The Appropriate Use of PSA Screening and Guidelines

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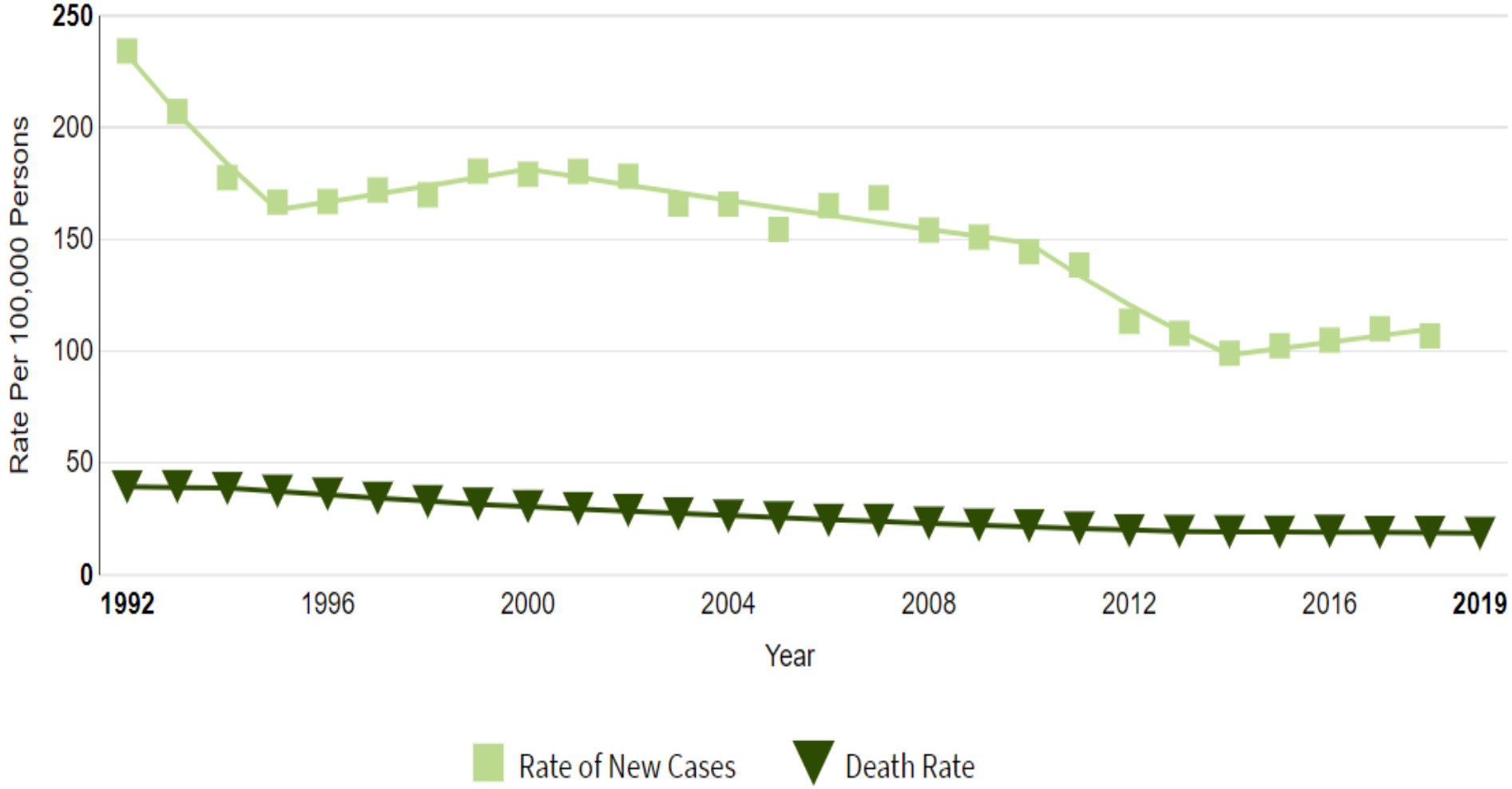
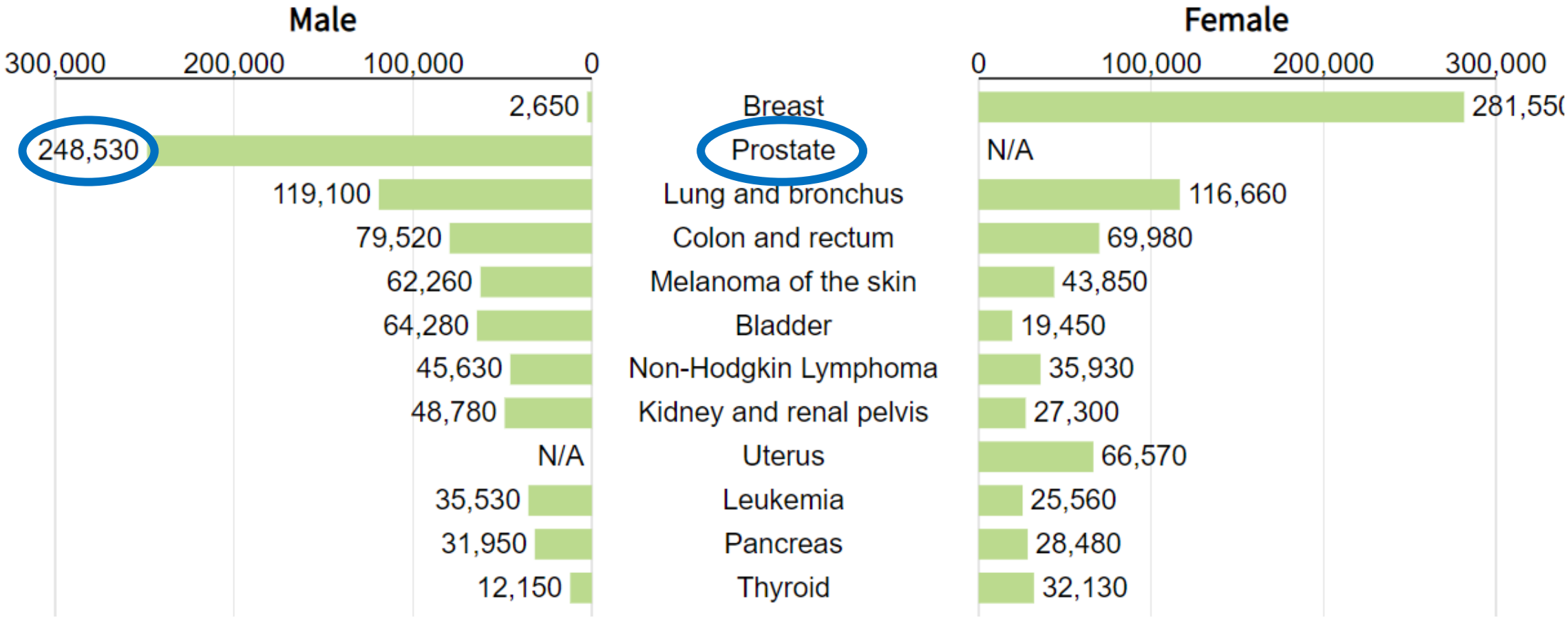
SEER Data

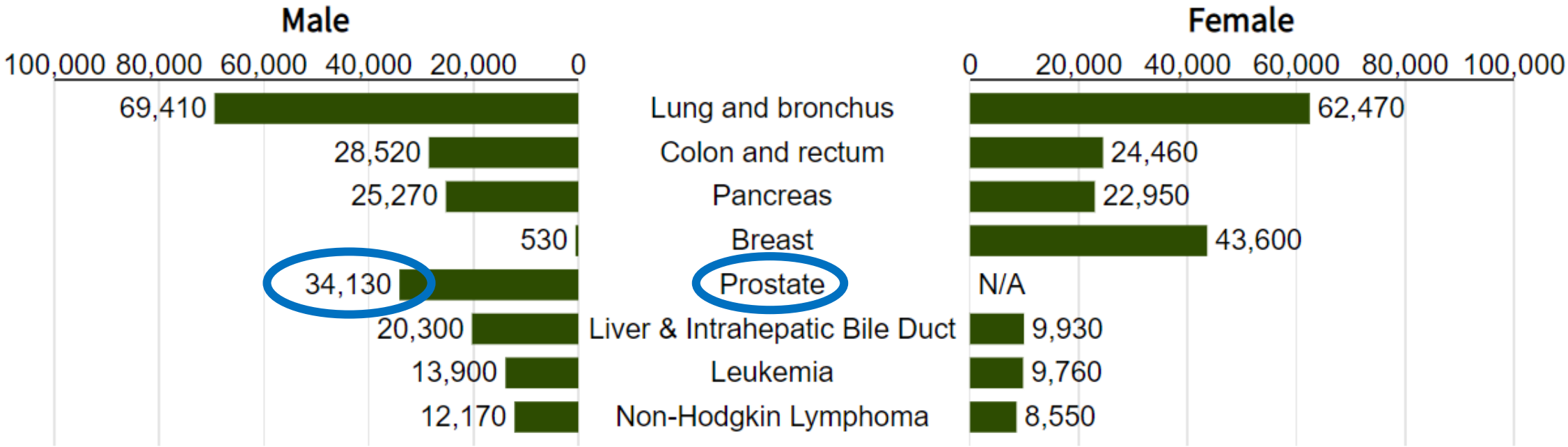

250
200
150
100
50
0
Rate Per 100,000 Persons
1992
1996
2000
2004
2008
2012
2016
2019
Year
Rate of New Cases
Death Rate

The top 12 most common cancer sites, shown below, will account for more than three quarters of all new cancer cases.



Source: Cancer Facts & Figures 2021, American Cancer Society (ACS), Atlanta, Georgia, 2021.

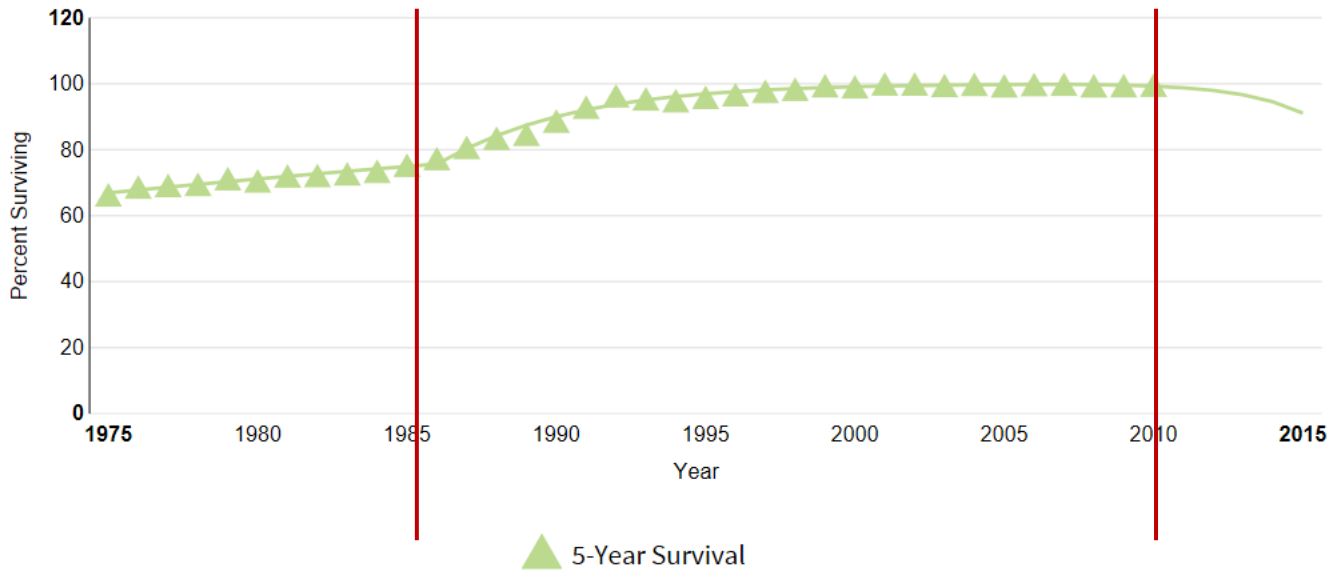
The eight deadliest cancer sites, shown below, will account for almost two-thirds of all expected cancer deaths.



Source: Cancer Facts & Figures 2021, American Cancer Society (ACS), Atlanta, Georgia, 2021.

1985			
	Data	Observed Rate	Modeled Rate
	5-Year Survival	75.3	74.9

2010			
	Data	Observed Rate	Modeled Rate
	5-Year Survival	99.6	99.3

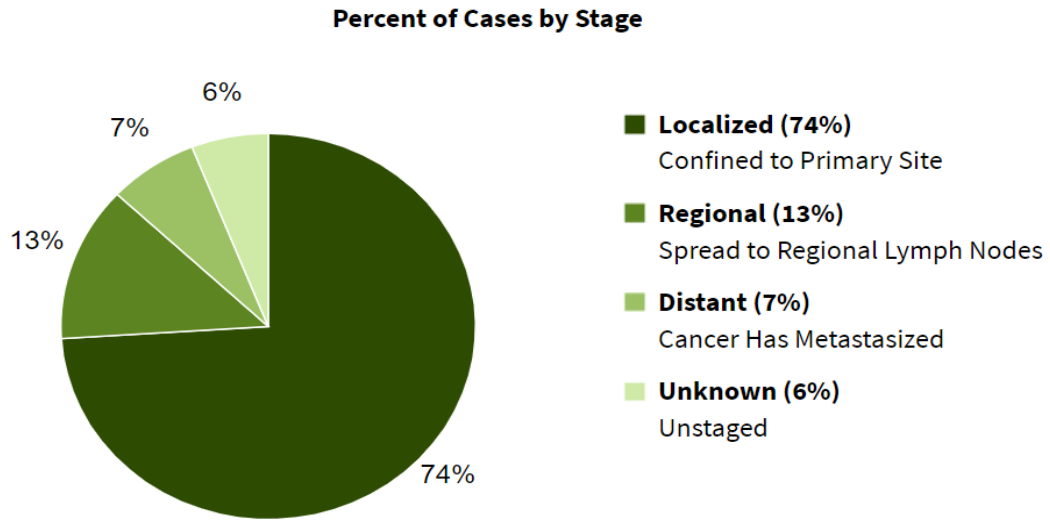


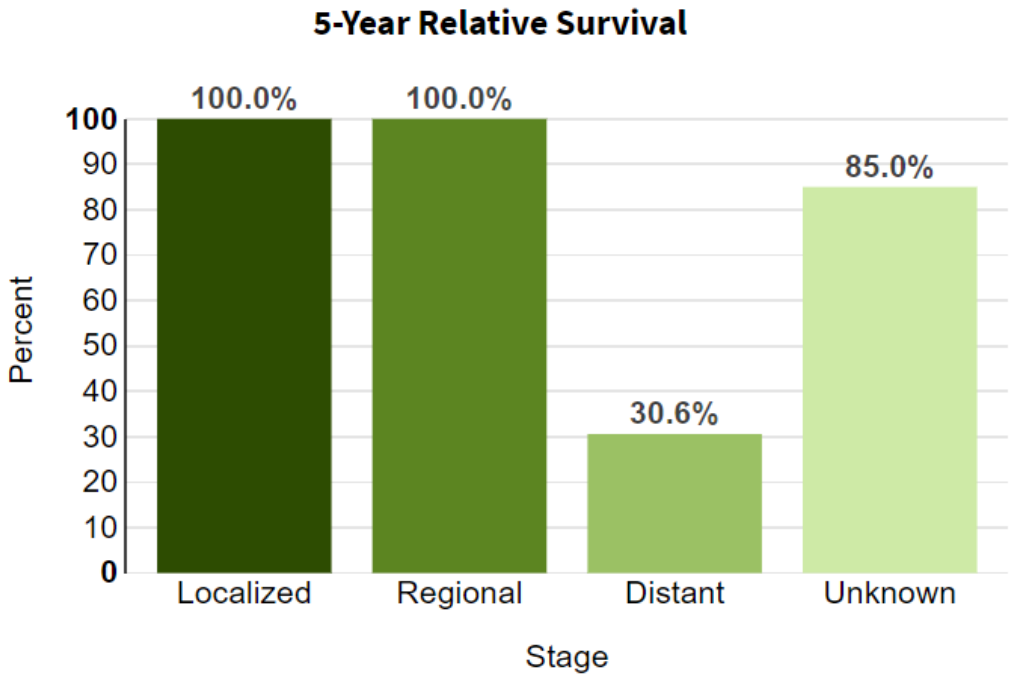
Cancer Trends

- Pre-PSA era
  - 75% with extraprostatic disease
  - 35% with metastatic disease

- Post-PSA era
  - 15% with extraprostatic disease
  - 4% with metastatic disease

Percent of Cases & 5-Year Relative Survival by Stage at Diagnosis: Prostate Cancer





Before Starting

- Assessment:
  - General health
  - Medical Comorbidities
  - Life Expectancy
  - Patient Preferences

- Family history
  - 1st degree relative increases risk of prostate cancer 2.1-2.5-fold.
  - Risk higher with more affected relatives
  - Breast cancer history in family members

Before Starting

- African Ancestry
  - 60% higher incidence
  - 38% higher mortality
  - Earlier onset
- Genetic Syndromes/Germline Mutations
  - HOX genes
  - BRCA 1/2 or other DNA repair mutations
  - Lynch Syndrome

PSA

- Glycoprotein, protease, produced by prostate epithelial cells
- Not cancer specific
- Levels may be affected by:
  - instrumentation, infection, ejaculation, trauma, urinary retention, 5-ARIs, OTC supplements
- Different assays not necessarily directly comparable (calibration differences)
- Empiric antibiotics DO NOT have a clinical benefit in elevated PSA workup of an asymptomatic man
- Abnormal level always warrants a repeat

DRE

- Strongly recommended in guidelines, not required
- High risk disease increased 2.7 fold with abnormal DRE
- No significant value as a stand-alone test; best used with PSA
- In an analysis of 166,104 individuals with prostate cancer diagnosed between 2004-2007 from SEER database, only 685 (0.4%) had a palpable, PSA-occult (level <2.5), Grade Group ≥ 4 disease. (Hattangadi et al, 2012)

Practical Considerations

- Age to Initiate Screening
  - Screening studies did not include younger men
  - Baseline PSA in 40s and early 50s can give risk stratification
  - Higher baseline levels in this age group can predict death from prostate cancer

- Frequency of Testing
  - Can be determined by PSA level at early age
  - Lower frequency with lower PSA levels

Practical Considerations

- Age to Discontinue Screening
  - >75 years old? If healthy or >10-year life expectancy

- Risk of biopsy
  - UTI, epididymitis, orchitis, prostatitis, sepsis
  - Rectal bleeding, pain, hematuria, vasovagal episode, fever, hematospermia, dysuria
  - Transperineal option?

Other Considerations

- PSA derivatives
  - Age specific ranges – does this work?
  - PSAV (Velocity)
  - % free PSA or cPSA
  - PSAD (Density)
  - Prostate Health Index (PHI)
  - Iso-PSA

Other Considerations

- Biomarker Testing
  - PCA-3
  - 4k score
  - Select MDx
  - Confirm MDX
  - Exo Dx IntelliScore (EPI score)

- Imaging
  - MRI
  - Other

Guidelines

- Everyone has different recommendations for screening
  - AUA
  - NCCN
  - ASCO
  - ACS
  - USPSTF
  - EAU/ESTRO

Screening Guidelines

- All Agree on ONE THING:

PSA-based prostate cancer screening requires an informed, shared decision-making process, and the decision should reflect the patient's understanding of the possible risks and benefits and should reflect the patient's preferences and values

- All Differ in:
  - Whether or not routine screening is recommended
  - What age groups and life expectancies
  - What intervals

National Comprehensive Cancer Network®

NCCN Guidelines Version 2.2018
Prostate Cancer Early Detection

NCCN Guidelines Index
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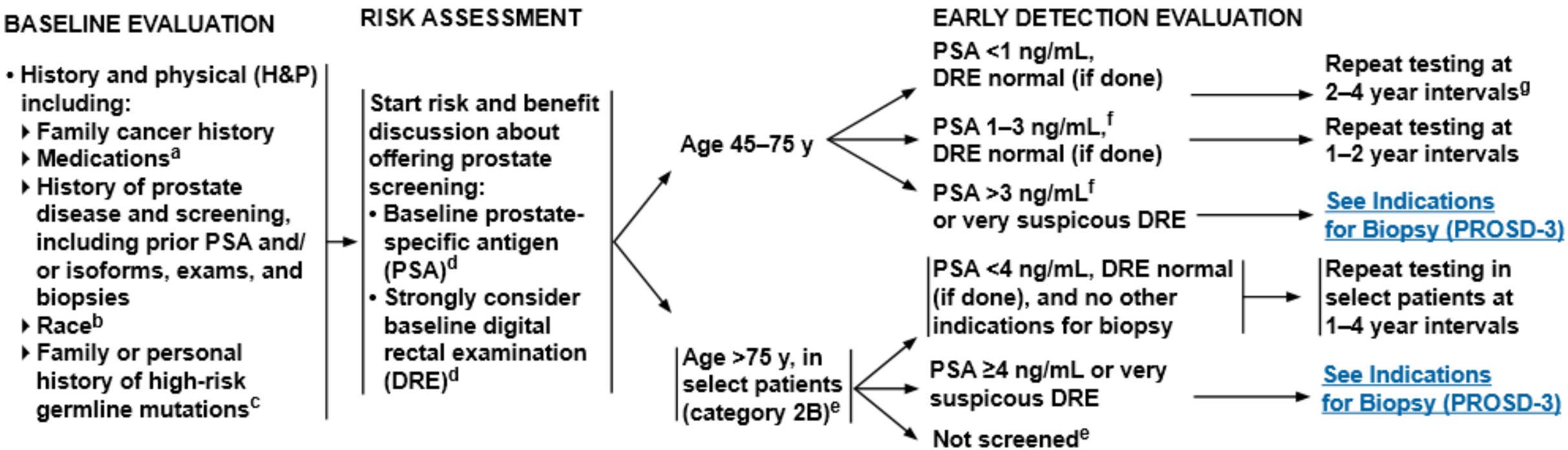
Discussion



INDICATIONS FOR BIOPSY[h]

- Repeat PSA
- DRE, if not performed during initial risk assessment
- Workup for benign disease

→

- Consider biomarkers that improve the specificity of screening[i]
- Consider multiparametric MRI[j]

→

MANAGEMENT

Transrectal ultrasound (TRUS)-guided biopsy[k] → See Management of Biopsy Results (PROSD-4)

or

Follow-up in 6–12 mo with PSA/DRE[i,l]

Summary

- Baseline PSA for 45-75 yo, DRE to complement
- Repeat elevated PSA to confirm
- Start at younger age (40 yo) for those with elevated risk
- PSA <1, consider testing every 2-4 years
- PSA 1-3, testing every 1-2 years
- PSA consider in those >75 yo who are healthy
- MRI if able/available
- Consider biomarkers
- **Need for biopsy – That's our job!**

The Holy Grail for PCa Screening

- Screening/blood test with improved sensitivity and specificity
- Better image guidance for diagnosis and biopsy
- Improve on diagnostic and treatment invasiveness and risk
- DNA/RNA genomic profiling of tumors
- Goal - Delineate aggressive/dangerous tumors from indolent ones

THANK YOU

UCA | Urology Centers Of Alabama

UCA | Women's Center

UCA | Van Scott Cancer Center

UCA | Men's Health Center