Collecting Cancer Data: Prostate

NAACCR 2010-2011 Webinar Series
May 5, 2011

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Q&A

Please submit all questions concerning webinar content through the Q&A panel

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Overview

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Prostate Cancer

- Prostate cancer is the most common non-skin cancer in men in the U.S. and Canada
- 2010 prostate cancer estimates
  - New cases
    - 217,730 in the U.S.
    - 24,600 in Canada
  - Deaths
    - 32,050 in the U.S.
    - 4,300 in Canada

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Stats from ACS Facts & Figures and Canadian Cancer Society website

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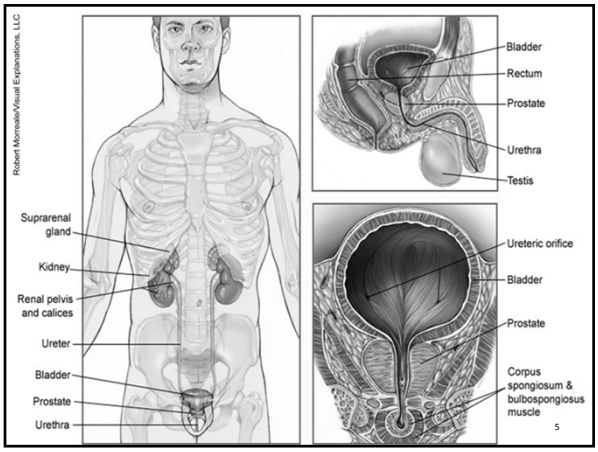

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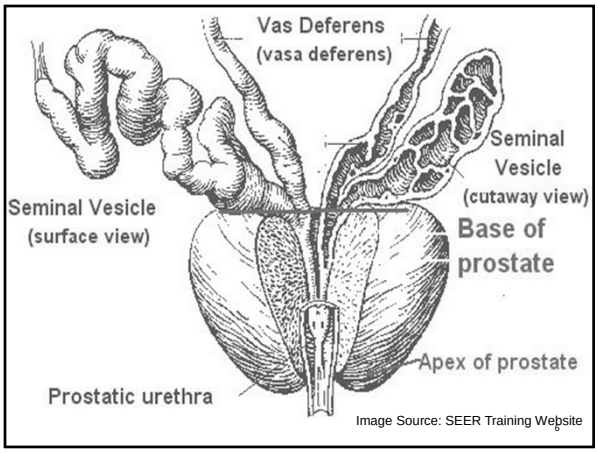

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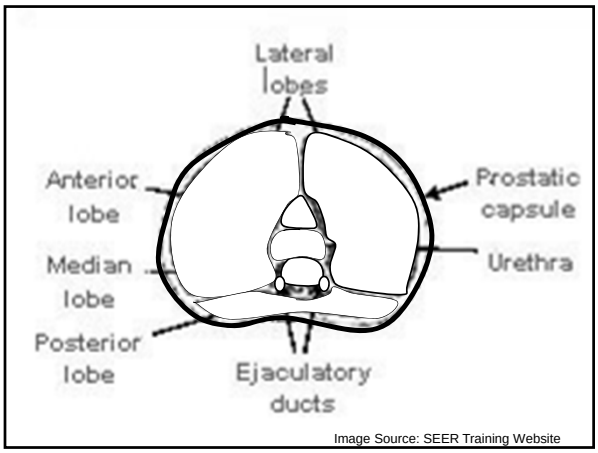

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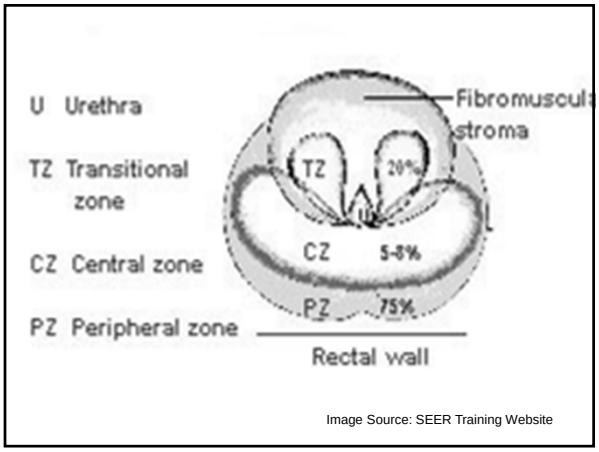

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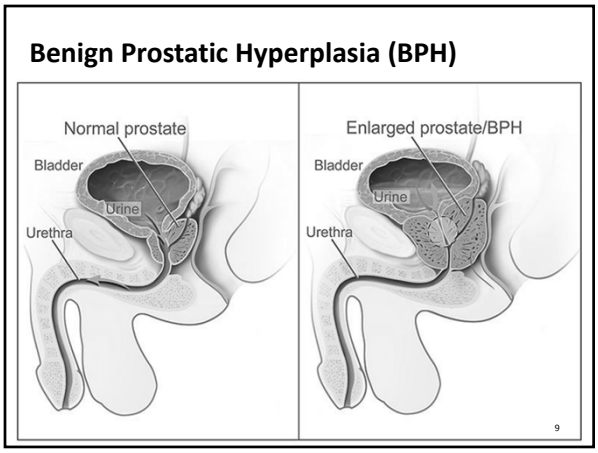

Histology

- Acinar adenocarcinoma of the prostate
  - Makes up 95% of all prostate cancers
  - Refers to the fact that the adenocarcinoma originates in the prostatic acini
  - Is not a specific histologic type
  - Is assigned ICD-O-3 histology code 8140

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Multiple Primary and Histology Coding Rules

- 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).*
  - *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.*

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Multiple Primary and Histology Coding Rules

- Rule H10 (single tumor) H20 (multiple tumors)
  - Code 8140 (adenocarcinoma, NOS) for prostate primaries when the diagnosis is acinar (adeno)carcinoma.

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Coding Grade for Prostate

- Gleason's grading system
  - Is based on 5 histologic components (patterns)
  - Calculates a score by summing the primary and secondary patterns
  - May refer to the 3rd most common pattern as a tertiary grade

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Gleason's Pattern

1. Small, uniform glands
2. More stroma between glands
3. Distinctly infiltrative margins
4. Irregular masses of neoplastic glands
5. Only occasional gland formation

Well differentiated

Moderately differentiated

Poorly diff./ Anaplastic

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Coding Prostate Cancer Grade

Code	Gleason's Score	Terminology	Histologic Grade
1	2, 3, 4	Well differentiated	I
2	5, 6	Moderately differentiated	II
3	7, 8, 9, 10	Poorly differentiated	III

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Coding Issues

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Question

- How is multiplicity counter to be coded for a clinically inapparent prostate cancer for which sextant needle biopsy cores on left and right sides are positive for adenocarcinoma?

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Answer

- Code the number of tumors present if known. If the only information available is "diffuse," or "multifocal," assign code 99.
  - Do not assume there are multiple tumors just because there are multiple biopsies.
- When there is no information about the number of tumors, code Multiplicity Counter to 99 and Type of Multiple Tumors to 99.

SEER SINQ 20071096

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Prostate Cancer Work-Up

- Prostatic specific antigen (PSA) screening
  - Not diagnostic without other work-up
- Free PSA
  - The ratio of how much PSA circulates free compared to the total PSA level
  - Do not code free PSA
- PSA Velocity
  - Rate of rise in the PSA level
- PSA Doubling Time

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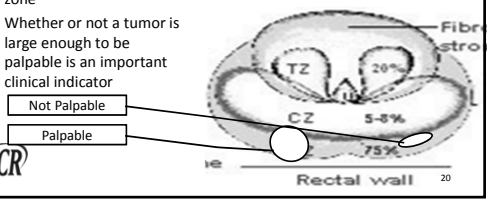
Prostate Cancer Work-Up

- History and physical examination
  - Digital rectal exam (DRE)
    - Most prostate cancers occur in the peripheral zone
    - Whether or not a tumor is large enough to be palpable is an important clinical indicator



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Prostate Cancer Work-up

- Imaging studies
  - Transrectal ultrasound (TRUS)
  - CT scans
    - Abdomen/pelvis
    - Bone
    - Liver/spleen
    - Brain
  - Chest x-ray

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Prostate Cancer Work-up

- Endoscopy
  - Cystoscopy, proctosigmoidoscopy, laparoscopy
- Transrectal needle biopsy
- Transperineal needle biopsy
- Transurethral core biopsy

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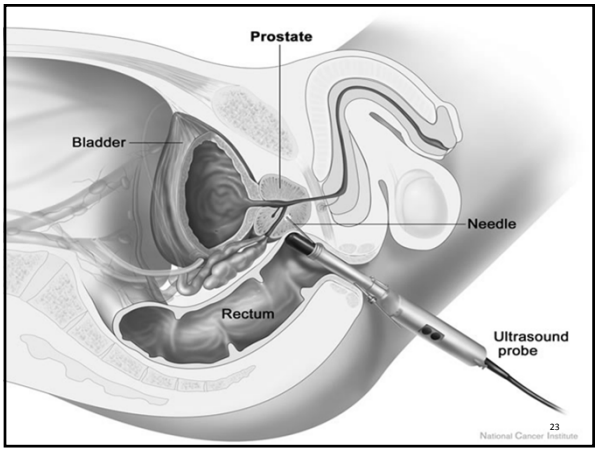

Nomograms and Predictive Models

- Assessment of risk
  - How likely is a cancer to be confined to the lymph nodes?
  - How likely is the cancer to progress after treatment?
- Predictions based on:
  - Clinical stage
  - Biopsy Gleason grade
  - Preoperative PSA

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Partin Tables

The "Partin tables" were originally developed by urologists Alan W. Partin, M.D., Ph.D., and Patrick C. Walsh, M.D. based on accumulated data from hundreds of patients who had been treated for prostate cancer.

Based upon PSA, Gleason Score, and Clinical Staging, a probability is calculated for each of the following four: **Organ Confined Disease**, **Extraprostatic Extension**, **Seminal Vesicle Invasion**, and **Lymph Node Invasion**

Select:

PSA: 4.1 - 6.0 ng/ml **Gleason Score:** 5-6

Clinical Stage: T1c

Calculate Clear

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Partin Table

Partin Table Lookup

Organ confined: 83 (81-85)
Extraprostatic extension: 16 (14-17)
Seminal Vesicle Invasion: 1 (1-1)
Lymph Node Invasion: 0 (0-0)

All numbers represent predictive probabilities with a 95 percent confidence interval; ellipses indicate lack of sufficient data to calculate probability.

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Life Expectancy

- Social Security Life Tables

	Male		
Exact age	Death probability [a]	Number of lives [b]	Life expectancy
65	0.017161	79,354	17.00
66	0.018610	77,992	16.28
67	0.020216	76,540	15.58
68	0.021992	74,993	14.89
69	0.023966	73,344	14.22

NAACCR http://www.ssa.gov/OACT/STATS/table4c6.html

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Categories

- Low risk of recurrence
- Intermediate risk of recurrence
- High risk of recurrence
- Very high risk
- Metastasis

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Treatment

- Active surveillance
- Surgery
- Radiation therapy
- Chemotherapy
- Hormone therapy

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Active Surveillance

- Active surveillance involves actively monitoring the course of disease with the expectation to intervene with curative intent if the disease progresses.
  - PSA testing every 3-6 months
  - DRE as often as every 6-12 months
  - Repeat biopsies every 6-18 months

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RX Summ-Treatment Status

Code	Definition
0	No treatment given
1	Treatment given
2	Active surveillance
9	Unknown

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Surgery

- Transurethral resection of the prostate (TURP)
- Pelvic lymphadenectomy
- Radical prostatectomy
- Cryosurgery

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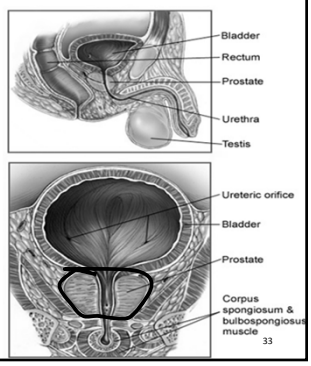
50 Radical Prostatectomy

- Excised prostate, prostatic capsule, ejaculatory ducts, seminal vesicle(s) and may include a narrow cuff of bladder neck



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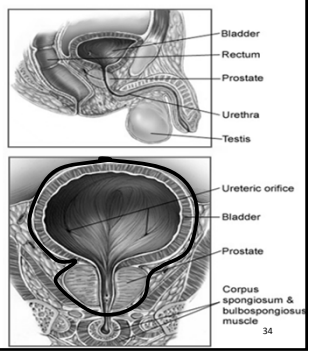
70 Prostatectomy WITH resection in continuity with other organs

- The other organs may be partially or totally removed
- Procedures may include, but are not limited to cystoprostatectomy or radical cystectomy



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Radiation Therapy

- External Beam Radiation
  - Three-dimensional conformal radiation therapy (3D CRT)
  - Intensity Modulated Radiation Therapy (IMRT)
  - Image-Guided Radiation Therapy (IGRT)

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Radiation Therapy

- Brachytherapy
  - Permanent Low Dose Radiation Implants (LDR) Seed Implants (iodine-125 or palladium-103)
  - Temporary High Dose Radiation (HDR) Brachytherapy (iridium-192 or cesium-137)

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Coding Radiation Therapy

- If IMRT or 3D CRT are administered code Regional Treatment Modality to 31 or 32
  - 18mv delivered in 25 sessions using IGRT
    - Code to 31 (IMRT) even though a specific energy was given

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Coding Radiation Therapy

- If external beam radiation to the pelvis and brachytherapy are performed, code beam radiation as Regional Treatment Modality and brachytherapy as Boost Treatment Modality

  Example:
  - 4500 cGy delivered to the pelvis followed by brachytherapy
    - Code beam radiation as Regional Treatment Modality and seed implants as Boost

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Chemotherapy

- May be used for advanced stage or metastatic disease
- May also be used for disease that no longer responds to androgen deprivation therapy
  - Docetaxel (taxotere)

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Hormone Therapy

- Hormone therapy removes hormones or blocks their action and stops cancer cells from growing
  - Luteinizing hormone-releasing hormone
  - Antiandrogens
- Code orchiectomy as *Hematologic Transplant and Endocrine Procedure not as Hormone Therapy*

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Questions?

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Collaborative Stage Data Collection System

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CS Extension – Clinical Extension: Prostate

- Both CS Extension – Clinical Extension and SSF3 CS Extension – Pathologic Extension must be coded whether or not prostatectomy was performed
  - Record information from prostatectomy in SSF3
- Mapping values for TNM, SS77, and SS2000 are assigned based on values in CS Extension – Clinical Extension, CS Tumor Size/Ext Eval, and SSF3 CS Extension – Pathologic Extension
- AJCC does not recognize in situ carcinoma of prostate
  - Assignment of code 000 (in situ) maps to TX

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CS Extension – Clinical Extension: Prostate

- Clinically inapparent tumor
  - Is not palpable or visible by imaging
  - Includes physician assignment of cT1
  - Assigned codes 100 – 150
    - Codes 100 – 140
      - Incidental histologic finding
    - Code 150
      - Tumor identified by needle biopsy

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CS Extension – Clinical Extension: Prostate

- Example:
  - Physical exam: Patient has prostatic hypertrophy. Digital rectal exam (DRE) performed; no nodules identified in prostate. PSA is elevated at 4.8.
  - Transurethral resection of prostate (TURP): Gleason 3 + 4 (7) adenocarcinoma of the prostate in 10% of resected tissue.

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CS Extension – Clinical Extension: Prostate

- What is the code for CS Extension – Clinical Extension?
  - 100: Incidental histologic finding, number of foci or percent of involved tissue not specified
  - 130: Incidental histologic finding in 5 percent or less of tissue resected
  - 140:Incidental histologic finding in more than 5 percent of tissue resected
  - 150: Tumor identified by needle biopsy

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CS Extension – Clinical Extension: Prostate

- Clinically apparent tumor
  - Is palpable or visible by imaging
    - Clinician documentation of tumor, mass, or nodule of prostate
  - Includes physician assignment of cT2
  - Assigned codes 200 – 240
    - Use physical exam or imaging information to decide among codes 200-240
    - Do not use biopsy information

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CS Extension – Clinical Extension: Prostate

- Example:
  - Physical exam: DRE performed and identified prostate nodule involving less than half of right lobe. No nodules in left prostate lobe.
  - Sextant biopsy: Gleason 3 + 4 (7) adenocarcinoma of the prostate in 60% of tissue from right lobe and in less than 10% of tissue from left lobe.

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CS Extension – Clinical Extension: Prostate

- What is the code for CS Extension – Clinical Extension?
  - 200: Involvement in one lobe/side, NOS
  - 210: Involves one half of one lobe/side or less
  - 220: Involves more than one half of one lobe/side, but not both lobes/sides
  - 230: Involves both lobes/sides
  - 240: Clinically apparent tumor confined to prostate, NOS

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CS Extension – Clinical Extension: Prostate

- Primary tumor extension beyond the prostate
  - Assign codes 410 – 700
  - Code information from biopsy of extraprostatic tissue in CS Extension – Clinical Extension
- Example:
  - DRE: Large prostatic mass extending into rectum
  - Rectal biopsy: Adenocarcinoma of prostatic origin
  - What is the code for CS Extension – Clinical Extension?
    - 500: Rectum

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CS Tumor Size/Ext Eval: Prostate

- Codes are different for this data item for prostate than for other sites
- Eval code reflects
  - How most extensive disease was determined as coded in CS Extension – Clinical Extension or SSF3 CS Extension – Pathologic Extension

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CS Tumor Size/Ext Eval: Prostate

- Does not meet criteria for AJCC pathologic staging
  - No prostatectomy
    - Code 0: Evaluation based on physical examination including DRE, imaging examination, or other non-invasive clinical evidence
      - Assign code 0 if CS Extension – Clinical Extension is code 200-240 without prostatectomy
    - Code 1: Evaluation based on endoscopy, diagnostic biopsy (needle core biopsy or fine needle aspiration biopsy), TURP or other invasive techniques
      - Assign code 1 if CS Extension – Clinical Extension is code 100-150 without prostatectomy

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CS Tumor Size/Ext Eval: Prostate

- Meets criteria for AJCC pathologic staging
  - No prostatectomy
    - Code 2: Positive biopsy of extraprostatic tissue allows assignment to CS Extension Codes 410-700 in CS Extension – Clinical Extension
      - Do not use with CS Extension codes 000-300
    - Code 3: Evidence from autopsy; tumor suspected or diagnosed prior to autopsy

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CS Tumor Size/Ext Eval: Prostate

- Meets criteria for AJCC pathologic staging
  - Prostatectomy performed
    - Code 4: Prostatectomy performed WITHOUT pre-surgical systemic treatment or radiation

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CS Tumor Size/Ext Eval: Prostate

- Prostatectomy performed
  - Does not meet criteria for AJCC y-pathologic (yp) staging
    - Code 5: Prostatectomy performed AFTER neoadjuvant therapy and tumor size/extension based on clinical evidence
  - Meets criteria for AJCC y-pathologic (yp) staging
    - Code 6: Prostatectomy performed AFTER neoadjuvant therapy and tumor size/extension based on pathologic evidence because pathologic evidence at surgery is more extensive than clinical evidence before treatment

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CS Tumor Size/Ext Eval: Prostate

- Meets criteria for autopsy staging
  - Code 8: Evidence from autopsy only; tumor unsuspected or undiagnosed prior to autopsy
- Unknown
  - Code 9: Unknown if prostatectomy done
    Not assessed; cannot be assessed
    Unknown if assessed
    Not documented in patient record

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CS Tumor Size/Ext Eval: Prostate

- Example:
  - DRE is negative and needle core biopsy due to elevated PSA (T1c/CS Ext 150).
- What is the code for CS Tumor Size/Ext Eval?
  - 1

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CS Tumor Size/Ext Eval: Prostate

- Example:
  - DRE indicates a nodule involving most of the left lobe of the prostate. Needle core biopsy shows tumor in both the left and right lobes.
- What is the code for CS Tumor Size/Ext Eval?
  - 0

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CS Tumor Size/Ext Eval: Prostate

- Example:
  - Physical exam: Large prostatic mass extending into rectum
  - Rectal biopsy: Adenocarcinoma of prostatic origin
- What is the code for CS Tumor Size/Ext Eval?
  - 2

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CS Extension – Clinical Extension: Prostate

- Example:
  - Physical exam: DRE performed and identified prostate nodule involving less than half of right lobe. No nodules in left prostate lobe.
  - Sextant biopsy: Gleason 3 + 4 (7) adenocarcinoma of the prostate in 60% of tissue from right lobe and in less than 10% of tissue from left lobe.
  - Radical prostatectomy: Adenocarcinoma, Gleason 3 + 3 (6) of prostate, right and left lobes, and right seminal vesicle
- What is the code for CS Tumor Size/Ext Eval?
  - 4

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CS Lymph Nodes: Prostate

- Code 000: No regional lymph node involvement
- Code 100: Regional nodes, including contralateral or bilateral lymph nodes

  Stated as N1 with no other information on regional lymph nodes
- Code 800: Lymph nodes, NOS
- Code 999: Unknown

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CS Mets at DX: Prostate

- 00: None
- 11: Distant nodes: common iliac
- 12: Distant nodes
- 20: Stated as M1a
- 30: Bone metastasis
- 35: 30 + (11 or 12)
- 38: Stated as M1b
- 40: Distant metastasis other than distant nodes or bone; carcinomatosis
- 50: 40 + (11 or 12)
- 55: 40 + (30 or 35)
- ***58: Stated as M1c***
- 60: Distant metastasis, NOS; stated as M1 NOS
- 99: Unknown

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Prostatic Specific Antigen (PSA)

- PSA
  - Used to monitor disease progression and response to therapy
- SSF1: PSA Lab Value
  - Record highest PSA lab value prior to diagnostic prostate biopsy and treatment to nearest tenth in nanograms/milliliter (ng/ml)
- SSF2: PSA Interpretation
  - Record the clinician's interpretation of highest PSA lab value prior to diagnostic prostate biopsy and treatment

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SSF3: CS Extension – Pathologic Extension

- Record information from first course treatment prostatectomy or autopsy
  - Includes information from simple prostatectomy with negative margins
  - Do NOT record information from biopsy of extraprostatic sites in this field
  - Assign code 970 if prostatectomy is not performed as part of first course treatment

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SSF3: CS Extension – Pathologic Extension

- Record information from first course treatment prostatectomy or autopsy
  - AJCC does not recognize in situ carcinoma of prostate
    - Assignment of code 000 (in situ) maps to TX
  - Assign code for extent of disease when prostate cancer is an incidental finding during prostatectomy for another reason

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SSF4 - SSF6

- SSF4: Prostate Apex Involvement
  - Is not required by any standard setter for cases diagnosed 1/1/2010 forward
  - Assign code 988 for cases diagnosed 1/1/2010 and after
- SSF5: Gleason's Primary Pattern and Secondary Pattern Value
  - Obsolete
- SSF6: Gleason's Score
  - Obsolete

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SSF7 – SSF10
Gleason's Primary and Secondary Patterns and Score

- Gleason's grading for prostate cancer
  - Based on 5 component system
  - Primary pattern is first number
  - Secondary pattern is second number
  - Gleason's score is sum of primary and secondary patterns

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SSF7 – SSF10
Gleason's Primary and Secondary Patterns and Score

- Code Gleason's primary and secondary patterns
  - 1st digit = 0; 2nd digit = primary pattern; 3rd digit = secondary pattern
- Code Gleason's score
  - Three digits, with the Gleason score in the right-most digits and leading zeros

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SSF7 – SSF10
Gleason's Primary and Secondary Patterns and Score

- If one number is given and it is less than or equal to 5, assume it is primary pattern
  - Code number as primary pattern and code secondary pattern as 9
  - Code score as 999
- If only one number is given and it is greater than 5, assume it is score
  - Code primary and secondary patterns as 099
  - Code stated number as score

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SSF7 – SSF10
Gleason's Primary and Secondary Patterns and Score

- If Gleason's grading is stated as total out of 10, assume first number is score
  - Code primary and secondary patterns as 099
  - Code first number as score

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SSF7: Gleason's Primary Pattern and Secondary Pattern Values on Needle Core Biopsy/TURP

- Code Gleason's primary and secondary patterns from needle core biopsy or TURP
- Assign code 998 if no needle biopsy or TURP performed

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SSF7: Gleason's Primary Pattern and Secondary Pattern Values on Needle Core Biopsy/TURP

- If different patterns are documented from multiple biopsies and/or TURP
  - Code patterns provided by pathologist in final summary
  - Code patterns that reflect highest score if there is no final summary
  - Code highest primary pattern then highest secondary pattern if different patterns equal same high score
  - Do not mix patterns from multiple specimens

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SSF8: Gleason's Score on Needle Core Biopsy/TURP

- Code Gleason's score from needle core biopsy or TURP
  - Sum of primary and secondary patterns coded in SSF7
- Assign code 998 if no needle biopsy or TURP performed

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SSF9: Gleason's Primary Pattern and Secondary Pattern Values on Prostatectomy/Autopsy

- Code Gleason's primary and secondary patterns from prostatectomy or autopsy
- Assign code 998 if no prostatectomy or autopsy performed
- Do not code tertiary pattern in this data field

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SSF10: Gleason's Score on Prostatectomy/Autopsy

- Code Gleason's score from prostatectomy or autopsy
  - Sum of primary and secondary patterns coded in SSF9
- Assign code 998 if no prostatectomy or autopsy performed
- Do not code tertiary pattern in this data field

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SSF11: Gleason's Tertiary Pattern Value on Prostatectomy/Autopsy

- Gleason's tertiary pattern
  - Small component of a third more aggressive pattern
  - High tertiary pattern is associated with worse outcome
- Code Gleason's tertiary pattern from prostatectomy or autopsy
  - Do not code tertiary pattern from needle core biopsy or TURP
- Assign code 998 if no prostatectomy or autopsy performed

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SSF12: Number of Cores Positive

- Record the number of prostate core biopsies positive for cancer
- If multiple needle core biopsies are performed
  - Record the number of cores positive for cancer from procedure with highest number of cores positive
  - Do not add positive cores from separate procedures together
- Assign code 998 if no needle core biopsy performed

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SSF13: Number of Cores Examined

- Record the number of prostate core biopsies examined for cancer
- If multiple needle core biopsies are performed
  - Record the number of cores examined from procedure with highest number of cores positive
  - Code from same procedure used to record SSF12
  - Do not add cores examined from separate procedures together
- Assign code 998 if no needle core biopsy performed

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SSF14: Needle Core Biopsy Findings

- Record findings of needle core biopsy
- Record most extensive findings from all biopsy procedures if multiple needle core biopsy procedures are performed
- Assign code 998 if no needle core biopsy performed

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SSF15: Clinical Staging Procedures Performed

- Record procedures used in clinical staging regardless of positive or negative findings
  - Digital rectal exam (DRE)
  - Imaging of the prostate
    - Transrectal ultrasound (TRUS)
    - Endorectal coil magnetic resonance imaging (erMRI)
- Do not include clinical procedures performed after needle core biopsy or surgical procedure of the prostate

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Standard Setters SSF Requirements for Prostate

- Commission on Cancer and NCI/SEER
  - Not currently available for v02.03
  - Required for v02.02
    - SSF1 – SSF3, SSF4 required through 2009, SSF7 – SSF13
- CDC/NPCR for v02.03 as of 3/29/11
  - Required to calculate AJCC stage; required when available
    - SSF1, SSF3, SSF8, SSF10

NAACCR http://www.cancerstaging.org/cstage/manuals/coding0203.html

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Standard Setters SSF Requirements for Prostate

- Canadian Council of Cancer Registries for v02.03 as of 12/15/10
  - Collected in CSv1
    - SSF4 (2010 and forward cases optional)
    - SSF7, SSF9
  - Essential for TNM
    - SSF1, SSF3, SSF8, SSF10
  - Essential for decision making
    - SSF2
  - Collect if in pathology report
    - SSF11 – SSF14
  - Collect if readily available in chart
    - SSF15

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Questions?

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Thank You!

- Best Practices for Developing and Working with Survival Data
  - June 2, 2011

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