.0-C67.9 - Bladder
- ✓ C68.0-C68.9 - Urinary Other

* Has Laterality (right & left)



Source: http://www.medicinenet.com

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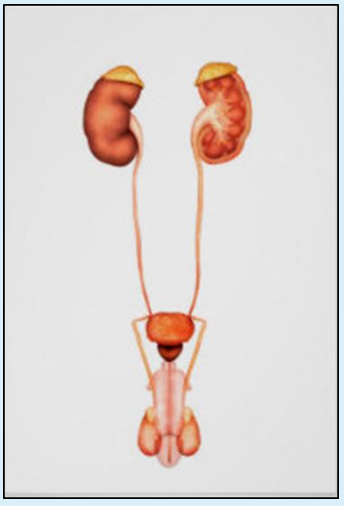
Urothelium - 4 Sites as 1 "Organ"



Urothelium is the layer of transitional epithelium that lines the wall of the renal pelvis, ureters, the bladder, and parts of the urethra.

The urothelial lining may be exposed to urinary carcinogens derived from tobacco smoke, dietary, occupational or environmental chemicals while the lining is performing its usual function to collect, store, and transport urine

Carcinogenic urine can sit in the bladder or collecting ducts for long periods of time – constantly exposing the urothelial lining to carcinogens.

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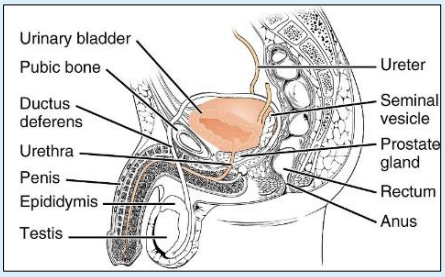
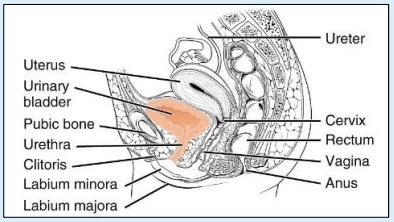
Male and Female Anatomy

In US, 90% of bladder tumors are urothelial carcinoma, less than 5% are pure squamous cell carcinoma or pure adenocarcinoma.





Source: http://Wikipedia/images

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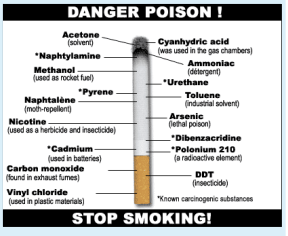
Risk Factors/Screening

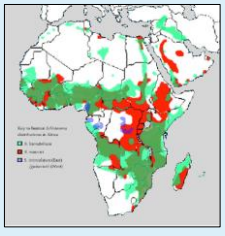
Risk Factors

- Cigarette Smoking
- Chemical Exposures:
  - Aromatic Amines
  - dyes, solvents, paints, rubber, benzene, etc.
- Arsenic
- Exhaust Fumes
- Dietary Supplements
- Cyclophosphamide
- Chronic Inflammation
- Schistosoma - blood fluke worm



Screening

- None
- Blood in Urine
- Incidental Finding
  - Ultrasound
  - Cystoscopy



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Field Effect Theory

The field effect theory suggests that the urothelium has undergone a widespread change, perhaps in response to a carcinogen, making it more sensitive to malignant transformations.

As a result, multiple tumors arise more easily.

Recent scientific evidence supported by molecular analysis of microsatellite alterations and X-chromosome inactivation status in cells examining coexisting tumors leads to the development of multiple, genetically unrelated tumors further supporting the field effect theory.

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Implantation Theory

Implantation theory suggests that the multiple tumors are of monoclonal origin, arising from a single malignant transformed cell which proliferates and spreads throughout the urothelium either by intraluminal spread with secondary implantation at different sites within the urinary tract or by intraepithelial migration.

The implantation theory suggests that tumor cells in one location lose their attachments and float in the urine until they attach (implant) on another site.

Urothelial tumors may spread in a head-to-toe direction, for example from the renal pelvis to the ureter(s) to the bladder.

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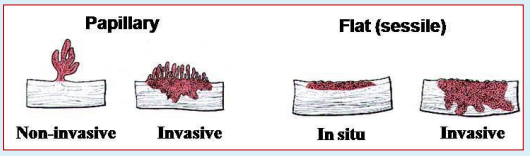
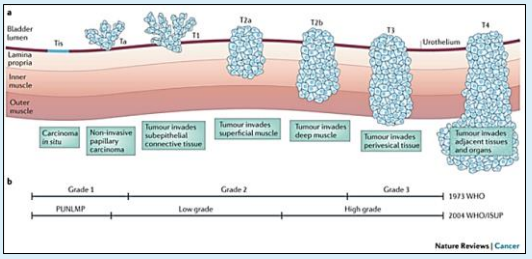
Urothelial Tumor Characteristics





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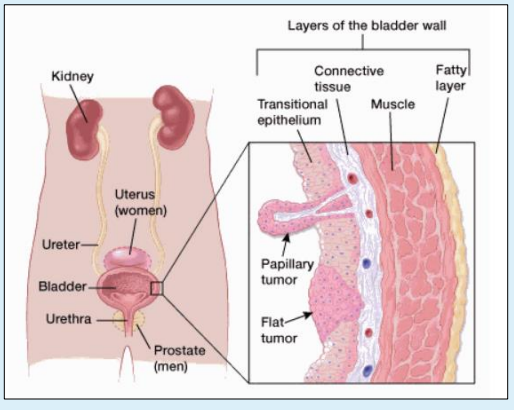
Source: 2007 MPH Rules Rules - Table 1 – Urothelial Tumors and www.nature.com/nrc/journal/v15/n1

Anatomy of Wall of Urothelium



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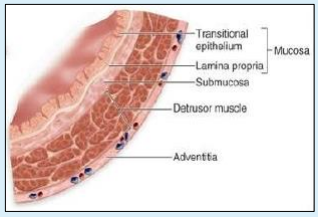
Sources: http://www.cancer.org and

Layers of Wall Lining the Urothelium

- Mucosa
  - Urothelium
  - Epithelium
  - Mucosal Surface
  - Transitional Mucosa
  - Tunica Mucosa
  - Vesicae Urinariae
- Submucosa
  - Lamina Propria
  - Muscularis Mucosa
  - Subepithelial Tissue
  - Suburothelial Connective Tissue
  - Stroma
- Muscle / Muscularis
  - Muscularis Propria
  - Muscularis Externa
  - Smooth Muscle



Source: https://anatomyeshs/ch17

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Diagnostic Workup

- Lab Tests – urinalysis
- Urine Cytology – bladder washings
- Urine Culture – to rule out infection caused symptoms
- Urine Tumor Marker Tests
  - NMP22 (BladderChek)
  - BTA (BTA stat)
  - Immuocyt
  - UroVysion
- Cystoscopy (including Fluorescence or Blue Light Cystoscopy)
- TURBT/Biopsy to confirm cancer location and whether or not the tumor has invaded the muscle layer of the bladder wall
- TURBT/Biopsy Results Drive the Rest of the Workup
- Explore Treatment Options Based on Biopsy Results
- Follow-Up is Very Important

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Bladder Histology

ALL ARE CODED to Urothelial Carcinoma 8120

- Clear cell (glycogen-rich) urothelial carcinoma
- Infiltrating urothelial carcinoma
- Infiltrating urothelial carcinoma with divergent differentiation
- Infiltrating urothelial carcinoma with endodermal sinus lines
- Infiltrating urothelial carcinoma with glandular differentiation
- Infiltrating urothelial carcinoma with squamous differentiation
- Infiltrating urothelial carcinoma with trophoblastic differentiation
- Lipid-rich urothelial carcinoma
- Microcystic urothelial carcinoma
- Nested urothelial carcinoma
- Plasmacytoid urothelial carcinoma
- Urothelial carcinoma in situ

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2018 New Histology - Urothelial

Status	Histology Value	Behavior	Preferred Term	label	Reportable
New term	8010	3	FALSE	Urachal carcinoma (C65.9, C66.9, C67._, C68._)	Y
New term	8120	3	FALSE	Lipid-rich urothelial carcinoma (C65.9, C66.9, C67._, C68._)	Y
New term	8120	3	FALSE	Microcystic urothelial carcinoma (C65.9, C66.9, C67._, C68._)	Y
New term	8120	3	FALSE	Nested urothelial carcinoma (C65.9, C66.9, C67._, C68._)	Y
New term	8120	3	FALSE	Urothelial carcinoma with divergent differentiation (C65.9, C66.9, C67._, C68._)	Y
New term	8120	3	FALSE	Urothelial carcinoma with squamous differentiation (C65.9, C66.9, C67._, C68._)	Y
New term	8120	3	FALSE	Urothelial carcinoma with trophoblastic differentiation (C65.9, C66.9, C67._, C68._)	Y
New term	8120	3	FALSE	Clear cell (glycogen-rich) urothelial carcinoma (C65.9, C66.9, C67._, C68._)	Y
New term	8144	3	FALSE	Enteric adenocarcinoma (C34. 0, C65.9, C66.9, C67._, C68._)	Y

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Source: 2018 Updates to ICD-O-3

2018 Site Specific Grade

There are RULES for using this Manual and Menus

- Your Software will direct you – but cannot think for you.
  - This is the GRADE of the PRIMARY TUMOR.
  - DO NOT ASSIGN Grade from a metastatic site – EVER.
  - Clinical Grade Must NEVER BE BLANK
  - Either Pathological **or** Post-Therapy Grade Must BE BLANK
  - Either Pathological **or** Post-Therapy Grade Must BE FILLED
  - There are NOTES that accompany every single Grade Table.
  - DO ASSIGN the highest grade identified from any type of biopsy (FNA, core, excisional, incisional) or resection (partial or complete) of the primary tumor assessed during the clinical time frame
  - If there is only one grade available and it cannot be determined if it is clinical, pathological, or after neo-adjuvant therapy, assign as a clinical grade and code unknown (9) for pathological grade, and blank for post-therapy grade.

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2018 Site Specific Grade

- **Clinical Grade** - the grade of a solid primary tumor before any treatment. Treatment may include surgical resection, systemic therapy, radiation therapy, or neoadjuvant therapy. NOTE: All surgical procedures are not treatment, e.g. TURB and endoscopic biopsies.
- **Pathological Grade** - the grade of a solid primary tumor that has been surgically resected and for which no neoadjuvant therapy was administered. If AJCC pathological staging is being assigned, the tumor must have met the surgical resection requirements in the AJCC manual. This may include the grade from the clinical workup, as all information from diagnosis (clinical staging) through the surgical resection is used for pathological staging.
- **Post-Therapy Grade** - the grade of a solid primary tumor that has been resected following neoadjuvant therapy. If AJCC post-therapy staging is being assigned, the tumor must have met the surgical resection requirements for yp in the AJCC manual. Neoadjuvant therapy must meet guidelines or standards, and not be that given for variable or unconventional reasons as noted in the AJCC manual.

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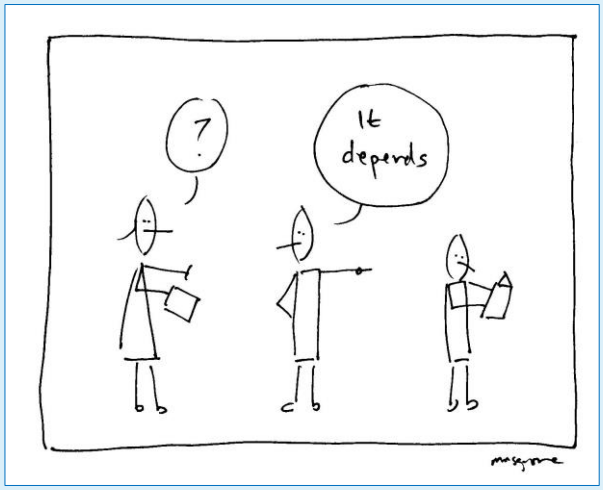
2018 Grade – Bladder



77

2018 Grade – Bladder

Grade 19

Grade ID 19-Clinical Grade Instructions			
Schema ID#	**Schema ID Name**	**AJCC ID**	**AJCC Chapter**
00610	Kidney Renal Pelvis	61.1	Renal Pelvis and Ureter: Urothelial Carcinomas
		61.2	Renal Pelvis and Ureter: Squamous Cell Carcinoma and Adenocarcinoma
00620	Bladder	62.1	Urinary Bladder: Urothelial Carcinomas
		62.2	Urinary Bladder: Squamous Cell Carcinoma and Adenocarcinoma
00631	Urethra	63.1	Urothelial Male Penile Urethra and Female Urethra
		63.2	Squamous Male Penile Urethra and Female Urethra
00633	Urethra-Prostatic	63.3	Prostatic Urethra: Urothelial Carcinomas
		63.4	Prostatic Urethra: Squamous Cell Carcinoma and Adenocarcinoma

Note 1: Clinical grade must not be blank.

Code	Grade Description
1	G1: Well differentiated
2	G2: Moderately differentiated
3	G3: Poorly differentiated
L	LG: Low-grade
H	HG: High-grade
9	Grade cannot be assessed (GX); Unknown

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Tumor Grade and Treatment

PRINCIPLES OF INTRAVESICAL TREATMENT

Indications: Based on probability of recurrence an gression to muscle-invasive disease, such as size, number, and grade.

Immediate Intravesical Chemotherapy
- Initiated within 24 hrs after resection
- Use after TUR lowers recurrence rate in Ta low-grade tumors
- Treatment should not be given if extensive TURBT or if suspected bladder perforation

Induction Intravesical Chemotherapy
- Initiated 3-4 wks after resection
- Maximum of 2 inductions without complete response
- Maintenance therapy is optional

Induction Intravesical Immunotherapy
- Initiated 3-4 wks after resection
- Withhold if traumatic catheterization, bacteriuria, persis symptoms
- Maximum of 2 inductions without complete response
- Some data suggest benefit of maintenance therapy
- Dose reduction is encouraged if there are substantial lo

APPROXIMATE PROBABILITY OF URRENCE AND PROGRE

Pathology	Approximate Probability of Recurrence in 5 years	Approximate Probability of Progression to Muscle Invasion
Ta, low grade	50%	Minimal
Ta, high grade	60%	Moderate
T1, low grade (rare)	50%	Moderate
T1, high grade	50%-70%	Moderate-High
Tis	50%-90%	High

Source: 2015 NCCN Guidelines - Bladder

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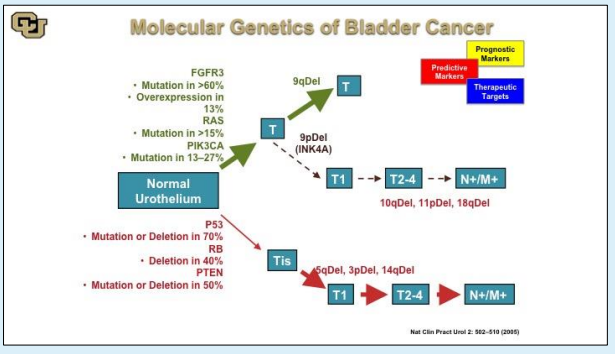
Genetics in Urothelial Cancers

- TP53
- GSTM1
- NAT2
- RB1
- FGFR3
- RAS
- Chromosome 9



https://grandroundsinurology.com/basic-science-foundations-of-bladder-cancer-diagnosis-and-treatment/

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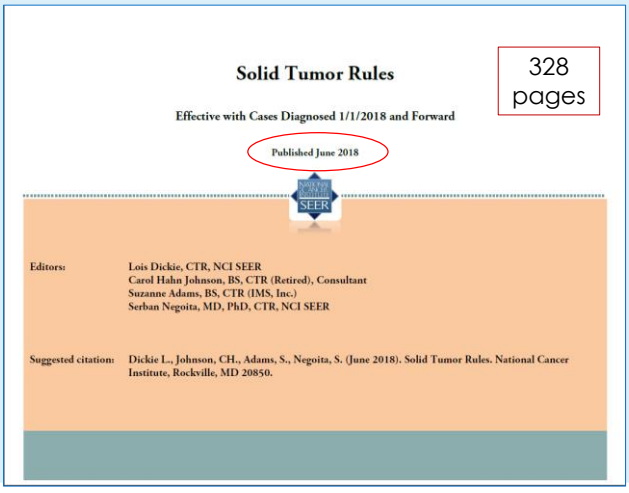
2018 Solid Tumor MP/H Rules

Published June 2018 – but still had MAJOR changes in October 2018 – be sure you have the correct set of rules



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General Instructions

- TEXT ONLY RULES INCLUDE:
  - General Instructions PLUS
  - 10 Sets of Solid Tumor MP/H Rules
  - Each Module includes Multiple Sections (Notes/Site/MP/Histology)
- Code subtypes/variants when definitively described (no modifiers)
- Do Not Use Ambiguous Terminology to Code Histology
- Ambiguous terminology is used to determine "case reportability"
- Ambiguous terminology is not to be used to determine histology
- Ambiguous terminology such as "with features of", etc. are no longer used to determine a subtype OR to determine which histology should be coded. See the following histology rules for instructions on coding multiple histologies.
- Use the Histology (H) Rules to determine when to use or not use any ambiguous terminology when an ambiguous term is used to describe a histologic type – sometimes you use the ambiguous term to code a subtype or variant or mixed histology -- and sometimes you do not.

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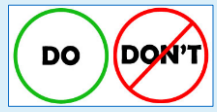
General Instructions

- Introduction
- Changes from 2007 MPH Rules
- Definitions
- Equivalent or Equal Terms
- Terms that are NOT Equivalent or Equal
- Table and Instructions for Coding Primary Site
- Table: Specific Histologies, NOS and Subtypes Variants
- Table: Combination/Mixed Histology Codes
- Table: Histologies Not Reportable for This Site
- Illustrations
- Multiple Primary Rules
- Histology Coding Rules



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General Instructions

How to Use the Solid Tumor Rules

Note: The rules do not apply to hematopoietic primaries (lymphoma and leukemia) of any site. Use the Hematopoietic & Lymphoid Neoplasm Coding Manual and Database for histologies M9590-M9992.

1. Use the following site-specific rules for tumors diagnosed 1/1/2018 and forward:
   - Malignant CNS and Peripheral Nerves
   - Non-Malignant CNS
   - Breast
   - Colon
   - Head and neck
   - Kidney
   - Lung
   - Urinary sites
2. Use the following site-specific rules for tumors diagnosed 1/1/2007 through 12/31/2018:
   - Malignant melanoma of the skin (not updated for 2018)
   - Other Sites (not updated for 2018) for solid tumors which occur in primary sites not covered by the site-specific rules.
3. 2007 MPH Rules and 2018 Solid Tumor Rules are used based on **date of diagnosis**.
   - Tumors diagnosed 01/01/2007 through 12/31/2017: Use 2007 MPH Rules
   - Tumors diagnosed 01/01/2018 and later: Use 2018 Solid Tumor Rules
   - An original tumor diagnosed before 1/1/2018 and a subsequent tumor diagnosed 1/1/2018 or later **in the same primary site**: Use the 2018 Solid Tumor Rules
4. The Solid Tumor Rules are **not used** to determine case reportability, stage, or tumor grade.
5. Other staging systems are **not used** to determine the number of primaries or histology.
6. Use rules in the following order:
   A. General Instructions
   B. Equivalent Terms and Definitions
   C. Multiple Primary rules
   D. Histology rules
7. The Solid Tumor Rules are available in text format.
8. **Notes and examples** are included with some of the rules to highlight key points or to add clarity to the rules.
9. Rules are in **hierarchical** order within each module. Use the first rule that applies and

STOP

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General Instructions

How to Use the Histology Rules

Note 1: Do not use these rules to determine case reportability.
Note 2: First use the Multiple Primary Rules to determine whether this is a single primary or multiple primaries. Determine the histology for each case.

1. Rules are divided into two sections: Single Tumor and Multiple Tumors Abstracted as a Single Primary
   A. Each section is a complete set of rules.
   B. Within each section, the rules are hierarchical. Use the first rule that applies and **STOP**. Do not continue through the rules.
2. Code the histology diagnosis prior to **neoadjuvant therapy**. Neoadjuvant therapy can change the histological profile of the tumor.
3. A list of terms which can be used and terms which cannot be used to code histology precede each set of histology rules.
4. Do not code histologies or subtypes/variants described by **ambiguous terms**:

Apparently	Most likely
Appears	Presumed
Comparable with	Probable
Compatible with	Suspect(ed)
Consistent with	Suspicious (for)
Favor(s)	Typical (of)
Malignant-appearing	

Note: Histology described by ambiguous terminology is coded **ONLY** when a case is accessioned based on ambiguous terminology and no other histology information is available/documented.

Ambiguous terminology from the SEER Manual and CoC Manual is used to determine reportability, not to determine histology.

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Multiple Primary Rules – Remember: Most People Have Only One Cancer

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Multiple Urothelial Neoplasms
(Sites with Laterality)

Rule M3 Abstract **multiple primaries**[ii] when there are:
- Separate/non-contiguous tumors in both the right **AND** left **renal pelvis AND**
- No other urinary sites are involved

Note 1: Only abstract a single primary when pathology confirms tumor(s) in the contralateral renal pelvis are metastatic.
Note 2: This rule is used **only** when there is **no involvement** (tumor) in the ureter(s), bladder, or urethra.

Rule M4 Abstract **multiple primaries**[ii] when there are:
- Separate/non-contiguous tumors in the right **AND** left **ureter AND**
- No other urinary sites are involved

Note 1: Only abstract a single primary when pathology confirms tumor(s) in contralateral ureter are metastatic.
Note 2: This rule is used **only** when there is **no involvement** (tumor) in the renal pelvis, bladder, and urethra.

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Multiple Urothelial Neoplasms
(Multiple Tumors – no other sites involved)

Rule M5 Abstract a **single primary**[i] when tumors are **noninvasive in situ /2** urothelial carcinoma (flat tumor) **8120/2 in the following sites:**
- **Bladder C67_ AND**
- One or both **ureter**(s) **C669**

Note 1: No other urinary organs are involved.
Note 2: Use this rule **ONLY** for noninvasive in situ urothelial carcinoma. For other histologies, continue through the rules.
Note 3: Urothelial carcinoma in situ spreads by intramucosal extension and may involve large areas of mucosal surface. The default for these cases is coding a bladder primary.

Rule M6 Abstract a **single primary**[i] when the patient has multiple occurrences of **invasive** tumors in the **bladder** that are:
- Papillary **urothelial** carcinoma **8130/3 AND/OR**
- Urothelial carcinoma **8120/3**

Note 1: This rule applies to **subtypes/variants** of both urothelial carcinoma and papillary urothelial carcinoma.
Note 2: A patient can have only one invasive urothelial bladder tumor per lifetime.
Note 3: The rules are **hierarchical**. Only use this rule when previous rules do not apply.

Rule M7 Abstract a **single primary**[i] when the patient has multiple recurrences of **in situ** papillary urothelial carcinoma **8130/2 OR non-invasive** urothelial carcinoma **8120/2** which:
- Occur in the **same** urinary site **OR**
- Are **multifocal**/multicentric tumors in **multiple** urinary sites

Note 1: Once the patient has the original in situ tumor, subsequent **in situ** tumors are recorded as a **recurrence** for those registrars who collect recurrence data.
Note 2: This rule includes **multiple in situ tumors** of the **bladder**.
Note 3: Timing does not apply.

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Multiple Urothelial Neoplasms
(One Site with In-situ and Invasive Neoplasm)

Rule M11 Abstract a **single primary**[i] (the invasive) when an **in situ** tumor is diagnosed **after** an **invasive** tumor **AND** tumors:
- Occur in the **same** urinary site **OR**
- Are **multifocal**/multicentric tumors in **multiple** urinary sites

Example: The first presentation was multifocal/multicentric invasive tumors in multiple urinary organs; the subsequent presentation was in situ tumor in at least one of the previously involved urinary organs.
Note 1: The rules are hierarchical. Only use this rule when previous rules do not apply.
Note 2: The tumors may be a NOS and a subtype/variant of that NOS. See Table 2 in the Equivalent Terms and Definitions for listings of NOS and subtype/variants.
Note 3: Once the patient has an invasive tumor, the subsequent **in situ** is recorded as a **recurrence** for those registrars who collect recurrence data.

Rule M11 Abstract a **single primary**[i] (the invasive) when an **in situ** tumor is diagnosed **after** an **invasive** tumor **AND** tumors:
- Occur in the **same** urinary site **OR**
- Are **multifocal**/multicentric tumors in **multiple** urinary sites

Example: The first presentation was multifocal/multicentric invasive tumors in multiple urinary organs; the subsequent presentation was in situ tumor in at least one of the previously involved urinary organs.
Note 1: The rules are hierarchical. Only use this rule when previous rules do not apply.
Note 2: The tumors may be a NOS and a subtype/variant of that NOS. See Table 2 in the Equivalent Terms and Definitions for listings of NOS and subtype/variants.
Note 3: Once the patient has an invasive tumor, the subsequent **in situ** is recorded as a **recurrence** for those registrars who collect recurrence data.

Rule M14 Abstract **multiple primaries**[ii] when an **invasive** tumor occurs **more than 60** days after an **in situ** tumor **AND** tumors:
- Occur in the **same** urinary site **OR**
- Are **multifocal**/multicentric tumors in **multiple** urinary sites

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Multiple Urothelial Neoplasms
(Multiple Bladder Tumors)

EXPLAIN THE 3-YEAR RULE

Rule M12 Abstract **multiple primaries**[ii] when the patient has a subsequent tumor after being **clinically disease-free** for **greater than three years** after the original diagnosis or last recurrence.
Note 1: This rule applies to all histologies and urinary sites with **the exception of invasive urothelial carcinoma of the bladder** (see previous rules).
Note 2: **Clinically** disease-free means that there was **no evidence** of recurrence on follow-up.
- Scans are NED
- Urine cytology is NED
- Scopes are NED

Note 3: When there is a recurrence within three years of diagnosis, the "**clock**" starts over. The time interval is calculated from the **date of last recurrence**.
Note 4: When it is **unknown/not documented** whether the patient had a recurrence, default to **date of diagnosis** to compute the time interval.
Note 5: The physician may state this is a **recurrence,** meaning the patient had a previous urinary site tumor and now has another urinary site tumor. **Follow the rules**; do not attempt to interpret the physician's statement.
Example: Patient is diagnosed with multifocal/multicentric urothelial carcinomas in the ureter and renal pelvis in January 2018. Both the kidney and ureter are surgically removed. In June 2022 the patient presents with tumor in the contralateral ureter. The physician states this is a recurrence of the original urothelial carcinoma. Code a new primary for the 2022 ureter carcinoma.

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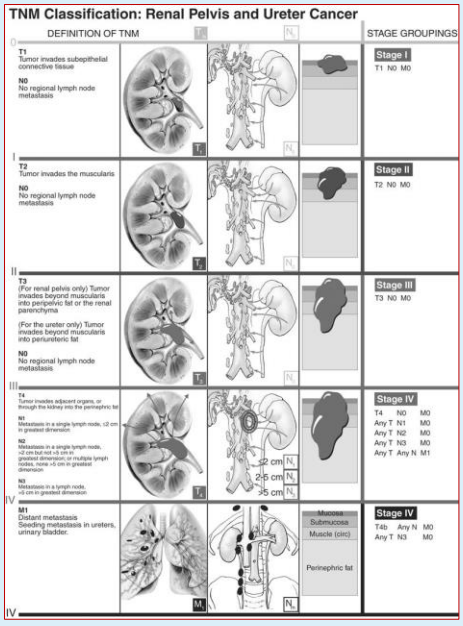
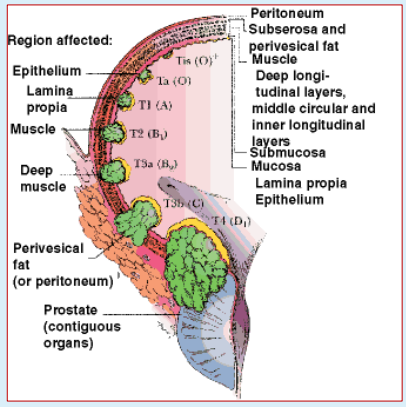


Urothelial Cancer Staging



http://onlinehealthcareservi ces.com and http://uronotes2012.blogspot.com/2012/07

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Urothelial Cancer Staging

- While the Solid Tumor Multiple Primary Rules may group four anatomy codes into one 'site'; TNM and other staging systems do not group them for staging. Staging relies on the anatomy of the most significant neoplasm which is often the largest, deepest and most extensive tumor when there are multiple anatomic locations involved. So, how do you go about selecting chapter & tumor?

AJCC Chapter Calculation

Collapsed Table | Full Table

Histology	AJCC ID	Description
8000, 8010, 8020, 8031, 8041, 8082	62.1	Urinary Bladder: Urothelial Carcinomas
8120, 8122, 8130, 8131	62.1	Urinary Bladder: Urothelial Carcinomas
8070, 8140	62.2	Urinary Bladder: Squamous Cell Carcinoma and Adenocarcinoma
8001-8005, 8011-8015, 8021-8030, 8032-8040, 8042-8060, 8071-8081, 8083-8110	XX	Other Urinary Bladder
8121, 8123-8124, 8141-8700, 8720-8790, 9700-9701	XX	Other Urinary Bladder

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SS2018 – Urothelial/Urinary System

- URINARY SYSTEM
  - BLADDER, RENAL PELVIS AND URETERS ANATOMIC STRUCTURES
  - KIDNEY
  - KIDNEY RENAL PELVIS
  - DISTINGUISHING NONINVASIVE AND INVASIVE BLADDER CANCER
  - BLADDER
  - URETHRA
  - URINARY OTHER

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SS2018 – Urothelial/Urinary System

URINARY SYSTEM

BLADDER, RENAL PELVIS AND URETERS ANATOMIC STRUCTURES

Table of Anatomic Structures

PRIMARY SITE	MUCOSA -Epithelium -Lamina propria submucosa	MUSCULARIS PROPRIA	SEROSA
Bladder (C67_)	Yes	Yes	Yes, on superior surface
Renal pelvis (C659)	Yes	Yes	No
Ureter (C669)	Yes	Yes	No

The layers of the urinary tract include:

1. The **EPITHELIAL LAYER** contains no blood vessels or lymphatics
2. The **BASEMENT MEMBRANE**, a sheet of extracellular material, functions as a filtration barrier and a boundary involved in generating and maintaining tissue structure
3. The **LAMINA PROPRIA**, composed of areolar connective tissue, contains blood vessels, nerves, and, in some regions, glands. Once tumor has broken through the basement membrane into the lamina propria, it can spread by way of the lymphatics and blood vessels to other parts of the body
4. The urinary sites do NOT have a **MUSCULARIS MUCOSAE**, and, therefore, the lamina propria and the submucosa are difficult to separate. These terms are used interchangeably
5. The **SUBMUCOSA** is a thick layer of either dense or areolar connective tissue. It contains blood vessels, lymphatic vessels, nerves, and, in some regions, glands
6. The **MUSCULARIS PROPRIA** is composed of multiple layers of muscle tissue; it constitutes the wall of the organ
7. The **SEROSA**, the outermost layer covering, is a serous membrane, part of the visceral peritoneum. It covers only the superior surface of the bladder. There is no serosa on the renal pelvis or ureters.
   a. Where there is no serosa, the connective tissue of surrounding structures merges with the connective tissue of the urinary organs and is called **ADVENTITIA.**

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SS2018 – Urothelial System

DISTINGUISHING NONINVASIVE AND INVASIVE BLADDER CANCER

1. The two main types of bladder cancer are the flat (sessile) variety and the papillary type.
   a. Only the flat (sessile) variety is called in situ when tumor has not penetrated the basement membrane
   b. Papillary tumor that has not penetrated the basement membrane is called noninvasive, and pathologists use many different descriptive terms for noninvasive papillary transitional cell carcinoma.
   c. Frequently, the pathology report does not contain a definite statement of noninvasion; however, noninvasion can be inferred from the microscopic description.
   d. The more commonly used descriptions for noninvasion are listed below.
2. Careful attention must be given to the use of the term "confined to mucosa" for bladder. Historically, carcinomas described as "confined to mucosa" were coded as localized. However, pathologists use this designation for noninvasion as well. To rule out the possibility of assigning noninvasive tumors in this category, abstractors should determine:
   a. If the tumor is confined to the epithelium, then it is noninvasive.
   b. If the tumor has penetrated the basement membrane to invade the lamina propria, then it is invasive
3. The terms lamina propria, submucosa, stroma, and subepithelial connective tissue are used interchangeably.

Note: **Only if the distinction cannot be made should the tumor be assigned 1 (localized) for "confined to mucosa."**

Definite statements of noninvasion for papillary transitional cell carcinomas include
Noninfiltrating
Noninvasive
No evidence of invasion
No extension into lamina propria
No stromal invasion
No extension into underlying supporting tissue
Negative lamina propria & superficial muscle
Negative muscle and (subepithelial) connective tissue
No infiltrative behavior/component

Inferred descriptions of noninvasion for papillary transitional cell carcinomas include
No involvement of muscularis propria and no mention of subepithelium/submucosa
No statement of invasion (microscopic description present)
(Underlying) Tissue insufficient to judge depth of invasion
No invasion of bladder wall
No involvement of muscularis propria
Benign deeper tissue
Microscopic description problematic (noninvasion versus superficial invasion)
Frond surfaced by transitional cell
No mural infiltration
No evidence of invasion (no sampled stroma)
Confined to mucosa

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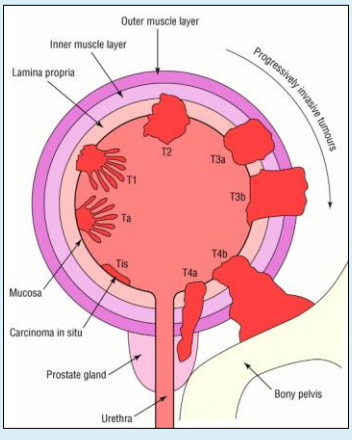
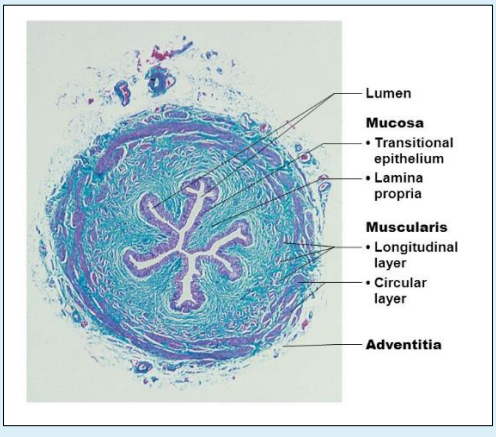
Primary Tumor – T Category





Source: http://topmedicaljournals.com

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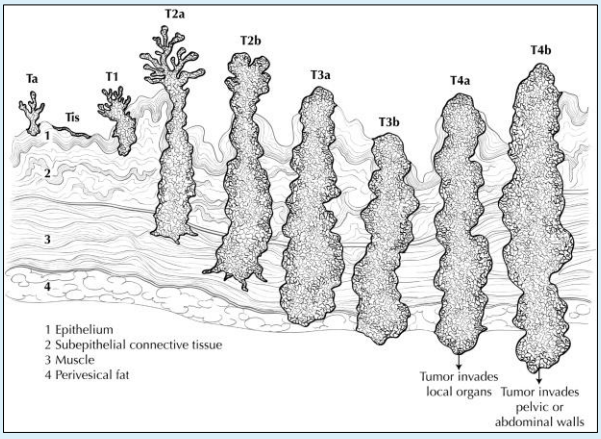
Primary Tumor – T Category



Urinary Bladder	
Ta	Noninvasive papillary
Tis	In situ: "flat tumour"
T1	Subepithelial connective tissue
T2	Muscularis
T2a	Inner half
T2b	Outer half
T3	Beyond muscularis
T3a	Microscopically
T3b	Extravesical mass
T4a	Prostate, uterus, vagina
T4b	Pelvic wall, abdominal wall

Compton, C.C., Byrd, D.R., et al., AJCC Cancer Staging Atlas, 2nd Edition. New York: Springer, 2012. ©AJCC

Non-Invasive // Carcinoma Insitu

Summary
The following rules should be applied for carcinoma *in situ* depending on when the case was diagnosed. This is based on a diagnostic biopsy with microscopic evidence of *in situ* for the clinical stage, and the appropriate surgical resection performed for the pathological stage.

- Cases diagnosed 2010 – 2016, Seventh Edition:
  - pTis cN0 cM0 clinical stage 0
  - pTis cN0 cM0 pathological stage 0
- Cases diagnosed 2017 – , Eighth Edition:
  - cTis cN0 cM0 clinical stage 0
  - pTis cN0 cM0 pathological stage 0

Pathological Stage 0

- In situ neoplasia is an exception to the stage grouping guidelines that otherwise require regional lymph node evaluation for pathological classification. By definition, in situ neoplasia has not involved any structures in the primary organ that would allow tumor cells to spread to regional nodes or distant sites.
- **The primary tumor surgical resection criteria for pathological stage must be met in order to assign pathological Stage 0.**
- Lymph node microscopic assessment is not necessary to assign pathological Stage 0

http://cancerstaging.org - AJCC Curriculum for Registrars

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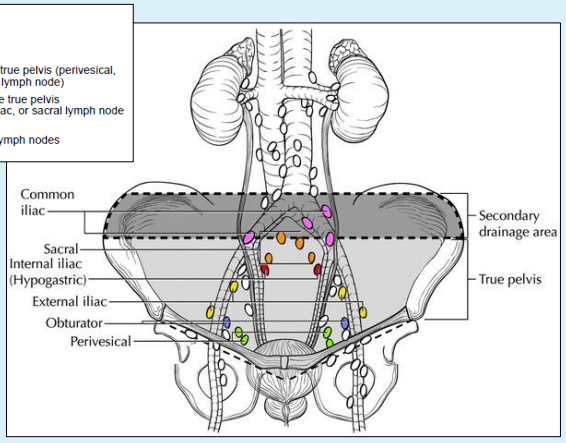
Regional Lymph Nodes – N Category

N	Regional Lymph Nodes
NX	Lymph nodes cannot be assessed
N0	No lymph node metastasis
N1	Single regional lymph node metastasis in the true pelvis (perivesical, obturator, internal and external iliac, or sacral lymph node)
N2	Multiple regional lymph node metastasis in the true pelvis (perivesical, obturator, internal and external iliac, or sacral lymph node metastasis)
N3	Lymph node metastasis to the common iliac lymph nodes

Regional Lymph Nodes Includes both Primary and Secondary Lymph Node Drainage Areas



https://www.researchgate.net/figure/278650442_fig2_Figure-2-2-Regional-lymph-nodes-of-the-urinary-bladder

Stage/Prognostic Group

NO SSDI's REQUIRED

Table 2. **AJCC Prognostic Groups**

	T	N	M		T	N	M
Stage 0a	Ta	N0	M0	**Stage IIIB**	T1-T4a	N2,N3	M0
Stage 0is	Tis	N0	M0	**Stage IVA**	T4b	Any N	M0
Stage I	T1	N0	M0		Any T	Any N	M1a
Stage II	T2a	N0	M0	**Stage IVB**	Any T	Any N	M1b
	T2b	N0	M0				
Stage IIIA	T3a	N0	M0				
	T3b	N0	M0				
	T4a	N0	M0				
	T1-T4a	N1	M0				

Continue

NCCN/AJCC

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Staging When Multiple Tumors

- Multiple Tumors Abstracted as a Single Primary
- How do You Code Primary Site in These Cases?
- Multiple Urothelial Tumors in Single Site (multiple bladder tumors)
- Multiple Urothelial Tumors in More Than One Site (within 3 yrs)
- Multiple Urothelial Tumors in More Than One Site (>3 years)
- Urothelial and non-Urothelial Tumors in One Site/Multiple Sites

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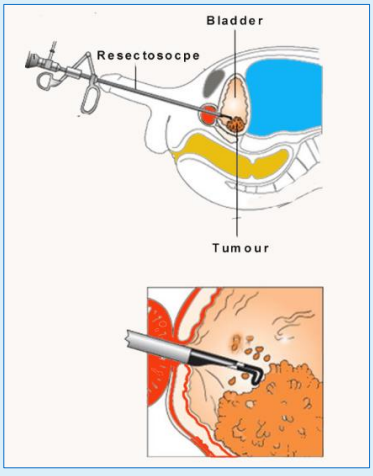
Treatment - Surgery

TURBT IS NOT A CYSTECTOMY – NO PATHOLOGICAL STAGE



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Treatment - Surgery

TURBT IS NOT A CYSTECTOMY – NO PATHOLOGICAL STAGE

- Partial Cystectomy – cT2 muscle invasive disease – solitary lesion
- Total Cystectomy – high-grade cT1 or muscle-invasive disease
- Radical Cystectomy – cT2, cT3, cT4a disease (plus chemo)
- Radical Cystoprostatectomy (for bladder cancer)
- Radical Nephroureteroectomy – high-grade upper GU tract tumors

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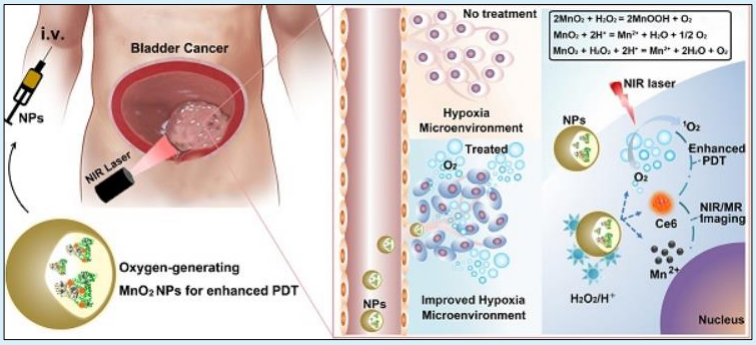
Treatment - Intravesical

- Given for non-muscle invasive disease
- Often missing in first course of therapy in hospital records – why?
- Most cases are actually diagnosed in urologist office on cysto
- Most cases get intravesical treatment in urologist office
- Registrars do not look for intravesical treatment in medical record
- Can be Intravesical Chemotherapy or Intravesical BCG (Immuno) – why different?
- Three Points in Time Intravesical Treatment is Given
  - Immecdiate Postoperative following TURBT – Gemcitabine or Mitomycin
  - Induction (Adjuvant) Chemo or BCG – 3-4 weeks after TURBT – once a week X 4
  - Maintenance BCG – 1 year post dx for intermediate-risk and 3 years for high risk non-muscle invasive disease

104

Treatment – Photodynamic Therapy



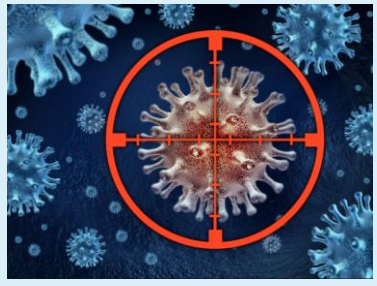
Tingsheng Lin, Xiaozhi Zhao, Sheng Zhao, Hang Yu, Wenmin Cao, Wei Chen, Hui Wei, Hongqian Guo
Theranostics 2018; 8(4): 990-1004. doi:10.7150/thno.22465

105

Genetics and Targeted Therapies

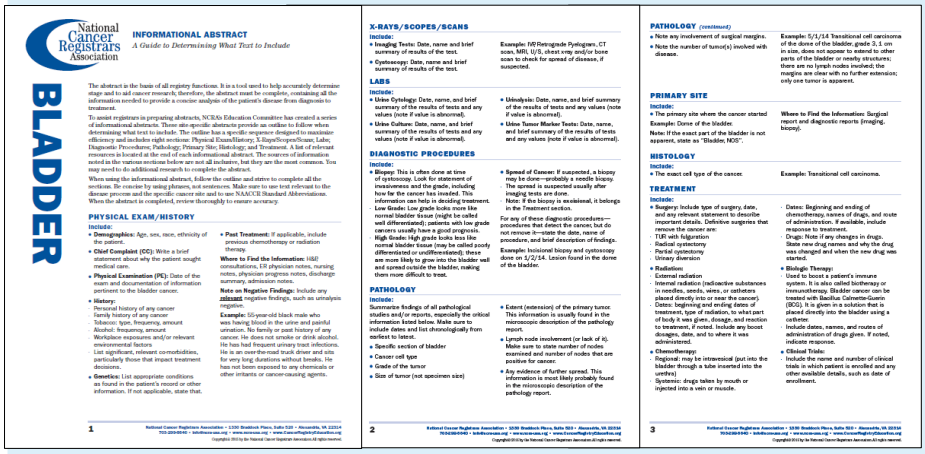
Investigational - Immune Checkpoint Inhibitors for Urothelial Cancers

- Target PD
  - atezolizumab (Tecentriq)
  - durvalumab (Uimfinizi)
  - avelumab (Bavencio)
- Target PDL-1
  - pembrolizumab (Keytruda)
  - nivolumab (Opdivo)
- Anti-angiogenesis Drugs
  - Bevacizumab (Avastin)
  - Sorafenib (Nexavar)
  - cabozantinib (Cometriq)
  - Pazopanib (Votrient)



106

Text Documentation Bladder



BLADDER

National Cancer Registrars Association

INFORMATIONAL ABSTRACT
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When using the informational abstract, follow the outline and strive to complete all the sections. Be concise by using phrases, not sentences. Make sure to use text relevant to the disease process and the specific cancer site and to use NAACCR Standard Abbreviations. When the abstract is completed, review thoroughly to ensure accuracy.

PHYSICAL EXAM/HISTORY

Include:

- **Demographics:** Age, sex, race, ethnicity of the patient.
- **Chief Complaint (CC):** Write a brief statement about why the patient sought medical care.
- **Physical Examination (PE):** Date of the exam and documentation of information pertinent to the bladder cancer.
- **History:**
  Personal history of any cancer
  Family history of any cancer
  Tobacco: type, frequency, amount
  Alcohol: frequency, amount
  Workplace exposures and/or relevant environmental factors
  List significant, relevant co-morbidities, particularly those that impact treatment decisions.
- **Genetics:** List appropriate conditions as found in the patient's record or other information. If not applicable, state that.
- **Past Treatment:** If applicable, include previous chemotherapy or radiation therapy.

Where to Find the Information: H&P, consultations, ER physician notes, nursing notes, physician progress notes, discharge summary, admission notes.

Note on Negative Findings: Include any relevant negative findings, such as urinalysis negative.

Example: 55-year-old black male who was having blood in the urine and painful urination. No family or past history of any cancer. He does not smoke or drink alcohol. He has had frequent urinary tract infections. He is an over-the-road truck driver and sits for very long durations without breaks. He has not been exposed to any chemicals or other irritants or cancer-causing agents.

1

X-RAYS/SCOPES/SCANS

Include:

- **Imaging Tests:** Date, name and brief summary of results of the test.
- **Cystoscopy:** Date, name and brief summary of results of the test.

Example: IVP/retrograde Pyelogram, CT scan, MRI, U/S, chest x-ray and/or bone scan to check for spread of disease, if suspected.

LABS

Include:

- **Urine Cytology:** Date, name, and brief summary of the results of tests and any values (note if value is abnormal).
- **Urine Culture:** Date, name, and brief summary of the results of tests and any values (note if value is abnormal).
- **Urinalysis:** Date, name, and brief summary of the results of tests and any values (note if value is abnormal).
- **Urine Tumor Marker Tests:** Date, name, and brief summary of the results of tests and any values (note if value is abnormal).

DIAGNOSTIC PROCEDURES

Include:

- **Biopsy:** This is often done at time of cystoscopy. Look for statement of invasiveness and the grade, including how far the cancer has invaded. This information can help in deciding treatment.
  - **Low Grade:** Low grade looks more like normal bladder tissue (might be called well differentiated); patients with low grade cancers usually have a good prognosis.
  - **High Grade:** High grade looks less like normal bladder tissue (may be called poorly differentiated or undifferentiated); these are more likely to grow into the bladder wall and spread outside the bladder, making them more difficult to treat.
- **Spread of Cancer:** If suspected, a biopsy may be done—probably a needle biopsy.
  - The spread is suspected usually after imaging tests are done.
  - Note: If the biopsy is excisional, it belongs in the Treatment section.

For any of these diagnostic procedures—procedures that detect the cancer, but do not remove it—state the date, name of procedure, and brief description of findings.

Example: Incisional biopsy and cystoscopy done on 1/2/14. Lesion found in the dome of the bladder.

PATHOLOGY

Include:

Summarize findings of all pathological studies and/or reports, especially the critical information listed below. Make sure to include dates and list chronologically from earliest to latest.

- Specific section of bladder
- Cancer cell type
- Grade of the tumor
- Size of tumor (not specimen size)
- Extent (extension) of the primary tumor. This information is usually found in the microscopic description of the pathology report.
- Lymph node involvement (or lack of it). Make sure to state number of nodes examined and number of nodes that are positive for cancer.
- Any evidence of further spread. This information is most likely probably found in the microscopic description of the pathology report.

2

PATHOLOGY *(continued)*

- Note any involvement of surgical margins.
- Note the number of tumor(s) involved with disease.

Example: 5/1/14 Transitional cell carcinoma of the dome of the bladder, grade 3, 1 cm in size, does not appear to extend to other parts of the bladder or nearby structures; there are no lymph nodes involved; the margins are clear with no further extension; only one tumor is apparent.

PRIMARY SITE

Include:

- The primary site where the cancer started

Example: Dome of the bladder.

Note: If the exact part of the bladder is not apparent, state as "Bladder, NOS".

Where to Find the Information: Surgical report and diagnostic reports (imaging, biopsy).

HISTOLOGY

Include:

- The exact cell type of the cancer.

Example: Transitional cell carcinoma.

TREATMENT

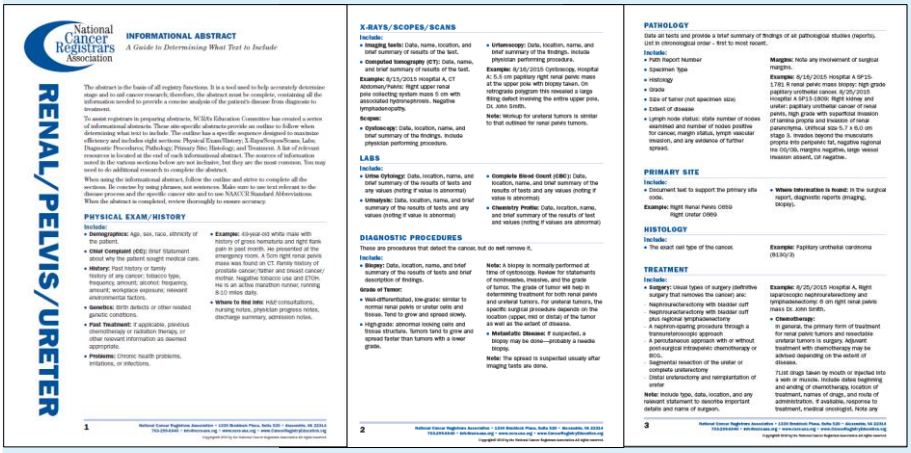
Include:

- **Surgery:** Include type of surgery, date, and any relevant statement to describe important details. Definitive surgeries that remove the cancer are:
  - TUR with fulguration
  - Radical cystectomy
  - Partial cystectomy
  - Urinary diversion
- **Radiation:**
  - External radiation
  - Internal radiation (radioactive substances in needles, seeds, wires, or catheters placed directly into or near the cancer).
  - Dates: beginning and ending dates of treatment, type of radiation, to what part of body it was given, dosage, and mention to treatment, if noted. Include any boost dosages, date, and to where it was administered.
- **Chemotherapy:**
  - Regional: may be intravesical (put into the bladder through a tube inserted into the urethra)
  - Systemic: drugs taken by mouth or injected into a vein or muscle.
  - Dates: Beginning and ending of chemotherapy, names of drugs, and route of administration. If available, include response to treatment.
  - Drugs: Note if any changes in drugs. State new drug names and why the drug was changed and when the new drug was started.
- **Radiologic Therapy:**
  - Used to boost a patient's immune system. It is also called biotherapy or immunotherapy. Bladder cancer can be treated with Bacillus Calmette-Guerin (BCG). It is given in a solution that is placed directly into the bladder using a catheter.
  - Include dates, names, and routes of administration of drugs given. If noted, indicate response.
- **Clinical Trials:**
  - Include the name and number of clinical trials in which patient is enrolled and any other available details, such as date of enrollment.

3

Source: NCRA Informational Abstracts – Improving Text

Text Documentation Renal Pelvis/Ureter



RENAL/PELVIS/URETER

National Cancer Registrars Association

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PHYSICAL EXAM/HISTORY

Include:

- **Demographics:** Age, sex, race, ethnicity of the patient.
- **Chief Complaint (CC):** Brief statement about why the patient sought medical care.
- **History:** Past history or family history of any cancer; tobacco type, frequency, amount; alcohol: frequency, amount; workplace exposure; relevant environmental factors.
- **Genetics:** Birth defects or other related genetic conditions.
- **Past Treatment:** If applicable, previous chemotherapy or radiation therapy, or other relevant information as deemed appropriate.
- **Prognosis:** Chronic health problems, irritations, or infections.

- **Example:** 49-year-old white male with history of gross hematuria and right flank pain in past month. He presented at the emergency room. A 5cm right renal pelvis mass was found on CT. Family history of prostate cancer/father and breast cancer/mother. Negative tobacco use and ETOH. He is an active marathon runner, running 8-10 miles daily.
- **Where to find one:** H&P consultations, nursing notes, physician progress notes, discharge summary, admission notes.

1

X-RAYS/SCOPES/SCANS

Include:

- **Imaging tests:** Date, name, location, and brief summary of results of the test.
- **Computed tomography (CT):** Date, name, and brief summary of results of the test.

Example: 8/15/2015 Hospital A, CT Abdomen/Pelvis: Right upper renal pole collecting system mass 6 cm with associated hydronephrosis. Negative lymphadenopathy.

Scopes:

- **Cystoscopy:** Date, location, name, and brief summary of the findings. Include physician performing procedure.
- **Ureteroscopy:** Date, location, name, and brief summary of the findings. Include physician performing procedure.

Example: 8/16/2015 Hospital A: S/S cm papillary right renal pelvic mass at the upper pole with biopsy taken. On retrograde program this revealed a large filling defect involving the entire upper pole. Dr. John Smith.

Note: Workup for ureteral tumors is similar to that outlined for renal pelvis tumors.

LABS

Include:

- **Urine Cytology:** Date, location, name, and brief summary of the results of tests and any values (noting if value is abnormal)
- **Urinalysis:** Date, location, name, and brief summary of the results of tests and any values (noting if value is abnormal)
- **Complete Blood Count (CBC):** Date, location, name, and brief summary of the results of tests and any values (noting if value is abnormal)
- **Chemistry Profile:** Date, location, name, and brief summary of the results of test and values (noting if values are abnormal)

DIAGNOSTIC PROCEDURES

These are procedures that detect the cancer, but do not remove it.

Include:

- **Biopsy:** Date, location, name, and brief summary of the results of tests and brief description of findings.

Grade of Tumor:

- Well-differentiated, low-grade: similar to normal renal pelvis or ureter cells and tissue. Tend to grow and spread slowly.
- High-grade: abnormal looking cells and tissue structure. Tumors tend to grow and spread faster than tumors with a lower grade.

Note: A biopsy is normally performed at time of cystoscopy. Review for statements of noninvasive, invasive, and the grade of tumor. The grade of tumor will help in determining treatment for both renal pelvis and ureteral tumors. For ureteral tumors, the specific surgical procedure depends on the location (upper, mid or distal) of the tumor as well as the extent of disease.

- **Metastatic Disease:** If suspected, a biopsy may be done—probably a needle biopsy.

Note: The spread is suspected usually after imaging tests are done.

2

PATHOLOGY

Data all tests and provide a brief summary of findings of all pathological studies (reports). List in chronological order – first to most recent.

Include:

- Path Report Number
- Specimen Type
- Histology
- Grade
- Size of tumor (not specimen size)
- Extent of disease
- Lymph node status: state number of nodes examined and number of nodes positive for cancer, margin status, lymph vascular invasion, and any evidence of further spread.

Margins: Note any involvement of surgical margins.

Example: 8/16/2015 Hospital A SP15-1781 R renal pelvic mass biopsy: high grade papillary urothelial cancer. 8/25/2015 Hospital A SP15-13806: Right kidney and ureter: papillary urothelial cancer of renal pelvis, high grade with superficial invasion of lamina propria and invasion of renal parenchyma. Urethral size 5.7 x 6.0 cm stage 3. Invades beyond the muscularis propria into peripelvic fat, negative regional lns 09/09, margins negative, large vessel invasion absent, cat negative.

PRIMARY SITE

Include:

- Document text to support the primary site code.

Example: Right Renal Pelvis C659
Right Ureter C669

- **Where Information is found:** In the surgical report, diagnostic reports (imaging, biopsy).

HISTOLOGY

Include:

- The exact cell type of the cancer.

Example: Papillary urothelial carcinoma (8130/3)

TREATMENT

Include:

- **Surgery:** Usual types of surgery (definitive surgery that removes the cancer) are:
  - Nephroureterectomy with bladder cuff
  - Nephroureterectomy with bladder cuff plus regional lymphadenectomy
  - A nephron-sparing procedure through a transureteroscopic approach
  - A percutaneous approach with or without post-surgical intrarenal chemotherapy or BCG.
  - Segmental resection of the ureter or complete ureterectomy
  - Distal ureterectomy and reimplantation of ureter

Note: Include type, date, location, and any relevant statement to describe important details and name of surgeon.

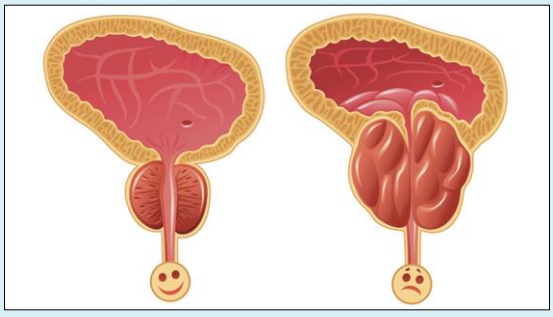
Example: 8/25/2015 Hospital A, Right laparoscopic nephroureterectomy and lymphadenectomy: 0 cm right renal pelvis mass Dr. John Smith.

- **Chemotherapy:**
  - In general, the primary form of treatment for renal pelvis tumors and resectable ureteral tumors is surgery. Adjuvant treatment with chemotherapy may be advised depending on the extent of disease.
  - 7List drugs taken by mouth or injected into a vein or muscle. Include dates beginning and ending of chemotherapy, location of treatment, names of drugs, and route of administration. If available, response to treatment, medical oncologist. Note any

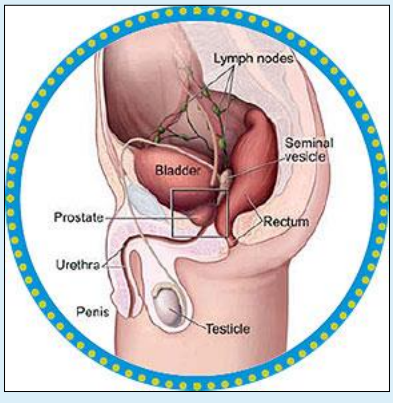
3

Source: NCRA Informational Abstracts – Improving Text

Neoplasms of the Prostate



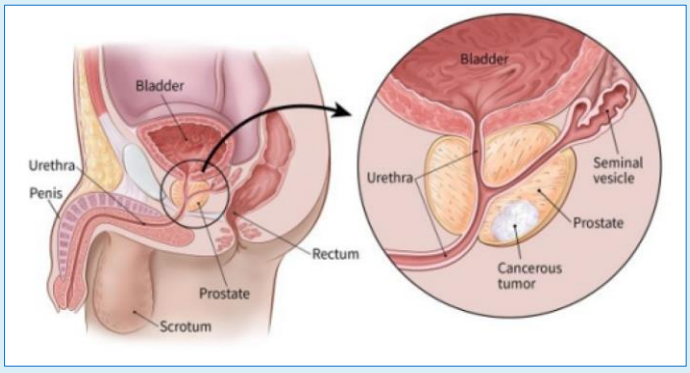
Prostate Regional Anatomy



- The prostate is a gland found ONLY in men
- It is located in front of the rectum and under the bladder
- The size of a healthy prostate gland is about the size of a walnut

Source: http://www.abbottdiagnostics.com , U.S. National Cancer Institute

Prostate Regional Anatomy



Source: American Cancer Society

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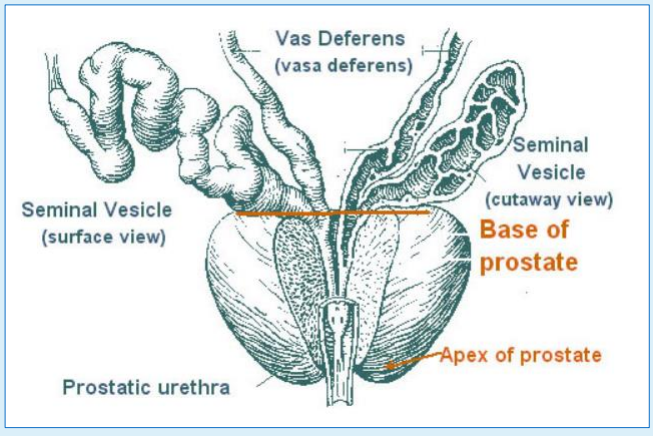
Prostate Regional Anatomy



Source: SEER Training Website

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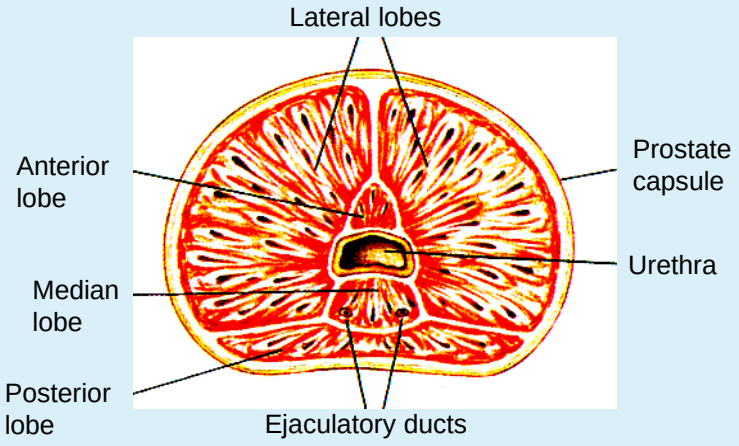
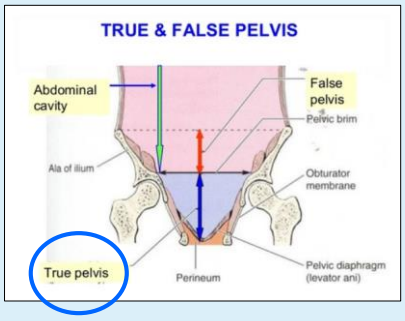
Prostate Anatomy



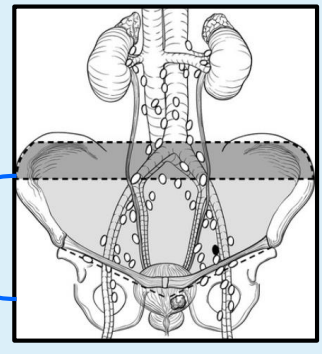
113

Source: SEER Training Website

Regional Lymph Nodes



Regional Lymph Nodes (N)	
Clinical	
NX	Regional lymph nodes were not assessed
N0	No regional lymph node metastasis
N1	Metastasis in regional lymph node(s)
Pathologic	
PNX	Regional nodes not sampled
pN0	No positive regional nodes
pN1	Metastases in regional nodes(s)



<u>Nodes of the True Pelvis</u>
Sacral, Obturator, Hypogastric, Internal and External Iliac, Pelvis, NOS

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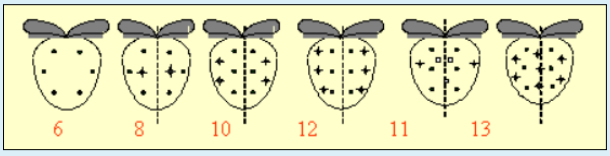
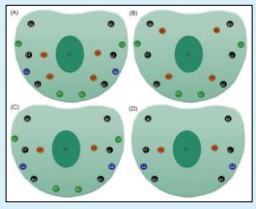
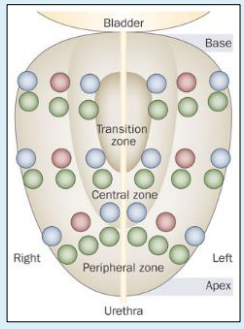
Anatomy Related to Diagnosis

Patterns for Needle Biopsy of Prostate



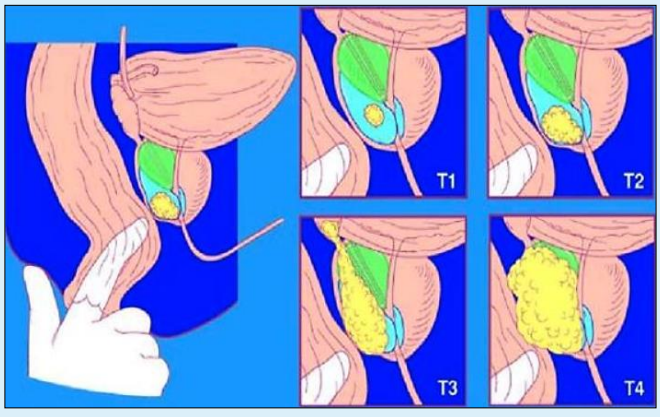




Material provided by Prostate Cancer Research Institute (PCRI)

115

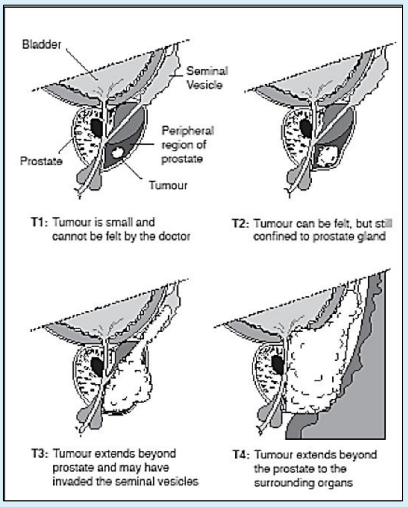
Anatomy Related to Stage - DRE



Material provided by Prostate Cancer Research Institute (PCRI)

116

Anatomy Related to Stage



Source: http://www.prostatecareqld.com.au

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PSA Lab Value Screening and Staging

- Rapid change in PSA over 1 year[1]
  - 0.75 ng/mL/year when PSA is 4-10 ng/mL
- High PSA value for age[1,2]
  - 4.0 ng/mL was originally used to differentiate normal PSA level from pathologic elevation
- Age-specific references have been used to improve sensitivity

	Age Group			
Parameter[3]	40-49	50-59	60-69	70-79
Serum PSA Concentration (ng/mL)	0-2.5	0-3.5	0-4.5	0-6.5

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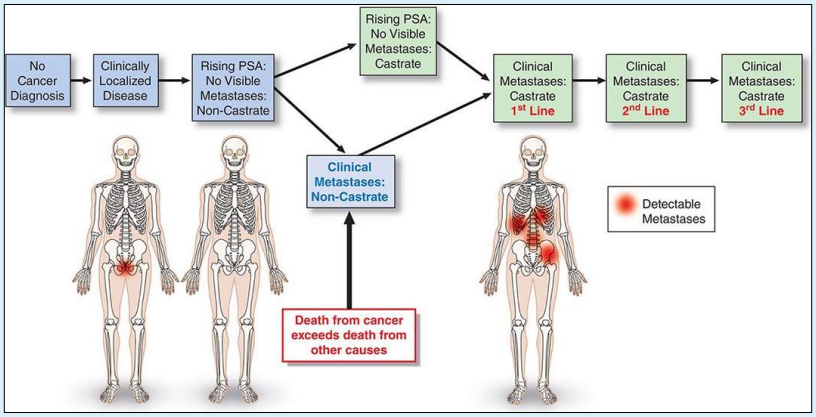
PSA Monitoring Over Time



http://clinicalgate.com/testicular-cancer-4/

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Prostate Tissue-Based Tests

Table 1. Available Tissue-Based Tests for Prostate Cancer Prognosis

Test	Platform	Populations Studied	Outcome(s) Reported (Test independently predicts)	References	Molecular Diagnostic Services Program (MolDX) Recommendations
Decipher	Whole-transcriptome 1.4M RNA expression (44,000 genes) oligonucleotide microarray optimized for FFPE tissue	Post radical prostatectomy (RP), adverse pathology/high-risk features	• Metastasis • Prostate cancer-specific mortality • Postoperative radiation sensitivity (PORTOS)	83,195,570,625-637	Cover post-RP for 1) pT2 with positive margins; 2) any pT3 disease; 3) rising PSA (above nadir)
		Post RP, biochemical recurrence	• Metastasis • Prostate cancer-specific mortality • PORTOS		
		Post RP, adjuvant, or salvage radiation	• Metastasis • Prostate cancer-specific mortality • PORTOS		
		Biopsy, localized prostate cancer post RP or EBRT	• Metastasis • Prostate cancer-specific mortality • Gleason grade ≥4 disease at RP		
Ki-67	IHC	Biopsy, intermediate- to high-risk treated with EBRT	• Metastasis	638-641	Not recommended
		Biopsy, conservatively managed (active surveillance)	• Prostate cancer-specific mortality		
Oncotype DX Prostate	Quantitative RT-PCR for 12 prostate cancer-related genes and 5 housekeeping controls	Biopsy, low- to intermediate-risk treated with RP	• Non-organ-confined pT3 or Gleason grade 4 disease on RP	82,642,643	Cover post-biopsy for NCCN very-low-, low-risk, and favorable intermediate-risk prostate cancer in patients with at least 10 years life expectancy who have not received treatment for prostate cancer and are candidates for active surveillance or definitive therapy
Prolaris	Quantitative RT-PCR for 31 cell cycle-related genes and 15 housekeeping controls	Transurethral resection of the prostate (TURP), conservatively managed (active surveillance)	• Prostate cancer-specific mortality	78-81,644-646	Cover post-biopsy for NCCN very-low-, low-risk, and favorable intermediate-risk prostate cancer in patients with at least 10 years life expectancy who have not received treatment for prostate cancer and are candidates for active surveillance or definitive therapy
		Biopsy, conservatively managed (active surveillance)	• Prostate cancer-specific mortality		
		Biopsy, localized prostate cancer	• Biochemical recurrence • Metastasis		
		Biopsy, intermediate-risk treated with EBRT	• Biochemical recurrence		
		RP, node-negative localized prostate cancer	• Biochemical recurrence		
ProMark	Multiplex immunofluorescent staining of 8 proteins	Biopsy, Gleason grade 3+3 or 3+4	• Non–organ-confined pT3 or Gleason pattern 4 disease on RP	647	Cover post-biopsy for NCCN very-low- and low-risk prostate cancer in patients with at least 10 years life expectancy who have not received treatment for prostate cancer and are candidates for active surveillance or definitive therapy.
PTEN	Fluorescent in situ hybridization or IHC	TURP, conservatively managed (active surveillance)	• Prostate cancer-specific mortality	648-652	Not recommended
		Biopsy, Gleason grade 3+3	• Upgrading to Gleason pattern 4 on RP		
		RP, high-risk localized disease	• Biochemical recurrence		

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Workup

- Annual Physical Exam
  - Symptoms
  - Digital Rectal Examination
  - PSA Monitoring (timing?)
- TRUS (black & white) or color Doppler Ultrasound with Biopsy
  - Advantage of color Doppler is visualize more blood vessels near tumor
- Imaging with CT and/or MRI
- Multiparametric MRI - regular MRI plus one or more other type MRI
- Enhanced MRI – 2 scans on different days with magnetic injection
- PET Scan for advanced disease
- Bone Scan when bone metastases are suspected
- Treatment Depends on Outcome from Above Testing

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Histology

- Adenocarcinoma is primary histology in more than 95% of cases
- Adenocarcinoma In-Situ and PIN III are Not Reportable Cancers
- Other Histologies: ductal (adeno)carcinoma, squamous cell carcinoma, neuroendocrine (large cell and small cell) & endometrioid carcinoma *(see use of ambiguous terms for these)*
- Growth Patterns: glandular, cribriform, and solid-undifferentiated.
- Gleason/Grade is most relevant over histology for Prostate cases.

Rule H10 Code 8140 (adenocarcinoma, NOS) for prostate primaries when the diagnosis is acinar (adeno)carcinoma.

Do not code histologies or subtypes/variants described by **ambiguous terms**:

Apparently	Most likely
Appears	Presumed
Comparable with	Probable
Compatible with	Suspect(ed)
Consistent with	Suspicious (for)
Favor(s)	Typical (of)
Malignant appearing	

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Histology

COLLEGE of AMERICAN PATHOLOGISTS

Protocol for the Examination of Specimens From Patients With Carcinoma of the Prostate Gland

Version: Prostate 4.0.3.0 **Protocol Posting Date:** June 2017
Includes pTNM requirements from the 8th Edition, AJCC Staging Manual

For accreditation purposes, this protocol should be used for the following procedures AND tumor types:

Procedure	Description
Prostatectomy	Includes specimens designated radical prostatectomy
Tumor Type	**Description**
Carcinoma	Including all adenocarcinomas and histologic variants, neuroendocrine tumors, and small cell carcinomas.

This protocol is NOT required for accreditation purposes for the following:

Procedure
Needle biopsies, transurethral resection of the prostate gland (TURP)# or enucleations
Primary resection specimen with no residual cancer (eg, following neoadjuvant therapy)
Cytologic specimens

Transurethral resection of the prostate is NOT considered to be the definitive resection specimen, even though the entire cancer may be removed. This protocol is recommended for reporting TURP specimens for clinical care purposes, but it is not required for accreditation purposes.

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Histology – CAP Checklist

Histologic Type (select all that apply) (Note B)
___ Acinar adenocarcinoma
___ Ductal adenocarcinoma
___ Small-cell neuroendocrine carcinoma
___ Isolated intraductal carcinoma
___ Other histologic type not listed (specify): _____

Histologic Grade (Note C)
Grade Group and Gleason Score
___ Not applicable
___ Cannot be assessed
___ Grade group 1 (Gleason Score 3+3=6)
___ Grade group 2 (Gleason Score 3+4=7)
___ Grade group 3 (Gleason Score 4+3=7)
___ Grade group 4 (Gleason Score 4+4=8)
___ Grade group 4 (Gleason Score 3+5=8)
___ Grade group 4 (Gleason Score 5+3=8)
___ Grade group 5 (Gleason Score 4+5=9)
___ Grade group 5 (Gleason Score 5+4=9)
___ Grade group 5 (Gleason Score 5+5=10)

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2018 Site Specific Grade

- **Clinical Grade** - the grade of a solid primary tumor before any treatment. Treatment may include surgical resection, systemic therapy, radiation therapy, or neoadjuvant therapy. NOTE: All surgical procedures are not treatment, e.g. TURB and endoscopic biopsies.
- **Pathological Grade** - the grade of a solid primary tumor that has been surgically resected and for which no neoadjuvant therapy was administered. If AJCC pathological staging is being assigned, the tumor must have met the surgical resection requirements in the AJCC manual. This may include the grade from the clinical workup, as all information from diagnosis (clinical staging) through the surgical resection is used for pathological staging.
- **Post-Therapy Grade** - the grade of a solid primary tumor that has been resected following neoadjuvant therapy. If AJCC post-therapy staging is being assigned, the tumor must have met the surgical resection requirements for yp in the AJCC manual. Neoadjuvant therapy must meet guidelines or standards, and not be that given for variable or unconventional reasons as noted in the AJCC manual.

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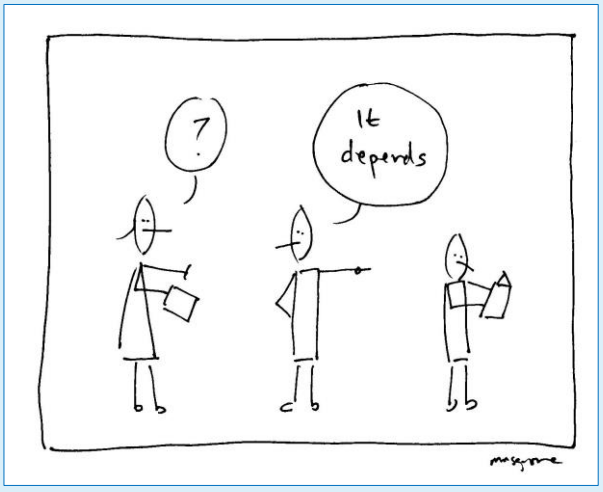
2018 Grade – Prostate



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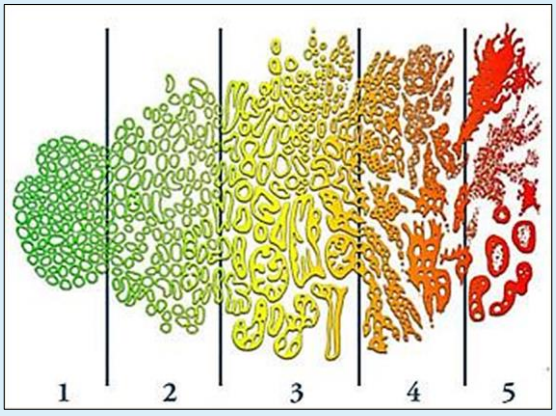
Grade – Prostate
Gleason Pattern and Score



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Grade – Prostate
Gleason Pattern and Score

Code	Grade Description
1	Grade Group 1: Gleason score less than or equal to 6
2	Grade Group 2: Gleason score 7 Gleason pattern 3+4
3	Grade Group 3: Gleason score 7 Gleason pattern 4+3
4	Grade Group 4: Gleason score 8
5	Grade Group 5: Gleason score 9 or 10
A	Well differentiated
B	Moderately differentiated
C	Poorly differentiated
D	Undifferentiated, anaplastic
E	Stated as "Gleason score 7" with no patterns documented or Any Gleason patterns combination equal to 7 not specified in 2 or 3
9	Grade cannot be assessed; Unknown

Note 6: If you are assigning an AJCC 8th edition stage group

- Grade is required to assign stage group
- Codes A-E are treated as an unknown grade when assigning AJCC stage group
- An unknown grade may result in an unknown stage group

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2018 Solid Tumor Rules – MP/H

Rule M3 **Adenocarcinoma** of the **prostate** is always a single primary. *
Note 1: Report only one adenocarcinoma of the prostate per patient per lifetime.
Note 2: 95% of prostate malignancies are the common (acinar) adenocarcinoma histology (8140). See Equivalent Terms, Definitions and Tables for more information.
Note 3: If patient has a previous acinar adenocarcinoma of the prostate in the database and is diagnosed with adenocarcinoma in 2007 it is a single primary.

Rule H10 Code 8140 (adenocarcinoma, NOS) for prostate primaries when the diagnosis is acinar (adeno)carcinoma.

Do not code histologies or subtypes/variants described by **ambiguous terms**:

Apparently	Most likely
Appears	Presumed
Comparable with	Probable
Compatible with	Suspect(ed)
Consistent with	Suspicious (for)
Favor(s)	Typical (of)
Malignant appearing	

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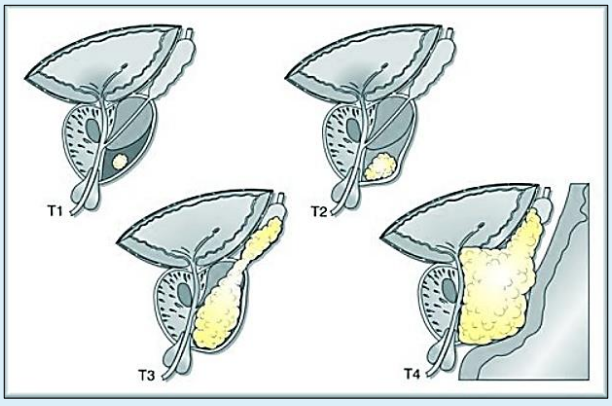
Staging - Prostate



http://www.prostatecareqld.com.au

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SUMMARY STAGE 2018
GENERAL CODING INSTRUCTIONS
APRIL 2018

SUMMARY STAGE

0 In situ, intraepithelial, noninvasive

1 Localized only (localized, NOS)

- Clinically apparent or inapparent tumor
- Confined to prostate, NOS
- Intracapsular involvement only
- Invasion into (but not beyond) prostatic capsule
- No extracapsular extension
- One or more lobes involved

2 Regional by direct extension only

- Bladder neck
- Bladder, NOS
- External sphincter
- Extraprostatic/extracapsular extension (beyond prostate capsule), unilateral, bilateral, NOS
- Extraprostatic urethra (membranous urethra)
- Fixation, NOS
- Levator muscles
- Periprostatic tissue
- Rectovesical (Denor
- Rectum
- Seminal vesicles
- Skeletal muscle
- Through capsule, NC
- Ureter(s)

3 Regional lymph node(s) involved only

- Hypogastric
- Iliac, NOS
  - External
  - Internal (hypogastric) (obturator), NOS
- Pelvic, NOS
- Periprostatic
- Sacral, NOS
  - Lateral (laterosacral)
  - Middle (promontory) (Gerota's node)
  - Presacral
- Regional lymph node(s), NOS
  - Lymph node(s), NOS

4 Regional by BOTH direct extension AND regional lymph node(s) involved

- Codes (2) + (3)

7 Distant site(s)/lymph node(s) involved

- Distant site(s) (including further contiguous extension)
  - Bone
  - Extension to or fixation to pelvic wall or pelvic bone
  - "Frozen pelvis", NOS
  - Other organs
  - Penis
  - Sigmoid colon
  - Soft tissue other than periprostatic
- Distant lymph node(s), NOS
  - Aortic (lateral [lumbar], para-aortic, periaortic, NOS)
  - Cervical
  - Common iliac
  - Inguinal (deep, NOS)
    - Node of Cloquet or Rosenmuller (highest deep inguinal)
    - Superficial (femoral)
  - Retroperitoneal, NOS
  - Scalene (inferior deep cervical)
  - Supraclavicular (transverse cervical)
- Distant metastasis, NOS
  - Carcinomatosis
  - Distant metastasis WITH or WITHOUT distant lymph node(s)

9 Unknown if extension or metastasis

SS2018 Manual

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AJCC TNM Staging - Prostate

NCCN National Comprehensive Cancer Network®

NCCN Guidelines Version 4.2018
Prostate Cancer

NCCN Guidelines Index
Table of Contents
Discussion

American Joint Committee on Cancer (AJCC)
TNM Staging System For Prostate Cancer (8th ed., 2017)
***Table 1.* Definitions for T, N, M**

Clinical T (cT)

T	Primary Tumor
TX	Primary tumor cannot be assessed
T0	No evidence of primary tumor
T1	Clinically inapparent tumor that is not palpable
T1a	Tumor incidental histologic finding in 5% or less of tissue resected
T1b	Tumor incidental histologic finding in more than 5% of tissue resected
T1c	Tumor identified by needle biopsy found in one or both sides, but not palpable
T2	Tumor is palpable and confined within prostate
T2a	Tumor involves one-half of one side or less
T2b	Tumor involves more than one-half of one side but not both sides
T2c	Tumor involves both sides
T3	Extraprostatic tumor that is not fixed or does not invade adjacent structures
T3a	Extraprostatic extension (unilateral or bilateral)
T3b	Tumor invades seminal vesicle(s)
T4	Tumor is fixed or invades adjacent structures other than seminal vesicles such as external sphincter, rectum, bladder, levator muscles, and/or pelvic wall.

Pathological T (pT)

T	Primary Tumor
T2	Organ confined
T3	Extraprostatic extension
T3a	Extraprostatic extension (unilateral or bilateral) or microscopic invasion of the bladder neck
T3b	Tumor invades seminal vesicle(s)
T4	Tumor is fixed or invades adjacent structures other than seminal vesicles such as external sphincter, rectum, bladder, levator muscles, and/or pelvic wall

*Note: There is no pathologic T1 classification.
**Note: Positive surgical margin should be indicated by an R1 descriptor, indicating residual microscopic disease.

N	Regional Lymph Nodes
NX	Regional lymph nodes cannot be assessed
N0	No positive regional nodes
N1	Metastases in regional node(s)

M	Distant Metastasis
M0	No distant metastasis
M1	Distant metastasis
M1a	Non-regional lymph node(s)
M1b	Bone(s)
M1c	Other site(s) with or without bone disease

*Note: When more than one site of metastasis is present, the most advanced category is used. M1c is most advanced.

ST-1

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TWO Staging Systems in One

Clinical T (cT)

T	Primary Tumor
TX	Primary tumor cannot be assessed
T0	No evidence of primary tumor
T1	Clinically inapparent tumor that is not palpable
T1a	Tumor incidental histologic finding in 5% or less of tissue resected
T1b	Tumor incidental histologic finding in more than 5% of tissue resected
T1c	Tumor identified by needle biopsy found in one or both sides, but not palpable
T2	Tumor is palpable and confined within prostate
T2a	Tumor involves one-half of one side or less
T2b	Tumor involves more than one-half of one side but not both sides
T2c	Tumor involves both sides
T3	Extraprostatic tumor that is not fixed or does not invade adjacent structures
T3a	Extraprostatic extension (unilateral or bilateral)
T3b	Tumor invades seminal vesicle(s)
T4	Tumor is fixed or invades adjacent structures other than seminal vesicles such as external sphincter, rectum, bladder, levator muscles, and/or pelvic wall.

Pathological T (pT)

T	Primary Tumor
T2	Organ confined
T3	Extraprostatic extension
T3a	Extraprostatic extension (unilateral or bilateral) or microscopic invasion of the bladder neck
T3b	Tumor invades seminal vesicle(s)
T4	Tumor is fixed or invades adjacent structures other than seminal vesicles such as external sphincter, rectum, bladder, levator muscles, and/or pelvic wall

*Note: There is no pathologic T1 classification.
**Note: Positive surgical margin should be indicated by an R1 descriptor, indicating residual microscopic disease.

N	Regional Lymph Nodes
NX	Regional lymph nodes cannot be assessed
N0	No positive regional nodes
N1	Metastases in regional node(s)

M	Distant Metastasis
M0	No distant metastasis
M1	Distant metastasis
M1a	Non-regional lymph node(s)
M1b	Bone(s)
M1c	Other site(s) with or without bone disease

*Note: When more than one site of metastasis is present, the most advanced category is used. M1c is most advanced.

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Prostatectomy Procedures

50 **Radical prostatectomy, NOS; total prostatectomy, NOS**
Excised prostate, prostatic capsule, ejaculatory ducts, seminal vesicle(s) and may include a narrow cuff of bladder neck.

70 **Prostatectomy WITH resection in continuity with other organs; pelvic exenteration**
Surgeries coded 70 are any prostatectomy WITH resection in continuity with any other organs. The other organs may be partially or totally removed. Procedures may include, but are not limited to, cystoprostatectomy, radical cystectomy, and prostatectomy.
[*NOTE:* In continuity with or "en bloc" means that all of the tissues were removed during the same procedure, but not necessarily in a single specimen] *Da Vinci* prostatectomy would be coded as any other prostatectomy depending on the extent of the procedure codes 50 -80 per FORDS.

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NOT A PROSTECTOMY

00 None; **no surgery** of primary site; **autopsy** ONLY

18 Local tumor destruction or excision, NOS

19 Transurethral resection (TURP), NOS
Unknown whether a specimen was sent to pathology for surgical events coded 18 or 19

10 **Local** tumor **destruction**, NOS
14 Cryoprostatectomy (**Cryoablation**)
15 Laser ablation
16 Hyperthermia
17 Other method of local tumor destruction
No specimen sent to **pathology** from surgical events 10-17
[***NOTE:*** Code Transurethral Microwave Thermotherapy (TUMT) as 16
Code High Intensity Focused Ultrasonography (HIFU) as 17
Code Transurethral Needle Ablation (TUNA) as 17]

20 **Local** tumor excision, NOS
21 Transurethral resection (**TURP**), NOS
22 TURP cancer is incidental finding during surgery for benign disease
23 TURP patient has suspected/known cancer
Any combination of 20-23WITH
24 Cryosurgery
25 Laser
26 Hyperthermia
[***NOTE:*** Codes 24 to 26 above combine 20 Local tumor excision, NOS, 21 TURP, NOS, 22 TURP incidental or 23 TURP suspected/known cancer with 24 Cryosurgery, 25 Laser or 26 Hyperthermia]
Specimen sent to **pathology from** surgical events 20-26

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NOT A PROSTECTOMY

30 **Subtotal, segmental, or simple prostatectomy**, which may leave all or part of the capsule intact

80 Prostatectomy, NOS
Specimen sent to pathology from surgical events 20–80.
90 Surgery, NOS
99 Unknown if surgery performed; death certificate ONLY

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TWO Staging Systems in One

Table 2. AJCC Prognostic Groups*

Group	T	N	M	PSA (ng/mL)	Grade Group
Stage I	cT1a-c	N0	M0	PSA <10	1
	cT2a	N0	M0	PSA <10	1
	pT2	N0	M0	PSA <10	1
Stage IIA	cT1a-c	N0	M0	PSA ≥10 <20	1
	cT2a	N0	M0	PSA ≥10 <20	1
	pT2	N0	M0	PSA ≥10 <20	1
	cT2b	N0	M0	PSA <20	1
	cT2c	N0	M0	PSA <20	1
Stage IIB	T1-2	N0	M0	PSA <20	2
Stage IIC	T1-2	N0	M0	PSA <20	3
	T1-2	N0	M0	PSA <20	4
Stage IIIA	T1-2	N0	M0	PSA ≥20	1-4
Stage IIIB	T3-4	N0	M0	Any PSA	1-4
Stage IIIC	Any T	N0	M0	Any PSA	5
Stage IVA	Any T	N1	M0	Any PSA	Any
Stage IVB	Any T	Any N	M1	Any PSA	Any

*Note: When either PSA or Grade Group is not available, grouping should be determined by T category and/or either PSA or Grade Group as available.

Gleason System has been compressed into "Grade Groups" used in AJCC Stage

Grade Group	Gleason Score	Gleason Pattern
1	≤6	≤3+3
2	7	3+4
3	7	4+3
4	8	4+4, 3+5, 5+3
5	9 or 10	4+5, 5+4, 5+5

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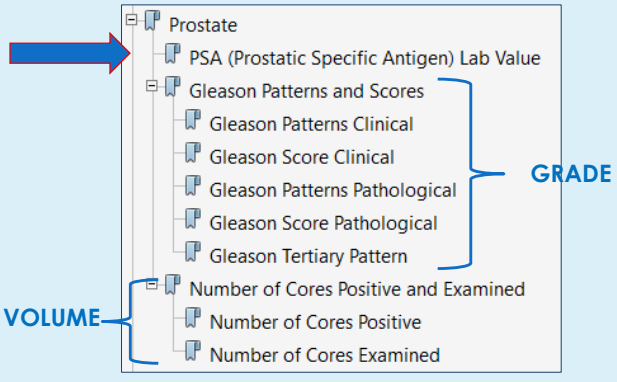
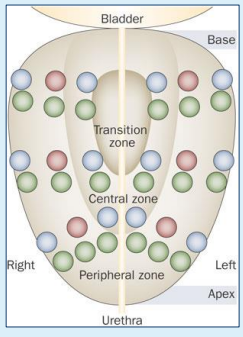
AJCC Site-Specific Data Items





AJCC Cancer Staging Manual, 8th ed. and SSDI Manual, 2018

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FCDS Site-Specific Data Items

FCDS Required	Item Number	Item Name	Start
C	3816	Brain Molecular Markers	2018
C	3817	Breslow Tumor Thickness	2018
C	3827	Estrogen Receptor Summary	2018
C	3835	Fibrosis Score	2018
C	3843	Grade Clinical	2018
C	3844	Grade Pathological	2018
C	3845	Grade Post Therapy	2018
C	3855	HER2 Overall Summary	2018
C	3890	Microsatellite Instability (MSI)	2018
C	3915	Progesterone Receptor Summary	2018
		PSA (Prostatic Specific Antigen) Lab Value	2018
C	3926	Schema Discriminator 1	2018
C	3927	Schema Discriminator 2	2018
C	3932	LDH Pretreatment Lab Value	2018

2018 FCDS DAM and 2018-2020 NPCR Reporting Requirements

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Treatment - Prostate

- Watchful Waiting – Active Surveillance
- High Intensity Focused Ultrasound – ultrasound ablation – early stage
- Surgery – radical prostatectomy with/out lymphadenectomy
- Radiation Therapy
  - Brachytherapy
  - Conformal Radiation Therapy
  - Intensity Modulated Radiation Therapy
  - Proton Beam Radiation
- Hormone Therapy
  - 5-alpha reductase inhibitors – supplement active surveillance or PSA rise
    - Finasteride (Proscar)
    - Dutasteride (Avodart)
  - Abiraterone (Zytiga)
  - Enzalutamide (Xtandi)
- Chemotherapy – docetaxel and cabazitaxel – advanced disease
- Vaccine Therapy for Prevention
- Immune Checkpoint Inhibitors combined with Vaccine Therapy
- RFA (Radiofrequency ablation) to help control pain from bone mets

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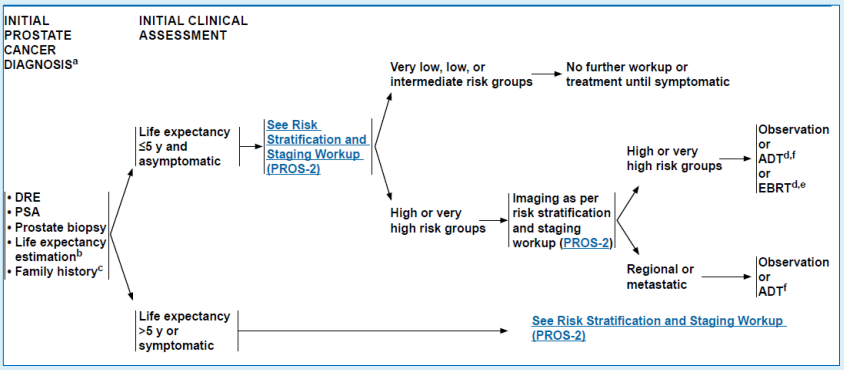
Treatment - Prostate



Treatment - Prostate

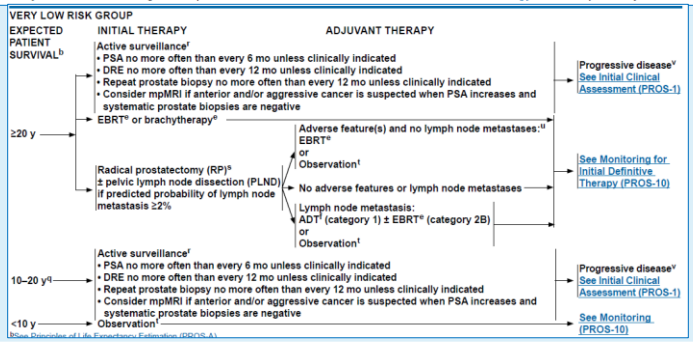
RISK STRATIFICATION AND STAGING WORKUP

Risk group	Clinical/pathologic features	Imaging[i,j]	Molecular testing of tumor	Germline testing	Initial therapy[p]
Very low[g]	• T1c AND • Gleason score ≤6/grade group 1 AND • PSA <10 ng/mL AND • Fewer than 3 prostate biopsy fragments/cores positive, ≤50% cancer in each fragment/core AND • PSA density <0.15 ng/mL/g	Not indicated	Not indicated	Consider if strong family history[o]	See PROS-4
Low[g]	• T1-T2a AND • Gleason score ≤6/grade group 1 AND • PSA <10 ng/mL	Not indicated	Consider if life expectancy ≥10y[j]	Consider if strong family history[o]	See PROS-5
Favorable intermediate[g]	• T2b-T2c OR • Gleason score 3+4=7/grade group 2 OR • PSA 10–20 ng/mL AND • Percentage of positive biopsy cores <50%	• Bone imaging[k]: not recommended for staging • Pelvic ± abdominal imaging: recommended if nomogram predicts >10% probability of pelvic lymph node involvement	Consider if life expectancy ≥10y[j]	Consider if strong family history[o]	See PROS-6
Unfavorable intermediate[g]	• T2b-T2c OR • Gleason score 3+4=7/grade group 2 or Gleason score 4+3=7/grade group 3 OR • PSA 10–20 ng/mL	• Bone imaging[k]: recommended if T2 and PSA >10 ng/mL • Pelvic ± abdominal imaging: recommended if nomogram predicts >10% probability of pelvic lymph node involvement	Not routinely recommended	Consider if strong family history[o]	See PROS-7
High	• T3a OR • Gleason score 8/grade group 4 or Gleason score 4+5=9/grade group 5 OR • PSA >20 ng/mL	• Bone imaging[k]: recommended • Pelvic ± abdominal imaging: recommended if nomogram predicts >10% probability of pelvic lymph node involvement	Not routinely recommended	Consider[o]	See PROS-8[p]
Very high	• T3b-T4 OR • Primary Gleason pattern 5 OR • >4 cores with Gleason score 8–10/ grade group 4 or 5	• Bone imaging[k]: recommended • Pelvic ± abdominal imaging: recommended if nomogram predicts >10% probability of pelvic lymph node involvement	Not routinely recommended	Consider[o]	See PROS-8[p]
Regional	Any T, N1, M0	Already performed	Consider tumor testing for homologous recombination gene mutations and for microsatellite instability (MSI) or mismatch repair deficiency (dMMR)[m,n]	Consider[o]	See PROS-9
Metastatic	Any T, Any N, M1	Already performed	Consider tumor testing for homologous recombination gene mutations and for MSI or dMMR[m,n]	Consider[o]	See PROS-13

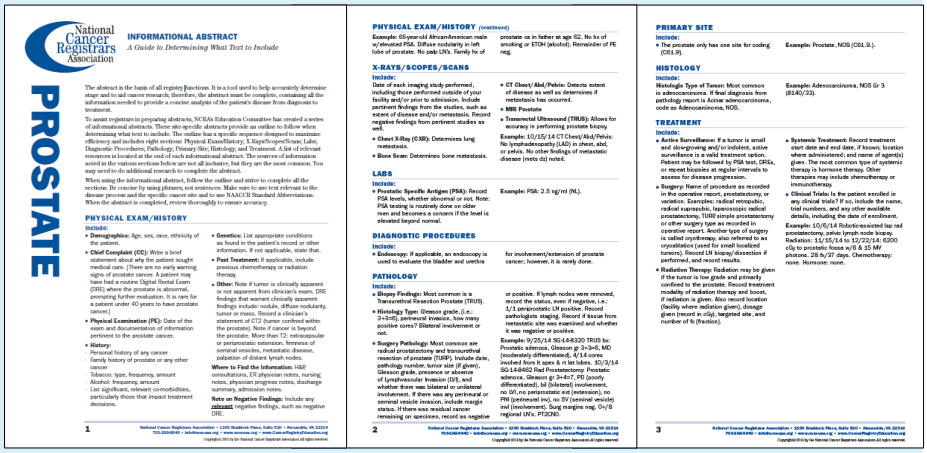
Treatment - Prostate

PRINCIPLES OF LIFE EXPECTANCY ESTIMATION

- Life expectancy estimation is critical to informed decision-making in prostate cancer early detection and treatment.
- Estimation of life expectancy is possible for groups of men but challenging for individuals.
- Life expectancy can be estimated using the Social Security Administration tables (www.ssa.gov/OACT/STATS/table4c6.html) or the WHO's Life Tables by country (http://apps.who.int/gho/data/view.main.60000?lang=en).
- Life expectancy can then be adjusted using the clinician's assessment of overall health as follows:
  - Best quartile of health - add 50%
  - Worst quartile of health - subtract 50%
  - Middle two quartiles of health - no adjustment
- Example of 5-year increments of age are reproduced in the NCCN Guidelines for Older Adult Oncology for life expectancy estimation.



Text Documentation - Prostate



National Cancer Registrars Association

INFORMATIONAL ABSTRACT

A Guide to Determining What Text to Include

PROSTATE

The abstract is the basis of all registry functions. It is a tool used to help accurately determine stage and to aid cancer research; therefore, the abstract must be complete, containing all the information needed to provide a concise analysis of the patient's disease from diagnosis to treatment.

To assist registrars in preparing abstracts, NCRA's Education Committee has created a series of informational abstracts. These site-specific abstracts provide an outline to follow when determining what text to include. The outline has a specific sequence designed to maximize efficiency and includes eight sections: Physical Exam/History; X-Rays/Scopes/Scans; Labs; Diagnostic Procedures; Pathology; Primary Site; Histology; and Treatment. A list of relevant resources is located at the end of each informational abstract. The sources of information noted in the various sections below are not all-inclusive, but they are the most common. You may need to do additional research to complete the abstract.

When using the informational abstract, follow the outline and strive to complete all the sections. Be concise by using phrases, not sentences. Make sure to use text relevant to the disease process and the specific cancer site and to use NAACCR Standard Abbreviations. When the abstract is completed, review thoroughly to ensure accuracy.

PHYSICAL EXAM/HISTORY

Include:

- **Demographics:** Age, sex, race, ethnicity of the patient.
- **Chief Complaint (CC):** Write a brief statement about why the patient sought medical care. [There are no early warning signs of prostate cancer. A patient may have had a routine Digital Rectal Exam (DRE) where the prostate is abnormal, prompting further evaluation. It is rare for a patient under 40 years to have prostate cancer.]
- **Physical Examination (PE):** Date of the exam and documentation of information pertinent to the prostate exam.
- **History:**
  - Personal history of any cancer
  - Family history of prostate or any other cancer
  - Tobacco: type, frequency, amount
  - Alcohol: frequency, amount
  - List significant, relevant comorbidities, particularly those that impact treatment decisions.
- **Genetics:** List appropriate conditions as found in the patient's record or other information. If not applicable, state that.
- **Past Treatment:** If applicable, include previous chemotherapy or radiation therapy.
- **Other:** Note if tumor is clinically apparent or not apparent from clinician's exam. DRE findings that warrant clinically apparent findings include: nodule, diffuse nodularity, tumor or mass. Record a clinician's statement of CT2 (tumor confined within the prostate). Note if cancer is beyond the prostate. More than T2: extracapsular or perineuralinvasion, firmness of seminal vesicles, metastatic disease, palpation of distant lymph nodes.

Where to Find the Information: H&P consultations, ER physician notes, nursing notes, physician progress notes, discharge summary, admission notes.

Note on Negative Findings: Include any **relevant** negative findings, such as negative DRE.

1

PHYSICAL EXAM/HISTORY (continued)

Example: 65-year-old African-American male w/ elevated PSA. Diffuse nodularity in left lobe of prostate. No palp LN's. Family hx of prostate ca in father at age 62. No hx of smoking or ETOH (alcohol). Remainder of PE neg.

X-RAYS/SCOPES/SCANS

Include:

Date of each imaging study performed, including those performed outside of your facility and/or prior to admission. Include pertinent findings from the studies, such as extent of disease and/or metastasis. Record negative findings from pertinent studies as well.

- **Chest X-Ray (CXR):** Determines lung metastasis.
- **Bone Scan:** Determines bone metastasis.
- **CT Chest/Abd/Pelvis:** Detects extent of disease as well as determines if metastasis has occurred.
- **MRI Prostate**
- **Transrectal Ultrasound (TRUS):** Allows for accuracy in performing prostate biopsy.

Example: 10/15/14 CT Chest/Abd/Pelvis: No lymphadenopathy (LAD) in chest, abd, or pelvis. No other findings of metastatic disease (mets dz) noted.

LABS

Include:

- **Prostatic Specific Antigen (PSA):** Record PSA levels, whether abnormal or not. Note: PSA testing is routinely done on older men and becomes a concern if the level is elevated beyond normal.

Example: PSA: 2.5 ng/ml (N).

DIAGNOSTIC PROCEDURES

Include:

- **Endoscopy:** If applicable, an endoscopy is used to evaluate the bladder and urethra for involvement/extension of prostate cancer; however, it is rarely done.

PATHOLOGY

Include:

- **Biopsy Findings:** Most common is a Transurethral Resection Prostate (TRUS).
- **Histology Type:** Gleason grade, (i.e.: 3+3=6), perineural invasion, how many positive cores? Bilateral involvement or not.
- **Surgery Pathology:** Most common are radical prostatectomy and transurethral resection of prostate (TURP). Include date, pathology number, tumor size (if given), Gleason grade, presence or absence of Lymphovascular Invasion (LVI), and whether there was bilateral or unilateral involvement. If there was any perineural or seminal vesicle invasion, include margin status. If there was residual cancer remaining on specimen, record as negative or positive. If lymph nodes were removed, record the status, even if negative, i.e.: 1/1 periprostatic LN positive. Record pathologists staging. Record if tissue from metastatic site was examined and whether it was negative or positive.

Example: 9/25/14 SG-14-8320 TRUS bx: Prostatic adenoca, Gleason gr 3+3=6, MD (moderately differentiated), 4/14 cores involved from lt apex & rt lat lobes. 10/3/14 SG-14-8462 Rad Prostatectomy: Prostatic adenoca., Gleason gr 3+4=7, PD (poorly differentiated); bil (bilateral) involvement, no GVI, no perineoplastic ext (extension), no PNI (perineural inv), no SV (seminal vesicle) invl (involvement). Surg margins neg. 0+/8 regional LN's. PT2CN0.

2

PRIMARY SITE

Include:

- The prostate only has one site for coding (C61.9).

Example: Prostate , NOS (C61.9).

HISTOLOGY

Include:

Histologic Type of Tumor: Most common is adenocarcinoma. If final diagnosis from pathology report is Acinar adenocarcinoma, code as Adenocarcinoma, NOS.

Example: Adenocarcinoma, NOS Gr 3 (8140/33).

TREATMENT

Include:

- **Active Surveillance:** If a tumor is small and slow-growing and/or indolent, active surveillance is a valid treatment option. Patient may be followed by PSA test, DREs, or repeat biopsies at regular intervals to assess for disease progression.
- **Surgery:** Name of procedure as recorded in the operative report, prostatectomy, or variation. Examples: radical retropubic, radical suprapubic, laparoscopic radical prostatectomy, TURP, simple prostatectomy or other surgery type as recorded in operative report. Another type of surgery is called cryotherapy, also referred to as cryoablation (used for small localized tumors). Record LN biopsy/dissection if performed, and record results.
- **Radiation Therapy:** Radiation may be given if the tumor is low grade and primarily confined to the prostate. Record treatment modality of radiation therapy and boost, if radiation is given. Also record location (facility where radiation given), dosage given (record in cGy), targeted site , and number of fx (fraction).
- **Systemic Treatment:** Record treatment start date and end date, if known; location where administered; and name of agent(s) given. The most common type of systemic therapy is hormone therapy. Other therapies may include chemotherapy or immunotherapy.
- **Clinical Trials:** Is the patient enrolled in any clinical trials? If so, include the name, trial numbers, and any other available details, including the date of enrollment.

Example: 10/6/14 Robotic-assisted lap rad prostatectomy, pelvic lymph node biopsy. Radiation: 11/15/14 to 12/22/14: 6200 cGy to prostatic fossa w/6 & 15 MV photons. 28 fx/37 days. Chemotherapy: none. Hormone: none.

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Source: NCRA Informational Abstracts – Improving Text

Staging Practice

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References

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  - Kidney
  - Renal Pelvis
  - Bladder
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- American Cancer Society – About Cancer Series - https://www.cancer.org/cancer.html
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- NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines) – https://nccn.org/
  - Kidney Cancer – Version 2.2019 – September 17, 2018
  - Bladder Cancer - Version 5.2018 – July 3, 2018
  - Prostate Cancer – Version 4.2018 – August 15, 2018
- College of American Pathologists – https://www.cap.org/protocols-and-guidelines/cancer-reporting-tools/cancer-protocol-templates
  - Kidney – Invasive Carcinoma of Renal Tubular Origin – June 2017
  - Urinary Bladder – June 2017
  - Prostate Gland – June 2017
  - Protocols for Biomarkers - NONE
- NAACCR Webinar: Collecting Cancer Data Prostate – 10/5/2017 – http://www.naaccr.org
- World Cancer Research Fund/American Institute for Cancer Research – Continuous Update Project – Diet, nutrition, physical activity and bladder cancer, Revised 2018

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Questions

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