



Client	HEALTH BENCHMARKS, INC. STANDARD ALGORITHM <i>Implemented for Blue Cross Blue Shield of Illinois</i>		
Measure Title	FOLLOW-UP AFTER DIAGNOSIS OF PROSTATE CANCER		
Disease State	Cancer	Indicator Classification¹	Disease Management
Strength of Recommendation²	B		
Clinical Intent	To ensure that all eligible males diagnosed with prostatic cancer receive the necessary follow-up monitoring services at a clinically appropriate frequency.		
Physician Specialties	Family Practice, General Practice, Internal Medicine, Mixed Specialty		

Clinical Rationale

Disease Burden

- In the United States, prostate cancer is the most commonly diagnosed cancer, and the second most common cause of cancer death in men.[1]
- The American Cancer Society estimates that in 2005, approximately 232,000 men will be diagnosed with prostate cancer, and about 30,350 men will die from it.[1]
- Even though there is a 17% lifetime risk of developing prostate cancer, the risk of dying from prostate cancer is only about 3%.[1, 2]
- The relative five-year survival rate for patients with prostate cancer diagnosed in the local or regional stages approaches 100%, while the relative 10- and 15-year survival rates are 92% and 61%, respectively.[1]

Reason for Indicated Intervention or Treatment

- Prostate specific antigen (PSA) screening after treatment for prostate cancer can help detect recurrences.[3]
- For patients deciding to undergo watchful waiting instead of receiving treatment after being diagnosed with prostate cancer, PSA testing can help differentiate between slower growing cancers and more aggressive ones, for which patients may elect to receive definitive treatment.

Evidence supporting Intervention or Treatment

- A study of almost 1800 prostate cancer patients showed that 77% of the 339 patients with recurrences were detected solely by an increase in PSA level, and 98% by an increase in PSA level plus local or distant recurrence.[3]
- Few studies have examined the desired frequency of PSA monitoring, and there is no community standard.
 - A survey of 1050 American Urological Association members showed appreciable variation in the frequency of PSA testing after radical prostatectomy for localized prostate cancer, though respondents generally recommended serum PSA testing every 3 months in the first year, every 6 months in years 2 to 5, and yearly thereafter.[4]
 - One randomly controlled trial examined the relationship between serum PSA levels and the future cumulative risk of prostate cancer. Among the 5855 men, 539 cases of prostate cancer (9.2%) were detected after a median follow-up of 7.6 years. There was increasing incidence of prostate cancer with increasing PSA levels with a 0% incidence in men within 3 years who had an initial PSA level of <1 ng/mL. The study concluded that testing intervals should be

individualized based on the initial PSA level and that men with an initial PSA level of <1 ng/mL can safely be scheduled for a 3 year treating interval.[5]

- There are some current large-scale studies that intend to examine the effects of PSA screening on patient mortality.[6-8] The follow-up time for many of these studies however is too short to provide data on mortality rates. The studies that do provide this data are mixed in opinion.
 - One large randomized controlled trial showed a benefit to PSA screening in a group of 46,486 men aged 45-80 years. A Cox proportional hazards model of the age at death from prostate cancer shows a 62% reduction (P < 0.002, Fisher's exact test) of cause-specific mortality in the screened men (P = 0.005).[9]
 - In another randomized controlled trial involving 9026 men aged 50-69 years, there were 85 (5.7%) cancers detected in the screened group (SG), 42 of these in the interval between screenings, and 292 (3.8%) in the unscreened group (UG). In the SG 48 (56.5%) of the tumors and in the UG 78 (26.7%) were localized at diagnosis (p < 0.001). In the SG 21 (25%) and in the UG 41 (14%) received curative treatment. However, there was no significant difference in total or prostate cancer-specific survival between the groups. [10]

Clinical Recommendations

- To detect disease recurrence, the American Urological Association (AUA) recommends periodically offering PSA testing in the post-treatment management of prostate cancer.[11]
- The frequency of testing is somewhat unclear, but most experts and organizations agree that follow-up PSA testing should be performed at least annually. Some experts recommend checking PSA levels every 6 months for the first two years after treatment, and then annually.[12] Others recommend tailoring the frequency of testing to the pathologic grade and stage.[13]
- The National Comprehensive Cancer Network (NCCN) recommends PSA testing every 6 months for 5 years, then annually thereafter.[14]
- The American Society for Therapeutic Radiology and Oncology (ASTRO) recommends PSA testing every 3 or 4 months during the first two years following radiation therapy for prostate cancer, and every 6 months thereafter.[15]
- For patients with a life expectancy greater than or equal to 10 years who wish to undergo expectant management, the NCCN recommends PSA testing every 6 months [14], while other experts recommend testing every 3 months for the first 2 years and every 6 months thereafter.[16]

Source	Health Benchmarks, Inc.
Denominator	Continuously enrolled males ages 18 - 90 years old by the end of the measurement year, who had a diagnosis of prostate cancer at any point in the available history.
Denominator Exclusion	N/A
Numerator	Members who had a PSA or free PSA fraction blood test during the measurement year.
Interpretation of Score	High score implies better performance

Physician Attribution

Score all physicians (in the selected specialties) who saw the member during the measurement year.

References

1. *Cancer Facts and Figures 2005*. 2005, American Cancer Society: Atlanta, GA.
2. Gloeckler Ries, L.A., et al., *Cancer survival and incidence from the Surveillance, Epidemiology, and End Results (SEER) program*. *Oncologist*, 2003. **8**(6): p. 541-52.
3. Catalona, W.J. and D.S. Smith, *Cancer recurrence and survival rates after anatomic radical retropubic prostatectomy for prostate cancer: intermediate-term results*. *J Urol*, 1998. **160**(6 Pt 2): p. 2428-34.
4. Oh, J., et al., *Current followup strategies after radical prostatectomy: a survey of American Urological Association urologists*. *J Urol*, 1999. **161**(2): p. 520-3.
5. Aus, G., et al., *Individualized screening interval for prostate cancer based on prostate-specific antigen level: results of a prospective, randomized, population-based study*. *Arch Intern Med*, 2005. **165**(16): p. 1857-61.
6. Makinen, T., et al., *Second round results of the Finnish population-based prostate cancer screening trial*. *Clin Cancer Res*, 2004. **10**(7): p. 2231-6.
7. Hugosson, J., et al., *Results of a randomized, population-based study of biennial screening using serum prostate-specific antigen measurement to detect prostate carcinoma*. *Cancer*, 2004. **100**(7): p. 1397-405.
8. Andriole, G.L., et al., *Prostate Cancer Screening in the Prostate, Lung, Colorectal and Ovarian (PLCO) Cancer Screening Trial: findings from the initial screening round of a randomized trial*. *J Natl Cancer Inst*, 2005. **97**(6): p. 433-8.
9. Labrie, F., et al., *Screening decreases prostate cancer mortality: 11-year follow-up of the 1988 Quebec prospective randomized controlled trial*. *Prostate*, 2004. **59**(3): p. 311-8.
10. Sandblom, G., et al., *Clinical consequences of screening for prostate cancer: 15 years follow-up of a randomised controlled trial in Sweden*. *Eur Urol*, 2004. **46**(6): p. 717-23; discussion 724.
11. *Prostate-specific antigen (PSA) best practice policy*. *American Urological Association (AUA)*. *Oncology (Huntingt)*, 2000. **14**(2): p. 267-72, 277-8, 280 passim.
12. Montie, J.E., *Follow-up after radical prostatectomy or radiation therapy for prostate cancer*. *Urol Clin North Am*, 1994. **21**(4): p. 673-6.
13. Evans, C.P., *Follow-up surveillance strategies for genitourinary malignancies*. *Cancer*, 2002. **94**(11): p. 2892-905.
14. *Prostate Cancer. National Comprehensive Cancer Network*. *Clinical Practice Guidelines in Oncology* 2004 1.2004 [cited 1.2004 April 5]; 1.2004:[Available from: http://www.nccn.org/professionals/physician_gls/PDF/prostate.pdf.
15. *Consensus statement: guidelines for PSA following radiation therapy*. *American Society for Therapeutic Radiology and Oncology Consensus Panel*. *Int J Radiat Oncol Biol Phys*, 1997. **37**(5): p. 1035-41.
16. Choo, R., et al., *Feasibility study: watchful waiting for localized low to intermediate grade prostate carcinoma with selective delayed intervention based on prostate specific antigen, histological and/or clinical progression*. *J Urol*, 2002. **167**(4): p. 1664-9.

¹ **Indicator Classification** (Adapted from Health Plan Employer Data Information Set (HEDIS®) technical specifications)

Diagnosis	Measures applicable to patients receiving diagnostic workups for a symptom or condition that delineate appropriate laboratory or radiological testing to be performed (e.g. evaluation of thyroid nodule; pregnancy test in patients with vaginal bleeding or abdominal pain)
Effectiveness of Care	
Prevention	Measures applicable to asymptomatic individuals that are designed to prevent the onset of the targeted condition (e.g. immunizations).
Screening	Measures applicable to asymptomatic patients who have risk factors or pre-clinical disease, but in whom the condition has not become clinically apparent (e.g. pap smears; screening for elevated blood pressure).
Disease Management	Measures applicable to individuals diagnosed with a condition that are part of the treatment or management of the condition (e.g. cholesterol reduction in patients with diabetes; radiation therapy following breast conserving surgery; appropriate follow-up after acute event).
Medication Monitoring	Measures applicable to patients taking medications with narrow therapeutic windows and / or potential preventable significant side effects or adverse reactions (e.g. thyroid stimulating hormone (TSH) testing after levothyroxine dose change; hepatic enzyme monitoring for patients using antimycotic pharmacotherapy)
Medication Adherence	Measures applicable to patients taking medications for chronic conditions that are designed to assess patient adherence to medication (e.g. adherence to lipid lowering medication).
Utilization	Measures applicable to patients receiving treatment for a symptom or condition that advocate appropriate utilization of laboratory and pharmaceutical resources (e.g. conservative use of imaging for low back pain; inappropriate use of antibiotics for viral upper respiratory infection).

² Strength of Recommendation

Strength of Recommendation Based on a Body of Evidence

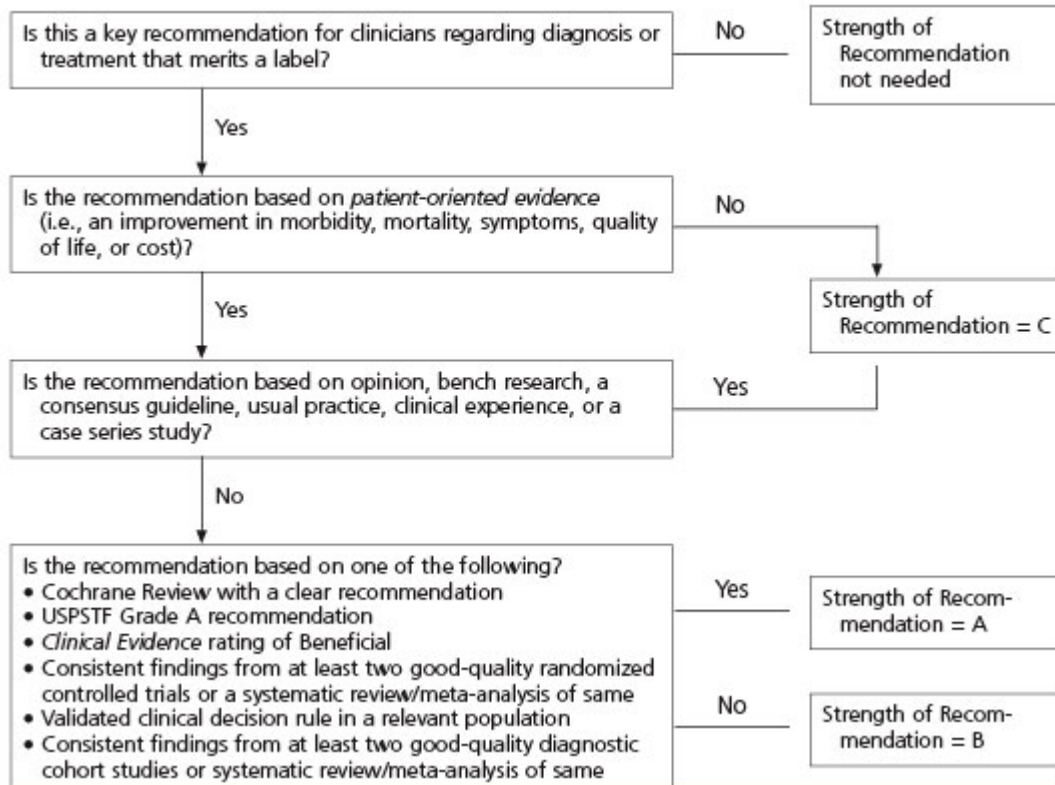


FIGURE 2. Algorithm for determining the strength of a recommendation based on a body of evidence (applies to clinical recommendations regarding diagnosis, treatment, prevention, or screening). While this algorithm provides a general guideline, authors and editors may adjust the strength of recommendation based on the benefits, harms, and costs of the intervention being recommended. (USPSTF = U.S. Preventive Services Task Force)