Health Benchmarks®
Clinical Quality Indicator Specification 2007

Client	HEALTH BENCHMARKS, INC. STANDARD ALGORITHM *Implemented for Blue Cross Blue Shield of Texas*
Measure Title	RADIATION THERAPY FOLLOWING BREAST CONSERVING SURGERY
Disease State	Cancer
Indicator Classification[1]	Disease Management
Strength of Recommendation[2]	A
Organizations Providing Recommendation	The National Comprehensive Cancer Network, The Institute for Clinical Systems Improvement
Clinical Intent	To ensure that all eligible women who underwent breast conserving surgery receive follow up radiation therapy within a clinically appropriate timeframe.
Physician Specialties	General Surgery, Oncology

Clinical Rationale

Disease Burden

- The American Cancer Society estimated that there would be approximately 212,930 new cases and 40,870 deaths from invasive breast cancer in the United States in 2005.[1]
- Breast cancer is the most commonly diagnosed cancer, and the second largest cause of cancer deaths (behind lung cancer) in women.[1]

Reason for Indicated Intervention or Treatment

- Women undergoing breast-conserving therapy have an enhanced quality of life.[2, 3] In the United States, breast conserving treatment has become the recommended treatment option for women with early breast cancer.[4]
- Patients not undergoing radiotherapy after breast-conserving therapy have a large increase in the risk of ipsilateral breast cancer recurrence, and a small increase in the risk of mortality.[5]

Evidence supporting Intervention or Treatment

- A 20 year follow up to the British Columbia randomized radiation trial concluded that “for patients with high-risk breast cancer treated with modified radical mastectomy, treatment with radiation therapy (schedule of 16 fractions) and adjuvant chemotherapy leads to better survival outcomes than chemo therapy alone, and is well tolerated, with acceptable long-term toxicity.”[6]
- A meta-analysis of 15 randomized controlled trials with 9422 patients showed that the relative risk of ipsilateral breast tumor recurrence after breast-conserving therapy in patients treated with no radiotherapy versus with radiotherapy was 3.0 (95% confidence interval [CI] of 2.65 to 3.40). In addition, an analysis of 13 randomized controlled trials with 8206 patients showed a relative risk of mortality of 1.086 (95% CI of 1.003 to 1.175) if no radiotherapy was given.[5]
- Another meta-analysis of 9 randomized controlled trials with 4891 patients revealed no apparent difference in total mortality (22.9% versus 22.9%) in patients receiving mastectomy versus breast-conserving

therapy plus radiotherapy. Similarly, there was no difference in survival among approximately 3100 women in 7 randomized controlled trials comparing the two treatment options.[7]
- A large review to support new practice guidelines concluded that breast conserving surgery with axillary dissection and radiotherapy provided comparable overall and disease free survival to modified radical mastectomy.[8]

Clinical Recommendations
- The National Comprehensive Cancer Network's (NCCN) 2006 Clinical Practice Guidelines in Oncology recommend that women undergoing breast-conserving therapy receive post-operative radiotherapy.[9]
- The Institute for Clinical Systems Improvement (ICSI) guideline for breast cancer treatment recommends post-operative radiation for patients undergoing breast conserving therapy.[10]

Source Health Benchmarks, Inc.

Denominator Continuously enrolled women up to age 70 years old who have undergone breast conserving surgery to treat a confirmed primary diagnosis of breast cancer in the year prior to the measurement year.

Denominator Exclusion Women who had any one of the following: evidence of pregnancy defined by prenatal care visits 300 days prior to the index date through 12 months following the index date (inclusive of the index date); or underwent a mastectomy; or had a diagnosis of scleroderma or lupus at any point prior to the end of the measurement year; or underwent an excision procedure in the last 0-12 months of the measurement year.

Numerator Members who received radiation therapy 0- 12 months after the index date.

Interpretation of Score High score implies better performance.

Physician Attribution Description Score all physicians (in the selected specialties) who saw the member 0- 12 months after the index date.

References

1. Jemal, A., et al., *Cancer statistics, 2005.* CA Cancer J Clin, 2005. **55**(1): p. 10-30.
2. Al-Ghazal, S.K., L. Fallowfield, and R.W. Blamey, *Comparison of psychological aspects and patient satisfaction following breast conserving surgery, simple mastectomy and breast reconstruction.* Eur J Cancer, 2000. **36**(15): p. 1938-43.
3. McArdle, J.M., A.V. Hughson, and C.S. McArdle, *Reduced psychological morbidity after breast conservation.* Br J Surg, 1990. **77**(11): p. 1221-3.
4. *NIH consensus conference. Treatment of early-stage breast cancer.* Jama, 1991. **265**(3): p. 391-5.
5. Vinh-Hung, V. and C. Verschraegen, *Breast-conserving surgery with or without radiotherapy: pooled-analysis for risks of ipsilateral breast tumor recurrence and mortality.* J Natl Cancer Inst, 2004. **96**(2): p. 115-21.
6. Ragaz, J., et al., *Locoregional radiation therapy in patients with high-risk breast cancer receiving adjuvant chemotherapy: 20-year results of the British Columbia randomized trial.* J Natl Cancer Inst, 2005. **97**(2): p.

116-26.
7. *Effects of radiotherapy and surgery in early breast cancer. An overview of the randomized trials. Early Breast Cancer Trialists' Collaborative Group.* N Engl J Med, 1995. **333**(22): p. 1444-55.
8. McCready, D., et al., *Surgical management of early stage invasive breast cancer: a practice guideline.* Can J Surg, 2005. **48**(3): p. 185-94.
9. Hughes, K.S., et al., *Lumpectomy plus tamoxifen with or without irradiation in women 70 years of age or older with early breast cancer.* N Engl J Med, 2004. **351**(10): p. 971-7.
10. Smith, I.E. and G.M. Ross, *Breast radiotherapy after lumpectomy--no longer always necessary.* N Engl J Med, 2004. **351**(10): p. 1021-3.
11. NCCN, *Breast Cancer*, in *National Comprehensive Cancer Netowrk (NCCN) Practice Guidelines in Oncology*. 2006, NCCN.
12. ICSI, *Breast cancer treatment*. 2005, Institute for Clinical Systems Improvement (ICSI): Bloomington (MN). p. 57.

[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).

Strength of Recommendation Based on a Body of Evidence

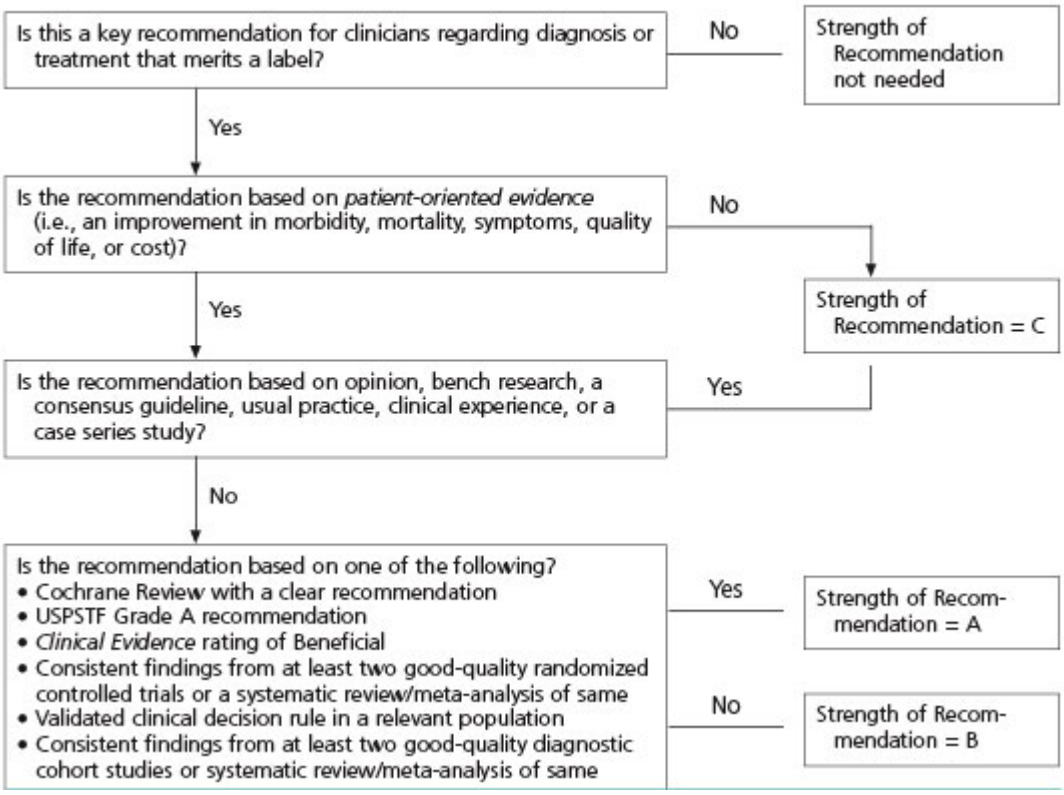

FIGURE 2. Algorithm for determining the strength of a recommendation based on a body of evidence (applies to clinical recommendations regarding diagnosis, treatment, prevention, or screening). While this algorithm provides a general guideline, authors and editors may adjust the strength of recommendation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