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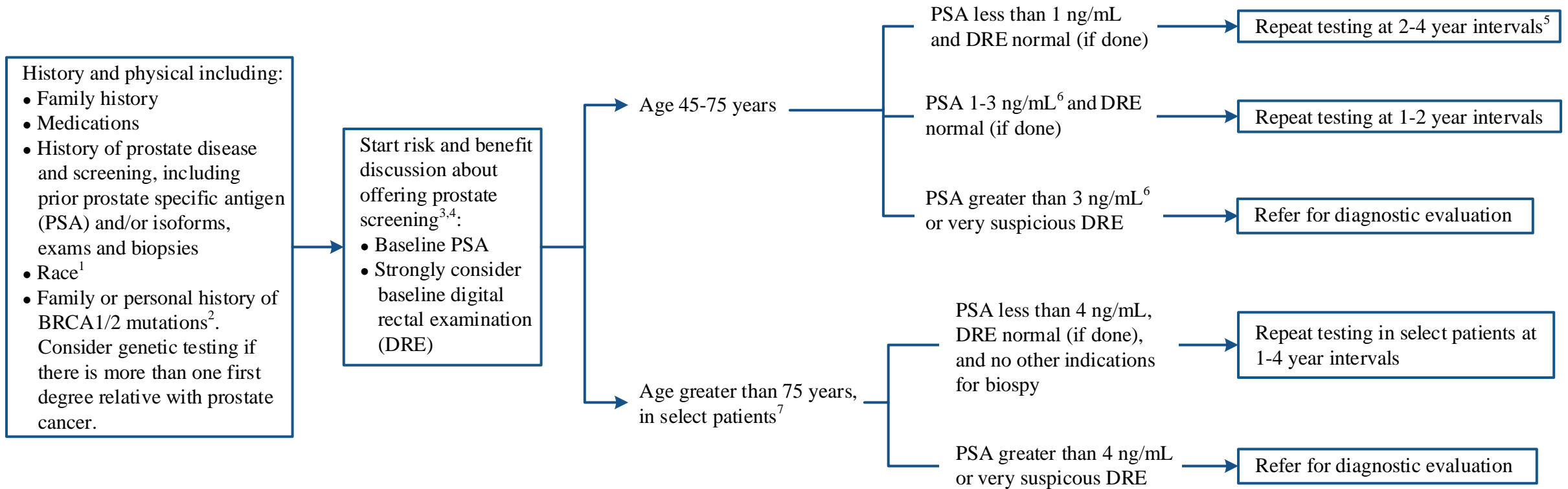
The objective of this guideline is to maximize the detection of prostate cancer not to address whether or not early detection is appropriate. It is inherent that if we maximize the detection of prostate cancer, we will increase the detection of currently defined significant and insignificant prostate cancers. Due to the unique biology of prostate cancer, over-treatment is of concern because the results can potentially impact quality of life. The value of prostate cancer screening is controversial. For those men who, after informed consent, elect to undergo early detection, these general guidelines, in combination with patient preference, are the majority recommendations based on expert opinion at the University of Texas MD Anderson Cancer Center.

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EVALUATION

SCREENING

FOLLOW-UP

History and physical including:
- Family history
- Medications
- History of prostate disease and screening, including prior prostate specific antigen (PSA) and/or isoforms, exams and biopsies
- Race[1]
- Family or personal history of BRCA1/2 mutations[2]. Consider genetic testing if there is more than one first degree relative with prostate cancer.

Start risk and benefit discussion about offering prostate screening[3,4]:
- Baseline PSA
- Strongly consider baseline digital rectal examination (DRE)

Age 45-75 years

PSA less than 1 ng/mL and DRE normal (if done) → Repeat testing at 2-4 year intervals[5]

PSA 1-3 ng/mL[6] and DRE normal (if done) → Repeat testing at 1-2 year intervals

PSA greater than 3 ng/mL[6] or very suspicious DRE → Refer for diagnostic evaluation

Age greater than 75 years, in select patients[7]

PSA less than 4 ng/mL, DRE normal (if done), and no other indications for biospy → Repeat testing in select patients at 1-4 year intervals

PSA greater than 4 ng/mL or very suspicous DRE → Refer for diagnostic evaluation

Department of Clinical Effectiveness V2
Approved by the Executive Committee of the Medical Staff on 07/30/2019

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FOOTNOTES

[1] African-American men have a higher incidence of prostate cancer, increased prostate cancer mortality, and earlier age of diagnosis compared to Caucasian-American men. This is attributable to a greater risk of developing preclinical prostate cancer and a higher likelihood that a preclinical tumor will spread. Consequently, it is reasonable for African-American men to begin discussing PSA screening with their providers several years earlier than Caucasian-American men and to consider screening at annual intervals rather than every other year.

[2] If there is a known or suspected cancer susceptibility gene mutation, referral to a cancer genetics professional is recommended. BRCA1/2 pathogenic mutation carriers are associated with an increased risk of prostate cancer before age 65 years, and prostate cancer in men with germline BRCA2 mutations occurs earlier and is more likely to be associated with prostate cancer mortality. Information regarding BRCA1/2 gene status should be used as part of the discussion about prostate cancer screening.

[3] May begin at 40 years of age for men with more than one first-degree relative who had prostate cancer at an early age

[4] The best evidence supports the use of serum PSA for the early detection of prostate cancer. Digital rectal exam (DRE) should not be used as a stand-alone test, but should be performed in those with an elevated serum PSA. DRE may be considered as a baseline test in all patients as it may identify high-grade cancers associated with "normal" serum PSA values. Consider referral for biopsy if DRE is very suspicious. Medications such as 5α-reductase inhibitors (finasteride and dutasteride) are known to decrease PSA by approximately 50%. PSA values in these men should be corrected accordingly.

[5] Men age greater than or equal to 60 years with serum PSA less than 1.0 ng/mL have a very low risk of metastases or death due to prostate cancer and may not benefit from further testing. A PSA cut point of 3.0 ng/mL at age 75 years also carries a low risk of poor outcome.

[6] The reported median PSA values for men aged 40-49 year range from 0.5-0.7 ng/mL, and the 75th percentile values range from 0.7-0.9 ng/mL. Therefore, the PSA value of 1.0 ng/mL selects for the upper range of PSA values. Men who have a PSA above the median for their age group are at a higher risk for prostate cancer and for the aggressive form of the disease. The higher above the median, the greater the risk.

[7] Testing above 75 years of age should be done with caution and only in very healthy men with little or no comorbidity as a large proportion may harbor cancer that would be unlikely to affect their life expectancy, and screening in this population would substantially increase rates of over-detection. However, a clinically significant number of men in this age group may present with high-risk cancers that pose a significant risk if left undetected until signs or symptoms develop. Consider omitting PSA testing in men above the age of 75 years as very few will benefit.

SUGGESTED READINGS

American Cancer Society. (2010). Early Detection Prostate Cancer ACS: Informed Decision Making Core Elements. Retrieved from https://www.cancer.org/health-care-professionals/american-cancer-society-prevention-early-detection-guidelines/prostate-cancer-screening-guidelines.html

Brooks, D. D., Wolf, A., Smith, R. A., Dash, C., & Guessous, I. (2010). Prostate Cancer screening 2010: Updated recommendations from the American Cancer Society. *Journal of the National Medical Association*, *102*(5), 423-9. doi:10.1016/S0027-9684(15)30578-2

Halpern, J. A., Shoag, J. E., Mittal, S., Oromendia, C., Ballman, K. V., Hershman, D. L., ... Hu, J. C. (2017). Prognostic significance of digital rectal examination and prostate specific antigen in the prostate, lung, colorectal and ovarian (PLCO) cancer screening arm. *The Journal of Urology*, *197*(2), 363-368. doi:10.1016/j.juro.2016.08.092

National Comprehensive Cancer Network. (2019). *Prostate Cancer Early Detection (NCCN Guideline Version* 1.2019). Retrieved from https://www.nccn.org/professionals/physician_gls/pdf/prostate.pdf

U.S. Preventive Services Task Force. (2019). Information for health professionals. Retrieved from https://www.uspreventiveservicestaskforce.org/Page/Name/tools-and-resources-for-better-preventive-care

Wolf, A. M. D., Wender, R. C., Etzioni, R. B., Thompson, I. M., D'Amico, A. V., Volk, R. J., ... DeSantis, C. (2010). American Cancer Society guideline for the early detection of prostate cancer: Update 2010. *CA: A Cancer Journal for Clinicians*, *60*(2), 70-98. doi:10.3322/caac.20066

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This screening algorithm is based on majority expert opinion of the Prostate Screening work group at the University of Texas MD Anderson Cancer Center. It was developed using a multidisciplinary approach that included input from the following:

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