



INSTITUTE FOR CLINICAL
SYSTEMS IMPROVEMENT

Health Care Guideline

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- physicians, nurses, and other health care professional and provider organizations;
- health plans, health systems, health care organizations, hospitals and integrated health care delivery systems;
- medical specialty and professional societies;
- researchers;
- federal, state and local government health care policy makers and specialists; and
- employee benefit managers.

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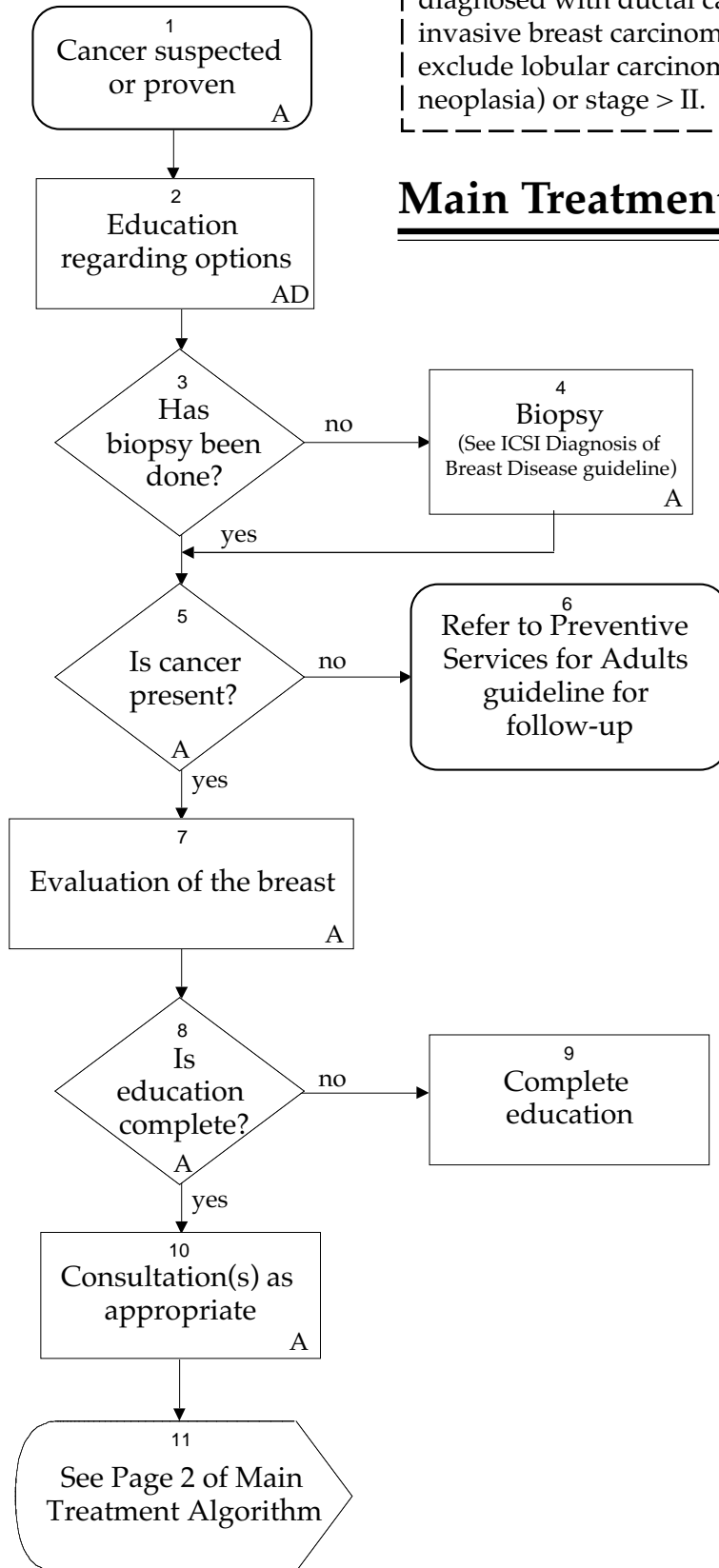
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This guideline is intended to apply to patients diagnosed with ductal carcinoma in situ and invasive breast carcinoma (Stage 0, I, II) and exclude lobular carcinoma in situ (lobular neoplasia) or stage > II.

Main Treatment Algorithm



General Implementation January 2003

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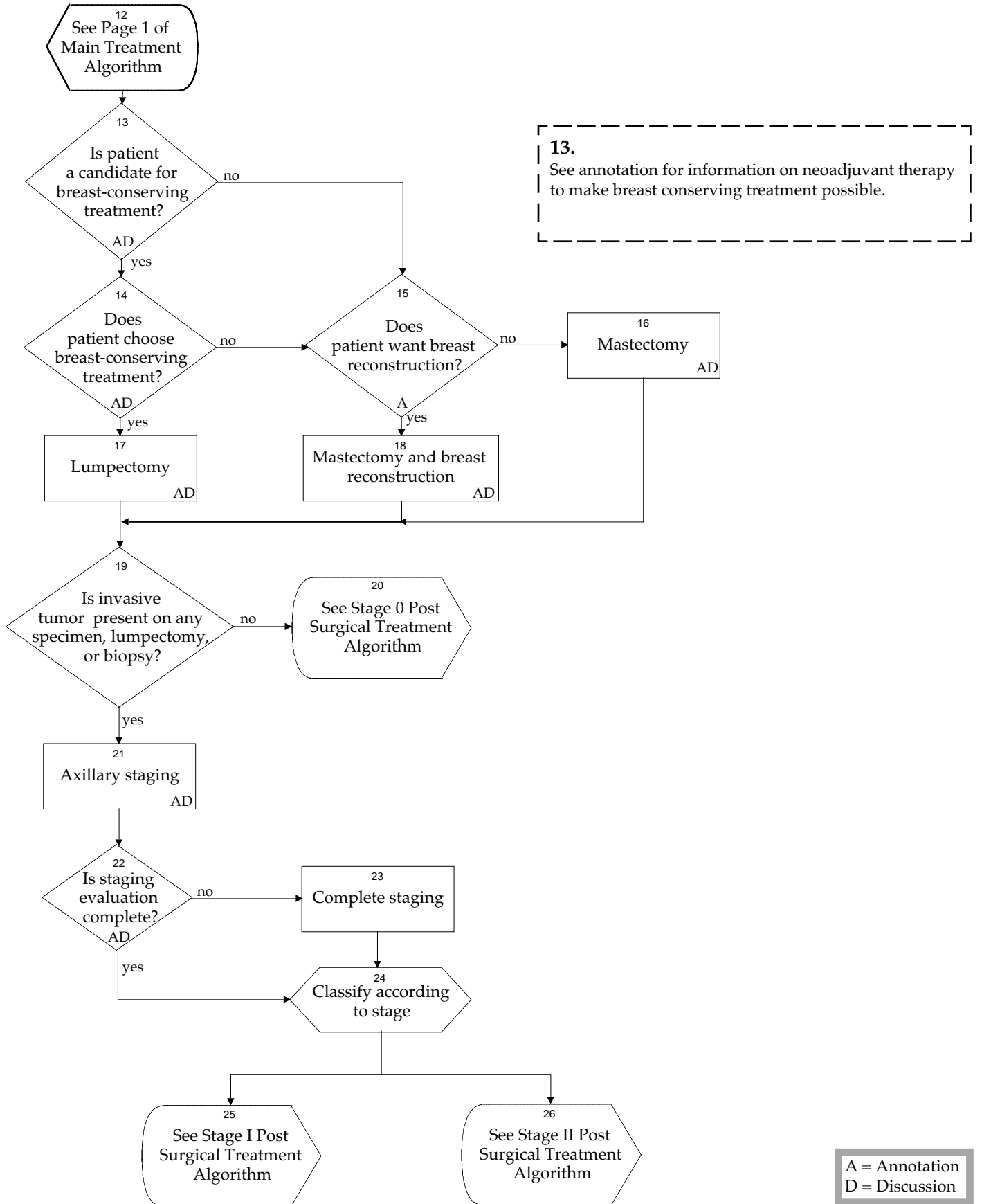
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These clinical guidelines are designed to assist clinicians by providing an analytical framework for the evaluation and treatment of patients, and are not intended either to replace a clinician's judgment or to establish a protocol for all patients with a particular condition. A guideline will rarely establish the only approach to a problem.

A = Annotation
D = Discussion



Algorithm(s)

Main Treatment	1-2
Stage 0 Post Surgical Treatment	14
Stage I Post Surgical Treatment	16
Stage II Post Surgical Treatment	19

Overview

Scope and Target Population	4
Related ICSI Scientific Documents	4
Clinical Highlights for Individual Clinicians	4
<i>(Recommendations for application in individual clinician practice)</i>	
Priority Aims and Suggested Measures for Health Care Systems	4-5
<i>(Guideline implementation goals to pursue across health care systems and measures to assess progress at achieving them.)</i>	
Brief Description of Evidence Grading	5

Annotations <i>(Footnotes for Algorithm)</i>	6-22
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Discussion & References <i>(Discussion with Reference Citations)</i>	23-36
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Disclosure of Potential Conflict of Interest	24
Full Description of Evidence Grading	25-26
Discussion with Reference Citations	27-33
Discussion and Reference Appendix A - Conclusion Grading Worksheet – Annotation #31 (Stage 0 Algorithm), Annotation #36 (Stage I Algorithm), Annotation #42 (Stage II Algorithm)	34-36

Support for Implementation <i>(Implementation measures, strategies and materials)</i>	37-45
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Priority Aims & Suggested Measures for Health Care Systems	38
<i>(Guideline implementation goals to pursue across health care systems and measures to assess progress at achieving them.)</i>	
Measurement Specifications	39
Recommendations for Health Care Systems	40
<i>(Systems approaches to implementation)</i>	
Recommended Internet Websites for Providers and/or Patients	41-43
Support Groups, Local and National Organizations	44-45

SCOPE AND TARGET POPULATION

All patients with the diagnosis of breast cancer who are candidates for treatment.

RELATED ICSI SCIENTIFIC DOCUMENTS

Other ICSI guidelines whose scope and/or recommendations are closely related to the content of this guideline are:

1. Diagnosis of Breast Disease
2. Preventive Services for Adults

Technology Assessment Reports related to the content of this guideline are:

1. Lymphatic Mapping with Sentinal Lymph Node Biopsy (SLNB) for Breast Cancer (Report #45, 2002.)
2. High-Dose Chemotherapy with Autologous Stem Cell Support for the Treatment of Breast Cancer (Report #2, 2002.)

CLINICAL HIGHLIGHTS FOR INDIVIDUAL CLINICIANS

1. Breast cancer treatment involves a multidisciplinary approach including both primary and specialty care. From the first encounter with a patient and her family, mutual expectations and a trust relationship must be established. (*Annotation #1, Main Treatment Algorithm*)
2. Appropriate treatment modalities must be applied and may include:
 - a. Surgery (*Annotations #16-21 of Main Treatment Algorithm*)
 - b. Medical oncology (*Annotation #28 of the Stage 0 Algorithm, Annotation #33 of the Stage I Algorithm, and Annotation #38 Stage II of Algorithm*)
 - c. Radiation oncology (*Annotation #30 of the Stage 0 Algorithm, Annotation #35 of the Stage I Algorithm and Annotation #41 of the Stage II Algorithm*)

PRIORITY AIMS AND SUGGESTED MEASURES FOR HEALTH CARE SYSTEMS

1. Improve access to all appropriate options for primary therapy for patients with early breast cancer.

Possible measure of accomplishing this aim:

- a. Percent of patients with stage 0, I or II breast cancer for whom a discussion of appropriate treatment options, including lumpectomy plus radiation, is documented in the medical record.

2. Standardize the application of appropriate treatment modalities (surgery, radiation, and systemic therapy) and follow-up schedules for patients with breast cancer.

Possible measures of accomplishing this aim:

- a. Percent of patients with breast cancer with a detailed follow-up plan documented in the medical record.
- b. Percent of patients with breast cancer with a detailed plan in the medical record (measure 2a) with follow-up documented as planned in the first 12 months following diagnosis.

3. Increase the use of standardized education materials and psycho-social support for patients with breast cancer and their families.

Possible measures of accomplishing this aim:

- a. Percent of patients with breast cancer who self-report via survey (mailed or administered at the clinic) that they have received relevant patient education materials.
- b. Percent of relevant clinic sites that have available current patient education materials on breast cancer that are recommended by the guideline.

4. Enhance awareness of the importance of clinical trials in breast cancer treatment.

Possible measures of accomplishing this aim:

- a. Percent of patients with Stage 0, I or II breast cancer with documentation in their medical record that the option of a clinical trial has been discussed with them.
- b. Percent of patients with Stage 0, I or II breast cancer that are registered for clinical trials for breast cancer treatment annually.

EVIDENCE GRADING

Individual research reports are assigned a letter indicating the class of report based on design type: A, B, C, D, M, R, X.

Key conclusions are assigned a conclusion grade: I, II, III, or Grade Not Assignable.

A full explanation of these designators is found in the Discussion and References section of the guideline.

MAIN TREATMENT ALGORITHM ANNOTATIONS

1. Cancer Suspected or Proven

The primary physician or specialist needs to confirm the presence or absence of cancer. This encounter is of critical importance, as it is at this time that the trust relationship is established. Mutual expectations are established and the steps are identified.

2. Education Regarding Options

All potential options are reviewed with the patient and her significant other(s) when appropriate. It is important to include all possible treatment options (based on the biopsy results) at this visit. Breast conservation vs. mastectomy as well as axillary staging options need to be discussed including the rationale for the selection of the type of procedure. The anticipated cosmetic appearance should be discussed with the patient prior to choosing a surgical option.

Reconstruction should be offered to women with Stage 0-II breast cancer who require or desire mastectomy.

Consideration needs to be given to the resources that may be needed based on the type of surgery and/or degree of involvement. It is important to assist the patient and her significant other(s) to have a seamless system of care. The following is a suggestion of services that the practitioner should consider:

- Patient education
- General surgery
- Medical oncology
- Radiation oncology
- Reconstructive plastic surgery

Evidence supporting this recommendation is of class: R

4. Biopsy

For palpable masses, fine needle aspiration (FNA), needle core, or surgical (incisional or excisional) biopsy may be performed. Non-palpable mammographic lesions require radiographic (mammographic or ultrasonographic) localization for either core needle or surgical biopsy.

Biopsy incisions should be placed to minimize subcutaneous tunneling when removing the tumor. Whenever possible, an incision should be situated so that it can be removed with a standard mastectomy incision. Curvilinear incisions following Langer's lines (concentric circles around the areola) provide the best cosmesis, especially in the upper hemisphere. Radial incisions will result in less tissue distortion when larger biopsies are performed in the lower half of the breast.

If cancer is suspected and the patient wishes breast conservation, a small margin of grossly normal breast tissue should be excised with the lesion. The specimen should be oriented with sutures or some other method to clearly define anterior-posterior, cephalad-caudad, and medial-lateral coordinates. The surgeon should examine the excisional specimen and remove additional tissue whenever inadequate tumor clearance is likely. Any additional specimen(s) must be oriented to indicate the new margin(s). Direct communication with the pathologist, whenever possible, is of enormous help.

Please refer to ICSI Diagnosis of Breast Disease guideline for information on specific biopsy procedures.

5. Is Cancer Present?

Review the biopsy report and if cancer is present, initiate evaluation of the breast. If the biopsy is negative, refer to the Preventive Services for Adults guideline for follow-up.

7. Evaluation of the Breast

Bilateral mammogram within the past 6 months. Any other breast imaging studies would be at the discretion of the surgeon or radiologist.

8. Is Education Complete?

Review the record to determine if patient education is complete and appropriate for the stage that has been identified as a result of the biopsy and further studies.

10. Consultation(s) as Appropriate

Review the results of the biopsy, staging, education and consultations that were previously done and determine if additional consultations are required.

13. Is Patient a Candidate for Breast Conserving Treatment?

Exclusion criteria for conservation management (outside of clinical trials):

- Diffuse microcalcifications
- Gross multicentric disease or gross multifocal disease
- Lesions > 5 cm
- Inflammatory carcinoma
- Previous significant radiation treatment which included breast in the field
- Pregnancy is a relative contraindication
- Collagen vascular disease including lupus and scleroderma are relative contraindications

Note that exclusion based on age, central lesions, or histologic subtype is not appropriate.

The anticipated cosmetic appearance should be discussed with the patient prior to choosing any surgical option.

Patients with biopsy-proven invasive breast cancer may be eligible for neoadjuvant (pre-surgical) systemic therapy. For selected patients, neoadjuvant chemotherapy may make breast conservation feasible. Neoadjuvant therapy has not been shown to improve survival.

Evidence supporting this recommendation is of classes: A, B, R

14. Does Patient Choose Breast Conserving Treatment?

Breast conserving therapy is defined as excision of the primary tumor and adjacent breast tissue, followed by radiation therapy (XRT) of the whole breast or the breast and regional lymph nodes. Options and potential side effects are reviewed with the patient.

At this time, no subgroups have been defined in which XRT can be omitted. If the patient is on a protocol, then follow the protocol specifics as to the delivery of radiotherapy. Otherwise the following recommendations are made.

If chemotherapy is not to be given, XRT should be started in a timely fashion after conservative surgery is performed (usually within 2-4 weeks). XRT may be delayed if significant seroma is present, if a cellulitis is present, if arm range of motion is still limited, or if incisions are not healed. The best way to integrate XRT and chemotherapy in patients who are to receive both is not yet well defined. The two modalities have been given concurrently, sequentially, or in a sandwich fashion (i.e., chemotherapy both prior to and after XRT). Often all or a portion of chemotherapy is given initially.

Megavoltage XRT is recommended to the whole breast using tangential fields (without bolus) treating to a dose of 4500-5000 cGy (180-200 cGy per fraction) over a 4-1/2 to 5-1/2 week period. This is usually followed by a boost of XRT to the area of the excisional biopsy for an additional 1000 to 2000 cGy. Omission of the boost has been shown to increase risk of local recurrence, even in patients with negative margins.

Placement of surgical clips within the excisional biopsy site is encouraged in order to aid in improving XRT portal localization.

Regional (lymph node) radiotherapy is sometimes performed after breast conserving surgery including a level I/level II axillary lymph node dissection. Regional radiotherapy is controversial but frequently considered for patients with positive axillary lymph nodes, a positive high axillary lymph node, extranodal disease extension, or a large axillary lymph node; or if < 6 lymph nodes were removed from the axilla without the aid of sentinel lymph node biopsy. Regional XRT is never recommended for stage 0 disease.

When done, regional XRT may include the supraclavicular, axillary, and internal mammary areas. If regional radiotherapy is given to the supraclavicular, axillary or internal mammary areas, a dose of 4500 to 5000 cGy over a 4-1/2 to 5-1/2 week period is recommended. Special care must be taken where these fields abut one another and in the tangential breast fields. In the instance where a separate internal mammary field is used a portion of the course should be given with an electron beam. When using deep tangential fields to treat the breast and internal mammary area, care must be taken to limit the amount of heart and lung within the fields.

Evidence supporting this recommendation is of classes: A, C, D, R

15. Does Patient Want Breast Reconstruction?

All patients should be advised about the possibility of breast reconstruction. If the patient is considering reconstruction, a referral to a reconstructive plastic surgeon is indicated. For more information, please refer to Annotation #18, "Mastectomy and Breast Reconstruction."

16. Mastectomy

If only cytologic diagnosis (e.g., FNA specimen) of cancer has been obtained, a core-type biopsy to prove the diagnosis may be considered if there is uncertainty based on cytology before proceeding with mastectomy. For open biopsy, a transverse or obliquely-oriented elliptical incision should be used, encompassing the biopsy skin incision whenever possible. Peripherally located biopsy sites may need to be excised separately. The nipple-areolar complex and all apparent breast tissue should be excised. Tumor involvement of the chest wall must be documented, widely excised and marked with clips to direct postmastectomy XRT.

Literature indicates a role for postoperative XRT in improving locoregional control and survival for certain early stage patients with high risk features (and for patients with stage III disease). These high risk features include positive axillary lymph nodes (especially when ≥ 4 positive lymph nodes are present) pectoralis fascia involvement, primary tumor size ≥ 5 cm in maximal diameter, estrogen

receptor negativity (when present in conjunction with other high risk features), and positive surgical margins. Patients with extranodal disease extension, a positive high axillary lymph node, or a large axillary lymph node have been considered for postmastectomy XRT, although data to support this are lacking.

If a patient is on a protocol which requires postmastectomy XRT, the XRT should be delivered according to the protocol specifics. Otherwise the following recommendations are made.

- Concerning the integration of post-mastectomy XRT and chemotherapy, a specific sequencing recommendation cannot be made. The two modalities have been combined in a number of ways, although often all or a portion of chemotherapy is given initially.
- Megavoltage XRT with a tangential field setup or an electron beam technique is recommended for treatment of the chest wall region itself to a total dose of 4500 to 5000 cGy (180 to 200 cGy per fraction) over a 4-1/2 to 5-1/2 week period. A boost of 1000 to 1500 cGy to the area of the primary site and/or chest wall scar region is also often performed. XRT should be delivered so as to minimize areas of dose non-uniformity within the treatment volume (e.g., use of appropriate energies, wedges, compensators, and tissue bolus) and the volume of lung and heart receiving a significant dose of radiation.
- In addition to chest wall, XRT to the supraclavicular area is usually performed. Consideration must also be given to the need for axillary and internal mammary XRT. The total dose delivered to the regional lymph node areas is approximately 4500 to 5000 cGy over a 4-1/2 to 5-1/2 week period. Special care must be taken in matching the supraclavicular field with the tangential or electron beam chest wall fields. The internal mammary field should be given with at least a portion using an electron beam. In addition, if using deep tangential fields to treat the chest wall and internal mammary area, care must be taken to limit the amount of heart and lung within the fields.

Evidence supporting this recommendation is of classes: A, B, C, D, R

17. Lumpectomy

The abnormality should be excised intact with a small margin of normal breast tissue and careful orientation for the pathologist (see Annotation #4, "Biopsy.") Except in rare and unusual circumstances, additional tissue should be removed so that negative microscopic margins are obtained. If additional tissue cannot be removed, patients with focally positive microscopic margins (defined as ≤ 3 low-powered fields) and without an extensive intraductal component can still be considered for breast conserving treatment. In instances of re-excisional biopsy, a thin margin of skin surrounding the incision and the entire biopsy cavity [if the site of involved margin(s) unknown] should be removed, orienting the specimen to allow the pathologist to define areas of involved resection margins precisely. Four to six metal clips at the base of the lumpectomy site will aid in directing the radiation therapy boost and not adversely affect radiologic follow-up.

Stage 0

Guidelines for lumpectomy for carcinoma in situ are similar to those for invasive cancers requiring all known disease to be removed by clinical, pathologic and radiographic evaluation.

Stage I

With rare exceptions, all T1 tumors can be excised with grossly and microscopically clear margins and acceptable cosmesis if the patient desires lumpectomy. Subareolar tumors usually require excision of the nipple/areolar complex to achieve clear margins.

Stage II

Similarly, adequate tumor clearance and an acceptable cosmetic result can ordinarily be achieved following lumpectomy in patients with larger primary cancers.

Evidence supporting this recommendation is of classes: A, B, C, D

18. Mastectomy and Breast Reconstruction

When immediate reconstruction is to be performed by a reconstructive plastic surgeon, the general surgeon should complete the extirpative procedure without compromising oncologic surgical principles. Skin-sparing mastectomies are appropriate as long as there is an adequate anterior margin around the tumor and the previous biopsy incision is excised with the specimen. Injuries to the neurovascular bundles or fascial planes of the chest wall that are to be utilized in reconstruction should be avoided.

Implants/expander placement or free tissue transfer procedures can be used for immediate reconstruction. Cosmesis will be less satisfactory in patients who will receive post-mastectomy chest wall irradiation.

Evidence supporting this recommendation is of class: C

21. Axillary Staging

A. Axillary Dissection

When axillary dissection is performed as part of a breast conserving operation, the procedure should usually be undertaken through a separate incision, preferably a transverse curvilinear incision within the anterior and posterior axillary folds rather than a vertical incision. In select and unusual cases, a separate incision may not be required. In these cases, the location of the primary tumor permits it to be excised through an incision placed posterior to the anterior axillary line. This same incision can also be used for performing the axillary dissection.

In any axillary dissection, all grossly involved lymph nodes should be excised but the tissues surrounding the axillary vein anteriorly and posteriorly should be left intact to lessen the risk of lymphedema. All tissue caudad to the axillary vein and lateral to the medial border of the pectoralis minor should be excised. Injury or intentional transection of the medial pectoral, long thoracic, and thoracodorsal nerves for improved nodal clearance should be exceedingly rare. At completion of axillary dissection, a closed-system suction drainage catheter should be placed.

Axillary dissection includes Level I and Level II lymph node regions. The surgeon is advised to remove all grossly evident disease if possible. Lymph nodes fixed to one another or other structures are classified as N2 disease, making the tumor Stage III or greater. These findings should be included in the operative report.

Stage 0

Axillary dissection is not usually necessary for intraductal carcinoma in situ (DCIS). However, in large (> 2.5 cm) non-invasive carcinoma, especially those with comedocarcinoma features or palpable lesions, invasive foci may be present. Consideration of axillary nodal sampling or partial axillary dissection should be given in these instances.

Stage I

Axillary sampling or dissection is routinely performed for clinical Stage I cancers primarily for staging purposes. In rare instances of small low grade cancers (i.e., tubular carcinoma < 1 cm), particularly in elderly or debilitated patients with a benign axillary exam, axillary staging may be omitted.

Stage II

Axillary sampling or dissection is routinely performed for Stage II breast cancers for staging the disease and regional control of tumor.

Evidence supporting this recommendation is of classes: C, R

B. Sentinel Lymph Node Biopsy

In sentinel lymph node biopsy (SLNB), blue dye and/or a radioactive isotope is injected into the area of the tumor. The first draining lymph nodes are identified and evaluated for the presence of metastases. If the sentinel nodes are free of cancer, additional lymph node removal may be avoided.

This approach requires a multidisciplinary team including surgeons, radiologists, pathologists, and oncologists with the experience and resources to perform the procedure and interpret results appropriately.

Numerous prospective validation studies confirm the accuracy of sentinel node biopsy in staging the axilla. Long-term survival data are not yet available.

Traditionally, axillary dissection has been the standard of practice. However, given the increasing experience and awareness of SLNB, with adequate experience and documentation of results it is becoming more widely accepted in medical practice. SLNB is appropriate for patients with a clinically negative axilla.

For more information about sentinel lymph node biopsy, please refer to ICSI Technology Assessment #45, "Lymphatic Mapping with Sentinel Lymph Node Biopsy for Breast Cancer."

Evidence supporting this recommendation is of classes: C, R

22. Is Staging Evaluation Complete?

Pathologic report recommendations:

- Tumor size
- Margin status
- Node number and involvement, and presence of extracapsular extension.
- Proportion of invasive and in situ component to determine presence of extensive intraductal component (EIC)
- Histologic grade (in report, indicate grading system utilized)
- Nuclear grade (in report, indicate grading system utilized)
- Histologic subtype
- Presence of multifocal disease
 - gross and microscopic

- Presence of lymphatic or vascular invasion
- Presence of necrosis
- Estrogen receptor (ER)/progesterone receptor (PR) status

Note: S phase fraction, ploidy, oncogene expression, and other potential prognostic factors remain investigational at this time, and therefore should not be included in a standard report, nor used to predict prognosis or direct therapy. HER2 analysis may be considered for patients to determine clinical trial eligibility.

American Joint Committee on Cancer 11

TNM Classification:

Primary tumor (T)

TX – Primary tumor cannot be assessed

T0 – No evidence of primary tumor

TIS – Carcinoma in situ: I

T1 – Tumor 2 cm or less in greatest dimension

T2 – Tumor more than 2 cm but not more than 5 cm in greatest dimension

T3 – Tumor more than 5 cm in greatest dimension

Regional lymph nodes (N): Clinical classification:

NX – Regional lymph nodes cannot be assessed (e.g., previously removed)

N0 – No regional lymph node metastases

N1 – Metastasis to movable ipsilateral axillary lymph node(s)

Regional lymph nodes: Clinical classifications

Pathologic classification (pN) – Classification is based upon axillary lymph node dissection (ALND) with or without sentinel lymph node dissection (SLND). Classification based solely on SLND without ALND should be designated (sn) [e.g., pN0 (i +) (sn)]

PNX – Regional lymph nodes cannot be assessed

pN0 – No regional lymph node metastasis

- pN0 (i -) – No histologic nodal metastases, and negative by immunohistochemistry (IHC)
- pN0 (i +) – No histologic nodal metastases but positive by IHC, with no cluster greater than 0.2 mm in diameter
- pN0 (mol -) – No histologic nodal metastases and negative molecular findings (by reverse transcriptase polymerase chain reaction, RT-PCR)
- pN0 (mol +) – No histologic nodal metastases, but positive molecular findings (by RT-PCR)

pN1 – Metastasis in 1 to 3 ipsilateral axillary lymph node(s) and/or in internal mammary nodes with microscopic disease detected by SLND but not clinically apparent

- pN1mi – Micrometastasis (greater than 0.2 mm, none greater than 2.0 mm)
- pN1a – Metastasis in 1 to 3 axillary lymph nodes
- pN1b – Metastasis to internal mammary lymph nodes with microscopic disease detected by SLND but not clinically apparent
- pN1c – Metastasis in 1 to 3 ipsilateral axillary lymph node(s) and in internal mammary nodes with microscopic disease detected by SLND but not clinically apparent. If associated with more than 3 positive axillary nodes, the internal mammary nodes are classified as N3b to reflect increased tumor burden.

STAGE GROUPINGS

Stage 0 – TIS N0 M0

Stage I – T1 N0 M0 (including T1mic)

Stage IIA – T0 N1 M0; T1 N1 M0 (including T1mic); T2 N0 M0

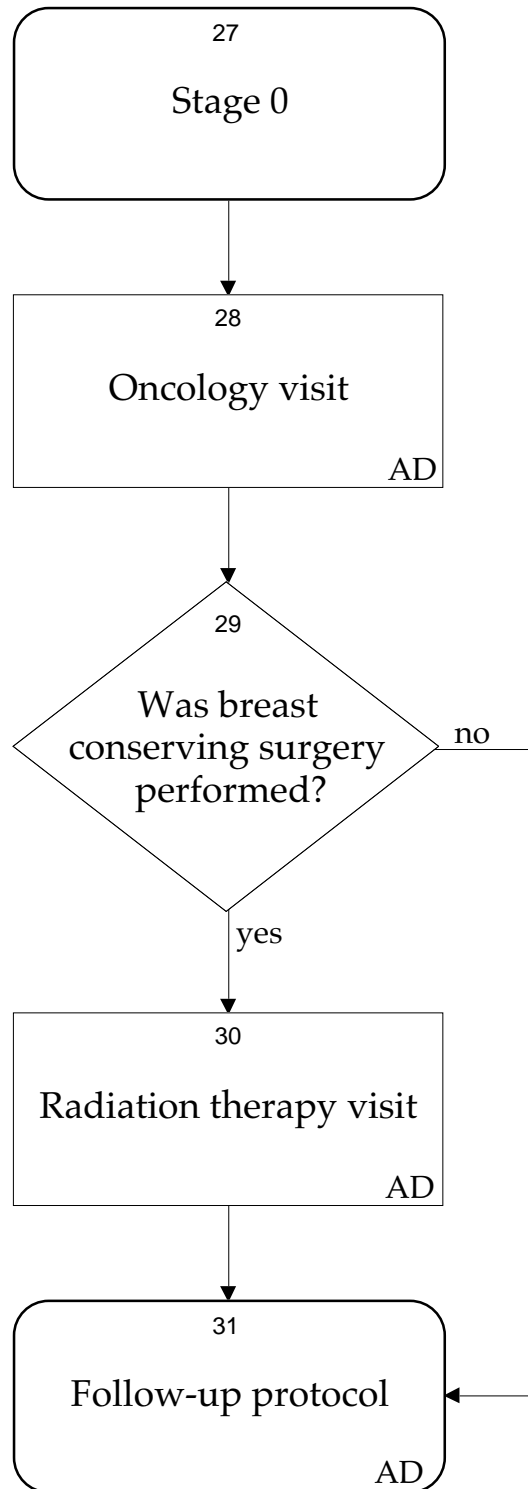
Stage IIB – T2 N1 M0; T3 N0 M0

Invasive Cancer Only

- Liver profile including alkaline phosphatase
- Chest x-ray (optional for Stage I and II patients)
- CBC

A bone scan is not routinely indicated unless the patient has:

- increased alkaline phosphatase
- history of bone pain



A = Annotation
D = Discussion

STAGE 0 POST SURGICAL TREATMENT ALGORITHM ANNOTATIONS

(Excludes lobular carcinoma in situ.)

28. Oncology Visit

- Review predicted risk of recurrence
- Adjuvant chemotherapy is not advised for Stage 0
- Consider tamoxifen
- Encourage clinical trial participation

30. Radiation Therapy Visit

Breast XRT following breast conserving surgery has been shown by randomized prospective data to improve local control in all subgroups identified. However, no difference in survival has been observed. If the patient is on a protocol, then follow the protocol specifics as to the delivery of radiotherapy. Otherwise the following recommendations are made.

Breast XRT should be started in a timely fashion after conservative surgery is performed (usually within 2-4 weeks). XRT may be delayed if significant seroma is present, if a cellulitis is present, if arm range of motion is still limited, or if incisions are not healed.

Megavoltage XRT is recommended to the whole breast using tangential fields (without bolus) treating to a dose of 4500-5000 cGy (180-200 cGy per fraction) over a 4-1/2 to 5-1/2 week period. This is usually followed by a boost of XRT to the area of the excisional biopsy for an additional 1000 to 2000 cGy. Omission of the boost may be associated with an increased risk of local recurrence, even in patients with negative margins.

Placement of surgical clips within the excisional biopsy site is encouraged in order to aid in improving XRT portal localization.

Although breast XRT is recommended for Stage 0 disease, regional XRT (to lymph node areas) is not.

Evidence supporting this recommendation is of classes: A, C, D

31. Follow-Up Protocol

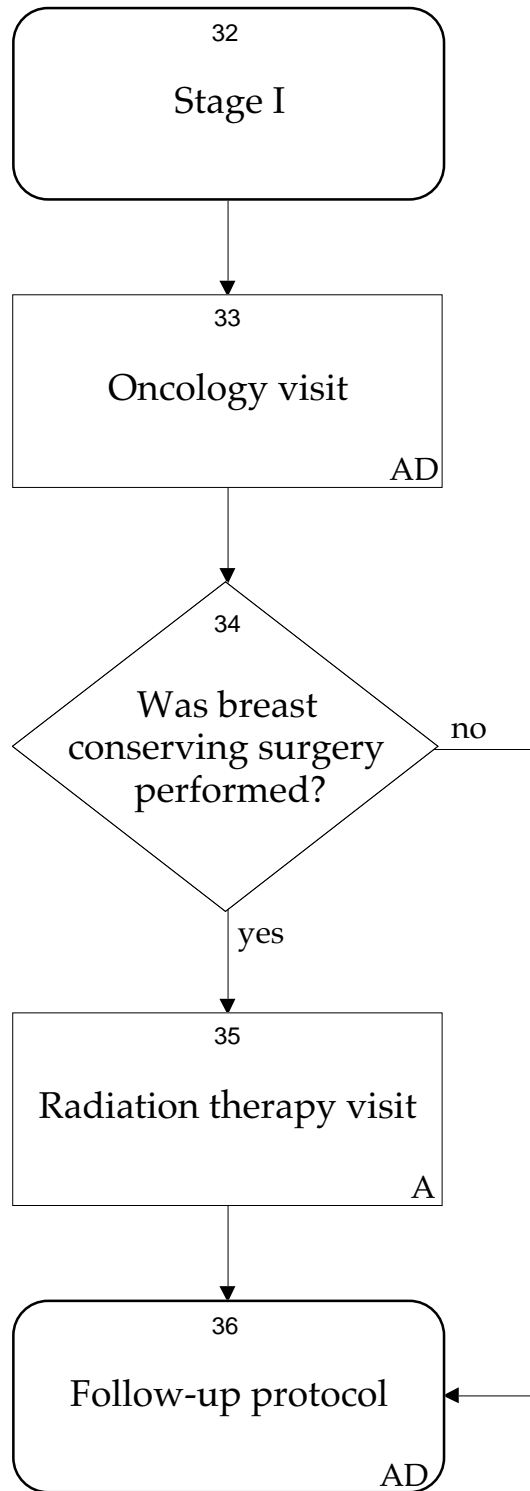
The guideline for follow-up refers only to the asymptomatic patient. New or persistent symptoms must be evaluated using whatever diagnostic studies are appropriate.

Use of chest x-rays, serum chemistries, bone scans, and soluble markers are not indicated for routine follow-up of patients with Stage 0 breast cancer. Patients who have Stage 0 breast cancer should be followed with yearly mammography. Clinical breast examination should be performed every 3-4 months for two years then every 6 months for 3 more years in patients with Stage 0 breast cancer.

[Conclusion Grade I: See Discussion Appendix A, Conclusion Grading Worksheet – Annotation #31 (Stage 0)]

Patients taking tamoxifen should have annual eye exams due to increased risk of cataracts and annual pap and pelvic exams due to risk of endometrial carcinoma.

Stage I Post Surgical Treatment Algorithm



A = Annotation
D = Discussion

STAGE I POST SURGICAL TREATMENT ALGORITHM ANNOTATIONS

33. Oncology Visit

- Review predicted risk of recurrence.
- Encourage clinical trial participation.
- Determine need for adjuvant therapy on individual case basis.
 - Characteristics to consider:
 - pathologic prognostic factors predictive of less favorable outcome such as tumor size, high histologic grade, high nuclear grade, presence of lymphatic or vascular invasion.
 - overall health status
 - menopausal status
 - patient preferences
 - receptor status

- Coordinate all therapeutic plans with radiation therapy for patients electing breast-conserving surgery.

- Patient education about risks and benefits of chemotherapy and adjuvant therapy.

- Treatment options:

ER+ or PR+ Tamoxifen 20 mg daily for 5 years* + Chemotherapy**

ER- and PR- Chemotherapy** or observation

* Anastrozole can be considered in place of tamoxifen in post-menopausal women, especially those who may have contraindications to tamoxifen such as history of deep vein thrombosis (DVT), pulmonary embolism (PE) and stroke. Long-term data on benefits/risks of anastrozole are not yet available.

** NOTE: Chemotherapy may be advised as a treatment option for women of any age depending upon their overall health status and life expectancy, although minimal data are available on its advantages for women > age 70. Risk may be sufficiently low in some patients that chemotherapy would not be of benefit.

Chemotherapy should be administered by experienced physicians and/or personnel using established chemotherapy protocols and guidelines for dosage modifications.

Currently accepted chemotherapeutic regimens in node-negative breast cancer include:

- Doxorubicin/cyclophosphamide x 4 cycles
- Cyclophosphamide/doxorubicin/5 fluorouracil x 6 cycles
- Cyclophosphamide/methotrexate/5 fluorouracil x 6 cycles

Evidence supporting this recommendation is of classes: A, M

35. Radiation Therapy Visit

At this time, no subgroups have been defined in which XRT therapy can be omitted following breast-conserving surgery. If the patient is on a protocol, then follow the protocol specifics as to the delivery of radiotherapy. Otherwise the following recommendations are made:

- If chemotherapy is not to be given, XRT should be started in a timely fashion after conservative surgery is performed (usually within 2-4 weeks). XRT may be delayed if significant seroma is present, if a cellulitis is present, if arm range of motion is still limited, or if incisions are not healed. The best way to integrate XRT and chemotherapy in patients who are to receive both is not yet well defined. The two modalities have been given concurrently, sequentially, or in a sandwich fashion (i.e., chemotherapy both prior to and after XRT). Often all or a portion of chemotherapy is given prior to XRT.
- Megavoltage XRT is recommended to the whole breast using tangential fields (without bolus) treating to a dose of 4500-5000 cGy (180-200 cGy per fraction) over a 4-1/2 to 5-1/2 week period. This is usually followed by a boost of XRT to the area of the excisional biopsy for an additional 1000 to 2000 cGy. Omission of the boost has been shown to increase the risk of local recurrence, even in patients with negative margins.
- Placement of surgical clips within the excisional biopsy site is encouraged in order to aid in improving XRT portal localization.
- Regional (lymph node) radiotherapy is not recommended for Stage I patients after conservative surgery including a Level I/Level II axillary lymph node dissection or a SLNB.

Supraclavicular area ± axillary area XRT is controversial in patients with more limited axillary dissection, i.e. if < 6 lymph nodes were removed from the axilla without the aid of SLNB. If regional XRT is given to the supraclavicular area ± axillary, a dose of 4500–5000 cGy over a 4-1/2 to 5-1/2 week period is recommended. Special care must be taken in matching the supraclavicular field with the tangential breast fields.

36. Follow-Up Protocol

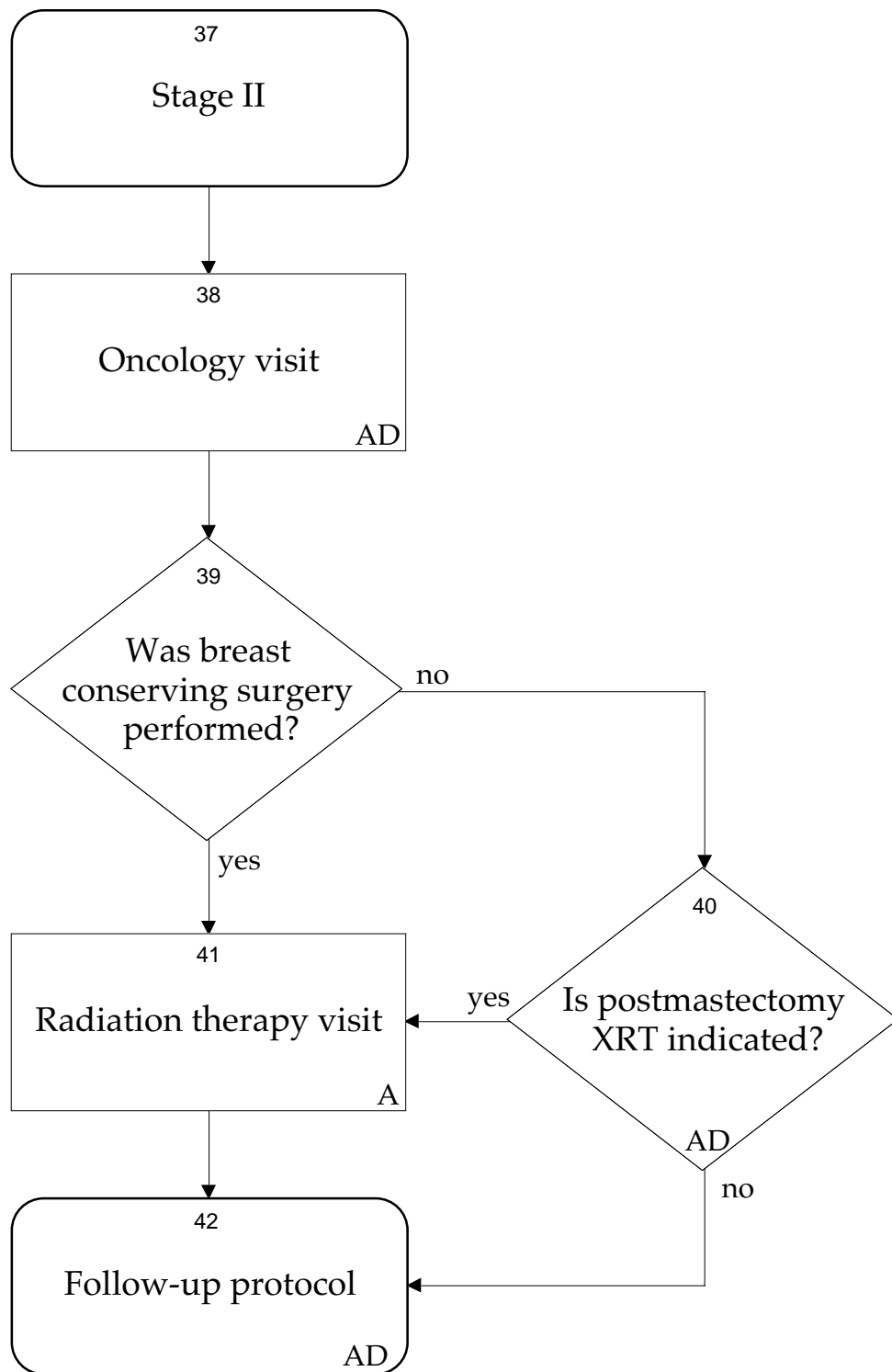
This guideline for follow-up refers only to the asymptomatic patient. New or persistent symptoms must be evaluated using whatever diagnostic studies are appropriate.

The use of chest x-rays, serum chemistries, bone scans, and soluble tumor markers are not indicated for the routine follow-up of patients with Stage I breast cancer and are not recommended outside of clinical trials.

Patients who have Stage I breast cancer should be followed with yearly mammography. Clinical breast examination should be performed every 3-4 months for 2 years, then every 6 months for 3 more years. Thereafter, medical care should be rendered according to routine health recommendations.

[Conclusion Grade I: See Discussion Appendix A, Conclusion Grading Worksheet – Annotation #36 (Stage I)]

Patients taking tamoxifen should have annual eye exams due to increased risk of cataracts and annual pap and pelvic exams due to increased risk of endometrial carcinoma. A baseline bone density should be considered for patients taking anastrozole and thereafter as indicated due to an increased risk of osteoporosis.



A = Annotation
D = Discussion

STAGE II POST SURGICAL TREATMENT ALGORITHM ANNOTATIONS

38. Oncology Visit

- Review predicted risk of recurrence.
- Encourage clinical trial participation.
- High dose chemotherapy with autologous stem cell or bone marrow support should not be used as part of the treatment of Stage II breast cancer outside participation in a randomized clinical trial.
- Coordinate all therapeutic plans with radiation therapy for patients following breast conserving therapy, as well as for those patients for whom post-mastectomy XRT needs to be considered.
- Patient education about risks and benefits of chemotherapy and adjuvant therapy.
- Treatment options

ER⁺ or PR⁺ Chemotherapy* + Tamoxifen 20 mg daily for 5 years**

ER⁻ and PR⁻ Chemotherapy* or observation

* NOTE: Chemotherapy may be advised as a treatment option for women of any age depending upon their overall health status and life expectancy, although minimal data are available on its advantages for women > age 70.

Chemotherapy should be administered by experienced physicians and/or personnel using established chemotherapy protocols and guidelines for dosage modifications.

** Anastrozole can be considered in place of tamoxifen in post-menopausal women, especially those who may have contraindications to tamoxifen such as history of DVT, PE and stroke. Long-term data on benefits/risks of anastrozole are not yet available.

- Currently accepted chemotherapeutic regimens outside of clinical trials include:
 - Cyclophosphamide/methotrexate/5 fluorouracil x 6 cycles
 - Cyclophosphamide/doxorubicin/5 fluorouracil x 6 cycles
 - Doxorubicin/cyclophosphamide x 4 cycles
 - Doxorubicin x 4 cycles followed by cyclophosphamide/methotrexate/5 fluorouracil x 8 cycles
 - Doxorubicin/cyclophosphamide x 4 cycles, followed by 4 cycles of paclitaxel or docetaxel
 - Cyclophosphamide/epirubicin/5 fluorouracil x 6 cycles

Evidence supporting this recommendation is of classes: **A, M**

40. Is Postmastectomy XRT Indicated?

Literature indicates a role for postmastectomy XRT in improving locoregional control and survival for certain early stage patients with high risk features (and for patients with Stage III disease). These high-risk features include positive axillary lymph nodes (especially when ≥ 4 positive lymph nodes are present) pectoralis fascia involvement, primary tumor size ≥ 5 cm in maximal diameter, estrogen receptor negativity (when present in conjunction with other high-risk features), and positive surgical

margins. Patients with extranodal disease extension, a positive high axillary lymph node, or a large axillary lymph node have been considered for postmastectomy XRT, although data to support this are lacking.

Evidence supporting this recommendation is of class: A

41. Radiation Therapy Visit

At this time, no subgroups have been defined in which XRT therapy can be omitted following breast-conserving therapy. If the patient is on a protocol, then follow the protocol specifics as to the delivery of radiotherapy. Otherwise the following recommendations are made:

If chemotherapy is not to be given, XRT should be started in a timely fashion after conservative surgery is performed (usually within 2-4 weeks). XRT may be delayed if significant seroma is present, if a cellulitis is present, if arm range of motion is still limited, or if incisions are not healed. The best way to integrate XRT and chemotherapy in patients who are to receive both is not yet well defined. The two modalities have been given concurrently, sequentially, or in a sandwich fashion (i.e., chemotherapy both prior to and after XRT). Often all or a portion of chemotherapy is given initially.

Megavoltage XRT is recommended to the whole breast using tangential fields (without bolus) treating to a dose of 4500-5000 cGy (180-200 cGy per fraction) over a 4-1/2 to 5-1/2 week period. This is usually followed by a boost of XRT to the area of the excisional biopsy for an additional 1000 to 2000 cGy. Omission of the boost has been shown to increase the risk of local recurrence, even in patients with negative margins.

Placement of surgical clips within the excisional biopsy site is encouraged in order to aid in improving XRT portal localization.

Regional (lymph node) radiotherapy is sometimes performed after breast conserving surgery including a level I/level II axillary lymph node dissection. Regional radiotherapy is controversial but frequently considered for patients with positive axillary lymph nodes, a positive high axillary lymph node, extranodal disease extension, or a large axillary lymph node, or if < 6 lymph nodes were removed from the axilla without the aid of SLNB. When done, regional XRT may include the supraclavicular, axillary, and internal mammary area. If regional radiotherapy is given to the supraclavicular, axillary or internal mammary areas, a dose of 4500 to 5000 cGy over a 4 1/2 to 5 1/2 week period is recommended. Special care must be taken where these fields abut one another and the tangential breast fields. In the instance where a separate internal mammary field is used, a portion of the course should be given with an electron beam. When using deep tangential fields to treat the breast and internal mammary area, care must be taken to limit the amount of heart and lung within the fields.

Post Mastectomy Radiation Therapy

If a patient is on a protocol which requires post-mastectomy XRT, the XRT should be delivered according to the protocol specifics. Otherwise the following recommendations are made.

- Concerning the integration of post-mastectomy XRT and chemotherapy, a specific sequencing recommendation cannot be made. The two modalities have been combined in a number of ways, although often all or a portion of chemotherapy is given initially.
- Megavoltage XRT with a tangential field setup or an electron beam technique is recommended for treatment of the chest wall region itself to a total dose of 4500 to 5000 cGy (180 to 200 cGy per fraction) over a 4-1/2 to 5-1/2 week period. A boost of 1000 to 1500 cGy to the area of the primary site and/or chest wall scar region is also often performed. XRT should be delivered so as to minimize areas of dose non-uniformity within the treatment

volume (e.g., use of appropriate energies, wedges, compensators, and tissue bolus) and the volume of lung and heart receiving a significant dose of radiation.

- In addition to chest wall, XRT to the supraclavicular area is usually performed. Consideration must also be given to the need for axillary and internal mammary XRT. The total dose delivered to the regional lymph node areas is approximately 4500 to 5000 cGy over a 4-1/2 to 5-1/2 week period. Special care must be taken in matching the supraclavicular field with the tangential or electron beam chest wall fields. The internal mammary field should be given with at least a portion using an electron beam. In addition, if using deep tangential fields to treat the chest wall and internal mammary area, care must be taken to limit the amount of heart and lung within the fields.

42. Follow-Up Protocol

This guideline for follow-up refers only to the asymptomatic patient. New or persistent symptoms must be evaluated using whatever diagnostic studies are appropriate.

The use of chest x-rays, serum chemistries, bone scans, and soluble tumor markers are not indicated for the routine follow-up of patients with Stage II breast cancer and are not recommended outside of clinical trials.

Patients who have Stage II breast cancer should be followed with yearly mammography. Clinical breast examination should be performed every 3-4 months for 2 years, then every 6 months for 3 more years. Thereafter, medical care should be rendered according to routine health recommendations.

[Conclusion Grade I: See Discussion Appendix A, Conclusion Grading Worksheet – Annotation #42 (Stage II)]

Patients taking tamoxifen should have annual eye exams due to increased risk of cataracts and annual pap and pelvic exams due to increased risk of endometrial and carcinoma. A baseline bone density should be considered for patients taking anastrozole and thereafter as indicated, due to an increased risk of osteoporosis.



INSTITUTE FOR CLINICAL
SYSTEMS IMPROVEMENT

Discussion and References: Breast Cancer Treatment

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Discussion and References – Disclosure of Potential Conflict of Interest

Breast Cancer Treatment

In the interest of full disclosure, ICSI has adopted a policy of revealing relationships work group members have with companies that sell products or services that are relevant to this guideline topic. It is not assumed that these financial interests will have an adverse impact on guideline content. They simply are noted here to fully inform users of the guideline.

All work group members: none declared.

Discussion and References – Evidence Grading

I. CLASSES OF RESEARCH REPORTS

A. Primary Reports of New Data Collection:

- Class A: Randomized, controlled trial
- Class B: Cohort study
- Class C: Non-randomized trial with concurrent or historical controls
Case-control study
Study of sensitivity and specificity of a diagnostic test
Population-based descriptive study
- Class D: Cross-sectional study
Case series
Case report

B. Reports that Synthesize or Reflect upon Collections of Primary Reports:

- Class M: Meta-analysis
Systematic review
Decision analysis
Cost-effectiveness analysis
- Class R: Consensus statement
Consensus report
Narrative review
- Class X: Medical opinion

II. CONCLUSION GRADES

Key conclusions (as determined by the work group) are supported by a conclusion grading worksheet that summarizes the important studies pertaining to the conclusion. Individual studies are classed according to the system defined in Section I, above, and are assigned a designator of +, -, or \emptyset to reflect the study quality. Conclusion grades are determined by the work group based on the following definitions:

Grade I: The evidence consists of results from studies of strong design for answering the question addressed. The results are both clinically important and consistent with minor exceptions at most. The results are free of any significant doubts about generalizability, bias, and flaws in research design. Studies with negative results have sufficiently large samples to have adequate statistical power.

Grade II: The evidence consists of results from studies of strong design for answering the question addressed, but there is some uncertainty attached to the conclusion because of inconsistencies among the results from the studies or because of minor doubts about generalizability, bias, research design flaws, or adequacy of sample size. Alternatively, the evidence consists solely of results from weaker designs for the question addressed, but the results have been confirmed in separate studies and are consistent with minor exceptions at most.

Grade III: The evidence consists of results from studies of strong design for answering the question addressed, but there is substantial uncertainty attached to the conclusion because of inconsistencies among the results from different studies or because of serious doubts about generalizability, bias, research design flaws, or adequacy of sample size. Alternatively, the

Discussion and References – Evidence Grading (cont)

evidence consists solely of results from a limited number of studies of weak design for answering the question addressed.

Grade Not Assignable: There is no evidence available that directly supports or refutes the conclusion.

The symbols +, –, ø, and N/A found on the conclusion grading worksheets are used to designate the quality of the primary research reports and systematic reviews:

+ indicates that the report or review has clearly addressed issues of inclusion/exclusion, bias, generalizability, and data collection and analysis;

– indicates that these issues have not been adequately addressed;

ø indicates that the report or review is neither exceptionally strong or exceptionally weak;

N/A indicates that the report is not a primary reference or a systematic review and therefore the quality has not been assessed.

PREAMBLE

This guideline emphasizes the need for patient education and counseling through multidisciplinary consultation to assure patient access to all appropriate treatment options, particularly surgical options. The guideline defines specific pathologic information required for an adequate pathology report and further recommends that certain commonly applied but unproven prognostic factors should not be used. The guideline recommends a specific follow-up schedule and recommends against the use of more frequent visits and against the use of unnecessary laboratory and radiographic testing, particularly the commonly used but unproven serum tumor markers.

The work group realizes that clinical practice for the care and follow-up of patients with breast cancer at present has been based upon previous expectations of appropriateness. Newer evidence suggests that some of these studies have not yet resulted in benefit to populations of women with breast cancer. This guideline represents our identification of the best possible care based on current literature. The group also recognizes that current expectations of patients and physicians have been conditioned by these previous expectations and that education of these groups regarding the evidence surrounding this guideline is necessary and that some time may be necessary for these groups to come into compliance with the guideline.

MAIN TREATMENT ALGORITHM DISCUSSION AND REFERENCES

2. Education Regarding Options

Goldhirsch A, Glick JH, Gelber RD, et al. "Meeting highlights: international consensus panel on the treatment of primary breast cancer." *J Clin Oncol* 19:3817-27, 2001. (Class R)

NIH Consensus Conference. "Treatment of early-stage breast cancer." *JAMA* 265:391-95, 1991. (Class R)

13. Is Patient a Candidate for Breast-Conserving Treatment?

Fisher B, Anderson S, Bryant J, et al. "Twenty-year follow-up of a randomized trial comparing total mastectomy, lumpectomy, and lumpectomy plus irradiation for the treatment of invasive breast cancer." *N Engl J Med* 347:1233, 2002. (Class A)

Fisher B, Dignam J, Wolmark N, et al. "Lumpectomy and radiation therapy for the treatment of intraductal breast cancer: findings from national surgical adjuvant breast and bowel project B-17." *J Clin Oncol* 16:441-52, 1998. (Class A)

Hartsell WF, Recine DC, Griem KL, et al. "Should multicentric disease be an absolute contraindication to the use of breast-conserving therapy?" *Int J Radiat Oncol Biol Phys* 30:49-53, 1994. (Class B)

Kurtz JM, Jacquemier J, Amalric R, et al. "Breast-conserving therapy for macroscopically multiple cancers." *Ann Surg* 212:38-44, 1990. (Class B)

Leopold KA, Recht A, Schnitt SJ, et al. "Results of conservative surgery and radiation therapy for multiple synchronous cancers of one breast." *Int J Radiat Oncol Biol Phys* 16:11-16, 1989. (Class B)

NIH Consensus Conference. "Treatment of early-stage breast cancer." *JAMA* 265:391-95, 1991. (Class R)

Schwartz GF, Solin LJ, Olivotto IA, et al. "Consensus conference on the treatment of in situ ductal carcinoma of the breast, April 22-25, 1999." *Cancer* 88:946-54, 2000. (Class R)

van Dongen JA, Voogd AC, Fentiman IS, et al. "Long-term results of a randomized trial comparing breast-conserving therapy with mastectomy: European Organization for Research and Treatment of Cancer 10801 trial." *J Natl Cancer Inst* 92:1143-50, 2000. (Class A)

Veronesi U, Cascinelli N, Mariani L, et al. "Twenty-year follow-up of a randomized study comparing breast-conserving surgery with radical mastectomy for early breast cancer." *N Engl J Med* 347:1227, 2002. (Class A)

Wilson LD, Beinfeld M, McKhann CF, et al. "Conservative surgery and radiation in the treatment of synchronous ipsilateral breast cancers." *Cancer* 72:137-42, 1993. (Class B)

14. Does Patient Choose Breast-Conserving Treatment?

Randomized, prospective studies addressing the possible omission of XRT after lumpectomy in patients with invasive breast cancer that is ≤ 1 cm in dimension or with intraductal cancer are in progress.

Breast-conserving therapy is an appropriate method of primary therapy for the majority of women with Stage I and II breast cancer. It provides survival equivalent to total mastectomy and axillary dissection while preserving the breast.

NIH Consensus Conference. "Treatment of early-stage breast cancer." *JAMA* 265:391-95, 1991. (Class R)

One retrospective analysis suggests that a delay of up to 8 weeks between the last breast surgery and the start of XRT is not associated with an increased risk of recurrence.

Chemotherapy and XRT have been given concurrently, sequentially, or in a sandwich fashion (i.e., chemotherapy both prior to and after XRT). Several multi-institutional clinical trials including NSABP B25, SWOG 9313 and ECOG 2190 complete chemotherapy prior to beginning XRT. Some retrospective studies have suggested an increased risk of breast cancer recurrence when the delay in starting XRT is more than four months, although whether this risk outweighs the concern about possible increased systemic risk from a delay in chemotherapy remains a controversial issue. One randomized prospective trial suggested that for patients with substantial risk for systemic metastasis, chemotherapy followed by XRT is preferable.

There is no correlation between the type of XRT boost used (x-ray, electron beam, or implant) and the risk of breast cancer recurrence. XRT should be delivered so as to minimize areas of dose non-uniformity within the treatment volume (e.g., use of appropriate energies, wedges, or compensators) and the volume of heart and lung receiving a significant dose of radiation.

Bartelink H, Heriot J-C, Poortmans P, et al. "Recurrence rates after treatment of breast cancer with standard radiotherapy with or without additional radiation." *N Engl J Med* 345:1378-86, 2001. (Class A)

Bedwinek J. "Breast-conserving surgery and irradiation: the importance of demarcating the excision cavity with surgical clips." *Int J Radiat Oncol Biol Phys* 26:675-79, 1993. (Class D)

Fein DA, Fowble BL, Hanlon AL, et al. "Does the placement of surgical clips within the excision cavity influence local control for patients treated with breast-conserving surgery and irradiation?" *Int J Radiat Oncol Biol Phys* 34:1009-17, 1996. (Class C)

Fisher B, Bryant J, Dignam J, et al. "Tamoxifen, radiation therapy, or both for prevention of ipsilateral breast tumor recurrence after lumpectomy in women with invasive breast cancers of one centimeter or less." *J Clin Oncol* 20:4141-49, 2002. (Class A)

Lichter AS, Lippman ME, Danforth DN Jr, et al. "Mastectomy versus breast-conserving therapy in the treatment of stage I and II carcinoma of the breast: a randomized trial at the National Cancer Institute." *J Clin Oncol* 10:976-83, 1992. (Class A)

Recht A, Come SE, Henderson IC, et al. "The sequencing of chemotherapy and radiation therapy after conservative surgery for early-stage breast cancer." *N Engl J Med* 334:1356-61, 1996. (Class A)

Recht A, Pierce SM, Abner A, et al. "Regional nodal failure after conservative surgery and radiotherapy for early-stage breast carcinoma." *J Clin Oncol* 9:988-96, 1991. (Class C)

Romestaing P, Lehingue Y, Carrie C, et al. "Role of a 10-Gy boost in the conservative treatment of early breast cancer: results of a randomized clinical trial in Lyon, France." *J Clin Oncol* 15:963-68, 1997. (Class A)

16. Mastectomy

Fowble B, Gray R, Gilchrist K, et al. "Identification of a subgroup of patients with breast cancer and histologically positive axillary nodes receiving adjuvant chemotherapy who may benefit from postoperative radiotherapy." *J Clin Oncol* 6:1107-17, 1988. (Class D)

Griem KL, Henderson IC, Gelman R, et al. "The 5-year results of a randomized trial of adjuvant radiation therapy after chemotherapy in breast cancer patients treated with mastectomy." *J Clin Oncol* 5:1546-55, 1987. (Class A)

Katz A, Strom EA, Buchholz TA, et al. "The influence of pathologic tumor characteristics on locoregional recurrence rates following mastectomy." *Int J Radiat Oncol Biol Phys* 50:735-42, 2001. (Class B)

Overgaard M, Hansen PS, Overgaard J, et al. "Postoperative radiotherapy in high-risk premenopausal women with breast cancer who receive adjuvant chemotherapy." *N Engl J Med* 337:949-55, 1997. (Class A)

Overgaard M, Jensen M-B, Overgaard J, et al. "Postoperative radiotherapy in high-risk postmenopausal breast-cancer patients given adjuvant tamoxifen: Danish Breast Cancer Cooperative Group DBCG 82c randomised trial." *Lancet* 353:1641-48, 1999. (Class A)

Ragaz J, Jackson SM, Le N, et al. "Adjuvant radiotherapy and chemotherapy in node-positive premenopausal women with breast cancer." *N Engl J Med* 337:956-62, 1997. (Class A)

Recht A, Edge SB, Solin LJ, et al. "Postmastectomy radiotherapy: clinical practice guidelines of the American Society of Clinical Oncology." *J Clin Oncol* 19:1539-69, 2001. (Class R)

Sykes HF, Sim DA, Wong CJ, et al. "Local-regional recurrence in breast cancer after mastectomy and adriamycin-based adjuvant chemotherapy: evaluation of the role of postoperative radiotherapy." *Int J Radiat Oncol Biol Phys* 16:641-47, 1989. (Class C)

Uematsu M, Bornstein BA, Recht A, et al. "Long-term results of post-operative radiation therapy following mastectomy with or without chemotherapy in stage I-III breast cancer." *Int J Radiat Oncol Biol Phys* 25:765-70, 1993. (Class C)

17. Lumpectomy

Fisher B, Anderson S, Bryant J, et al. "Twenty-year follow-up of a randomized trial comparing total mastectomy, lumpectomy, and lumpectomy plus irradiation for the treatment of invasive breast cancer." *N Engl J Med* 347:1233, 2002. (Class A)

Freedman G, Fowble B, Hanlon A, et al. "Patients with early stage invasive cancer with close or positive margins treated with conservative surgery and radiation have an increased risk of breast recurrence that is delayed by adjuvant systemic therapy." *Int J Radiat Oncol Biol Phys* 44:1005-15, 1999. (Class C)

Gage I, Schnitt SJ, Nixon AJ, et al. "Pathologic margin involvement and the risk of recurrence in patients treated with breast-conserving therapy." *Cancer* 78:1921-28, 1996. (Class D)

Park CC, Mitsumori M, Nixon A, et al. "Outcome at 8 years after breast-conserving surgery and radiation therapy for invasive breast cancer: influence of margin status and systemic therapy on local recurrence." *J Clin Oncol* 18:1668-75, 2000. (Class B)

Peterson ME, Schultz DJ, Reynolds C, et al. "Outcomes in breast cancer patients relative to margin status after treatment with breast-conserving surgery and radiation therapy: the University of Pennsylvania experience." *Int J Radiat Oncol Biol Phys* 43:1029-35, 1999. (Class C)

Schnitt SJ, Connolly JL, Harris JR, et al. "Pathologic predictors of early local recurrence in stage I and II breast cancer treated by primary radiation therapy." *Cancer* 53:1049-57, 1984. (Class D)

18. Mastectomy and Breast Reconstruction

Williams JK, Carlson GW, Bostwick J, et al. "The effects of radiation treatment after TRAM flap breast reconstruction." *Plast Reconstr Surg* 100:1153-60, 1997. (Class C)

21. Axillary Staging

Please refer to the study of lymphatic mapping with sentinel node biopsy completed by the ICSI Technology Assessment Committee for further discussion of this technology.

American Joint Committee on Cancer. Cancer Staging Manual. 6th ed, Greene FL, Pagepl, Fleming ID, et al. (Eds), Springer-Verlag, New York, p223-40, 2002. (Class R)

Giuliano AE, Kirgan DM, Guenther JM, Morton DI. "Lymphatic mapping and sentinel lymphadenectomy for breast cancer." *Ann Surg* 220:391-8; discussion 398-401, 1994. (Class C)

Hill ADK, Tran KN, Akhurst T, et al. "Lessons learned from 500 cases of lymphatic mapping for breast cancer." *Ann Surg* 229:528-35, 1999. (Class C)

Institute for Clinical Systems Improvement. "Technology Assessment: Lymphatic mapping with sentinel lymph node biopsy for breast cancer." TA #45. October 1998. ICSI (Class R)

Krag D, Weaver D, Ashikaga T, et al. "The sentinel node in breast cancer: a multicenter validation study." *N Engl J Med* 339:941-46, 1998. (Class C)

McMasters KM, Tuttle TM, Carlson DJ, et al. "Sentinel lymph node biopsy for breast cancer: a suitable alternative to routine axillary dissection in multi-institutional practice when optimal technique is used." *J Clin Oncol* 18:2560-66, 2000. (Class C)

22. Is Staging Evaluation Complete?

American Joint Committee on Cancer. Cancer Staging Manual. 6th ed, Greene FL, Pagepl, Fleming ID, et al. (Eds), Springer-Verlag, New York, p223-40, 2002. (Class R)

Chen EA, Carlson GA, Coughlin BF, et al. "Routine chest roentgenography is unnecessary in the work-up of stage I and II breast cancer." *J Clin Oncol* 18:3503-06, 2000. (Class D)

STAGE 0 POST SURGICAL TREATMENT ALGORITHM DISCUSSION AND REFERENCES

28. Oncology Visit

Chlebowski RT, Collyar DE, Somerfield MR, et al. "American Society of Clinical Oncology technology assessment on breast cancer risk reduction strategies: tamoxifen and raloxifene." *J Clin Oncol* 17:1939-55, 1999. (Class M)

Fisher B, Costantino JP, Wickerham DL, et al. "Tamoxifen for prevention of breast cancer: report of the National Surgical Adjuvant Breast and Bowel Project P-1 study." *J Natl Cancer Inst* 90:1371-88, 1998. (Class A)

Fisher B, Dignam J, Wolmark N, et al. "Tamoxifen in treatment of intraductal breast cancer: National Surgical Adjuvant Breast and Bowel Project B-24 randomised controlled trial." *Lancet* 353:1993-2000, 1999. (Class A)

30. Radiation Therapy Visit

Randomized prospective studies addressing the possible omission of breast XRT after lumpectomy in patients with intraductal cancer are in progress. Two randomized prospective studies showed an improvement in local control with the addition of breast XRT to lumpectomy.

Bartelink H, Heriot J-C, Poortmans P, et al. "Recurrence rates after treatment of breast cancer with standard radiotherapy with or without additional radiation." *N Engl J Med* 345:1378-86, 2001. (Class A)

Cutuli B, Nir CC, de Lafontan B, et al. "Breast-conserving therapy for ductal carcinoma *in situ* of the breast: the French cancer centers' experience." *Int J Radiat Oncol Biol Phys* 53:868-79, 2002. (Class C)

Fisher B, Dignam J, Wolmark N, et al. "Lumpectomy and radiation therapy for the treatment of intraductal breast cancer: findings from National Surgical Breast and Bowel Project B-17." *J Clin Oncol* 16:441-52, 1998. (Class A)

Fisher ER, Dignam J, Tan-Chiu E, et al. "Pathologic findings from the National Surgical Adjuvant Breast Project (NSABP) eight-year update of Protocol B-17: intraductal carcinoma." *Cancer* 86:429-38, 1999. (Class A)

Julien J-P, Bijker N, Fentiman IS, et al. "Radiotherapy in breast-conserving treatment for ductal carcinoma *in situ*: first results of the EORTC randomised phase III trial 10853." *Lancet* 355:528-32, 2000. (Class A)

Solin LJ, Fourquet A, Vicini FA, et al. "Mammographically detected ductal carcinoma *in situ* of the breast treated with breast-conserving surgery and definite breast irradiation: long-term outcome and prognostic significance of patient age and margin status." *Int J Radiat Oncol Biol Phys* 50:991-1002, 2001. (Class D)

31. Follow-Up Protocol

The use of chest x-rays, serum chemistries, bone scans, and soluble markers are not indicated for routine follow-up of patients with Stage 0 breast cancer. Patients who have Stage 0 breast cancer should be followed with yearly mammography. Clinical breast examination should be performed every 3-4 months for 2 years then every 6 months for 3 more years.

[Conclusion Grade I: See Discussion Appendix A, Conclusion Grading Worksheet – Annotation #31 (Stage 0)]

American Society of Clinical Oncology. "Recommended breast cancer surveillance guidelines." *J Clin Oncol* 15:2149-56, 1997. (Class R)

Del Turco MR, Palli D, Cariddi A, et al. "Intensive diagnostic follow-up after treatment of primary breast cancer: a randomized trial." *JAMA* 271:1593-97, 1994. (Class A)

GIVIO Investigators. "Impact of follow-up testing on survival and health-related quality of life in breast cancer patients." *JAMA* 271:1587-92, 1994. (Class A)

STAGE I POST SURGICAL TREATMENT ALGORITHMS DISCUSSION AND REFERENCES

33. Oncology Visit

ATAC (Arimidex, Tamoxifen Alone or in Combination) Trialists' Group, The. "Anastrozole alone or in combination with tamoxifen versus tamoxifen alone for adjuvant treatment of postmenopausal women with early breast cancer: first results of the ATAC randomised trial." *Lancet* 359:2131-39, 2002. (Class A)

Early Breast Cancer Trialists Collaborative Group. "Systemic treatment of early breast cancer by hormonal, cytotoxic, or immune therapy: 133 randomised trials involving 31,000 recurrences and 24,000 deaths among 75,000 women." *Lancet* 339:1-15, 1992. (Class M)

Early Breast Cancer Trialists Collaborative Group. "Tamoxifen for early breast cancer: an overview of the randomised trials." *Lancet* 351:1451-67, 1998. (Class M)

Fisher B, Costantino J, Redmond C, et al. "A randomized clinical trial evaluating tamoxifen in the treatment of patients with node-negative breast cancer who have estrogen-receptor-positive tumors." *N Engl J Med* 320:479-84, 1989. (Class A)

Mansour EG, Gray R, Shatila AH, et al. "Efficacy of adjuvant chemotherapy in high-risk node-negative breast cancer: an intergroup study." *N Engl J Med* 320:485-90, 1989. (Class A)

36. Follow-Up Protocol

The use of chest x-rays, serum chemistries, bone scans, and soluble markers are not indicated for routine follow-up of patients with Stage I breast cancer. Patients who have Stage I breast cancer should be followed with yearly mammography. Clinical breast examination should be performed every 3-4 months for 2 years, then every 6 months for 3 more years.

[Conclusion Grade I: See Discussion Appendix A, Conclusion Grading Worksheet – Annotation #36 (Stage I)]

American Society of Clinical Oncology. "Recommended breast cancer surveillance guidelines." *J Clin Oncol* 15:2149-56, 1997. (Class R)

Del Turco MR, Palli D, Cariddi A, et al. "Intensive diagnostic follow-up after treatment of primary breast cancer: a randomized trial." *JAMA* 271:1593-97, 1994. (Class A)

GIVIO Investigators. "Impact of follow-up testing on survival and health-related quality of life in breast cancer patients." *JAMA* 271:1587-92, 1994. (Class A)

STAGE II POST SURGICAL TREATMENT ALGORITHM DISCUSSION AND REFERENCES

38. Oncology Visit

ATAC (Arimidex, Tamoxifen Alone or in Combination) Trialists' Group, The. "Anastrozole alone or in combination with tamoxifen versus tamoxifen alone for adjuvant treatment of postmenopausal women with early breast cancer: first results of the ATAC randomised trial." *Lancet* 359:2131-39, 2002. (Class A)

Bonadonna G, Valagussa P, Moliterni A, et al. "Adjuvant cyclophosphamide, methotrexate, and fluorouracil in node-positive breast cancer: the results of 20 years of follow-up." *N Engl J Med* 332:901-06, 1995. (Class A)

Bonadonna G, Zambetti M, Valagussa P. "Sequential or alternating doxorubicin and CMF regimens in breast cancer with more than three positive nodes: ten-year results." *JAMA* 273:542-47, 1995. (Class A)

Early Breast Cancer Trialists Collaborative Group. "Systemic treatment of early breast cancer by hormonal, cytotoxic, or immune therapy: 133 randomised trials involving 31,000 recurrences and 24,000 deaths among 75,000 women." *Lancet* 339:1-15, 1992. (Class M)

Early Breast Cancer Trialists Collaborative Group. "Tamoxifen for early breast cancer: an overview of the randomised trials." *Lancet* 351:1451-67, 1998. (Class M)

Fisher B, Costantino J, Redmond C, et al. "A randomized clinical trial evaluating tamoxifen in the treatment of patients with node-negative breast cancer who have estrogen-receptor-positive tumors." *N Engl J Med* 320:479-84, 1989. (Class A)

Fisher B, Redmond C, Legault-Poisson S, et al. "Postoperative chemotherapy and tamoxifen compared with tamoxifen alone in the treatment of positive-node breast cancer patients aged 50 years and older with tumors responsive to tamoxifen: results from the national surgical adjuvant breast and bowel project B-16." *J Clin Oncol* 8:1005-18, 1990. (Class A)

Mansour EG, Gray R, Shatila AH, et al. "Efficacy of adjuvant chemotherapy in high-risk node-negative breast cancer: an intergroup study." *N Engl J Med* 320:485-90, 1989. (Class A)

40. Is Postmastectomy XRT Indicated?

Overgaard M, Hansen PS, Overgaard J, et al. "Postoperative radiotherapy in high-risk premenopausal women with breast cancer who receive adjuvant chemotherapy." *N Engl J Med* 337:949-55, 1997. (Class A)

Overgaard M, Jensen M-B, Overgaard J, et al. "Postoperative radiotherapy in high-risk postmenopausal breast-cancer patients given adjuvant tamoxifen: Danish Breast Cancer Cooperative Group DBCG 82c randomised trial." *Lancet* 353:1641-48, 1999. (Class A)

Ragaz J, Jackson SM, Le N, et al. "Adjuvant radiotherapy and chemotherapy in node-positive premenopausal women with breast cancer." *N Engl J Med* 337:956-62, 1997. (Class A)

42. Follow-Up Protocol

The use of chest x-rays, serum chemistries, bone scans, and soluble markers are not indicated for routine follow-up of patients with Stage II breast cancer. Patients who have Stage II breast cancer should be followed with yearly mammography. Clinical breast examination should be performed every 3-4 months for 2 years, then every 6 months for 3 more years.

[Conclusion Grade I: See Discussion Appendix A, Conclusion Grading Worksheet – Annotation #36 (Stage I)]

American Society of Clinical Oncology. "Recommended breast cancer surveillance guidelines." *J Clin Oncol* 15:2149-56, 1997. (Class R)

Del Turco MR, Palli D, Cariddi A, et al. "Intensive diagnostic follow-up after treatment of primary breast cancer: a randomized trial." *JAMA* 271:1593-97, 1994. (Class A)

GIVIO Investigators. "Impact of follow-up testing on survival and health-related quality of life in breast cancer patients." *JAMA* 271:1587-92, 1994. (Class A)

Discussion Appendix A – Conclusion Grading Worksheet

Conclusion Grading Worksheet for Annotation #31 (Stage 0 Algorithm), Annotation #36 (Stage I Algorithm), Annotation #42 (Stage II Algorithm)

Work Group's Conclusion: The use of chest x-rays, serum chemistries, bone scans, and soluble markers are not indicated for routine follow-up of patients with Stage 0, I, or II breast cancer. Patients who have Stage 0, I, or II breast cancer should be followed with yearly mammography. Clinical breast examination should be performed every 3-4 months for 2 years then every 6 months for 3 more years in patients with Stage I or II breast cancer.

Conclusion Grade: I

Author/Year	Design Type	Class	Quality +, -, 0	Population Studied/Sample Size	Primary Outcome Measure(s)/Results (e.g., p-value, confidence interval, relative risk, odds ratio, likelihood ratio, number needed to treat)	Authors' Conclusions/ <i>Work Group's Comments (italicized)</i>
Del Turco, Palli, Cariddi, et al. (1994)	RCT	A	+	<p>-Patients surgically treated in past 6 months for unilateral, histologically confirmed invasive carcinoma of the breast; no evidence of metastases (by physical exam, chest x-ray, or bone scan); pre- or post-menopausal; 12 centers participated</p> <p>-Excluded: older than 70 yrs, cancer diagnosed at another site, cannot be regularly followed</p> <p>-Randomized to: a) intensive follow-up - physical exam every 3 mos for 2 yrs then every 6 mos for next 3 yrs, chest x-ray and bone scan every 6 mos, mammography yearly or b) clinical follow-up - physical exam every 3 mos for 2 yrs and every 6 mos for next 3 yrs, mammography every year, other tests only in presence of symptoms</p> <p>-Patients with negative axillary nodes received no adjuvant treatment; patients with positive nodes received hormonal treatment and/or chemotherapy</p>	<p>-Total of 1243 randomized (622 to intensive follow-up and 621 to clinical follow-up); groups were similar at baseline on age, menopausal status, type of surgery, pathologic stage, lymph node status, adjuvant therapy received</p> <p>-Compliance with bone scan (75.7%) and chest x-ray (79.4%) was high in the intensive follow-up group; compliance with physical exam was 88% for both groups</p> <p>-Total of 161 patients (12.9%) were lost to follow-up at some point in the study</p> <p>-Total of 393 recurrences were observed (104 local and 289 distant) (Those with local and distant relapse were considered only as distant recurrences)</p> <p>-There were 164 (26%) recurrences in intensive follow-up group and 125 (20%) in the clinical follow-up group with the difference due mostly to bone and intrathoracic recurrences</p> <p>-Type of treatment for distant metastases did not differ between groups</p> <p>-Relapse-free survival (based on distant relapses) was significantly (p=0.01) different between the groups at 5 yrs with earlier diagnosis of recurrence in the intensive follow-up group; difference between groups was reduced (p=0.07) when both relapse and deaths were considered</p> <p>-Vital status information was available from all but 5 patients (0.4%) at 5 yrs; estimated mortality was 18.6% in the intensive follow-up group and 19.5% in the clinical follow-up group; there were no differences between the survival curves</p>	<p>-Study confirmed early detection of metastases in intensive follow-up group but no reduction in mortality rate was evident with 5 years of follow-up</p> <p>-Intensive follow-up may be necessary in clinical trials but should not be adopted in current practice until evidence of its usefulness is provided; chest x-ray and bone scan should be limited to patients with suspicious symptoms or findings at periodic clinical examination</p>

Discussion Appendix A - Conclusion Grading Worksheet (cont)

Conclusion Grading Worksheet for Annotation #31 (Stage 0 Algorithm), Annotation #36 (Stage I Algorithm), Annotation #42 (Stage II Algorithm) (cont)

Author/Year	Design Type	Class	Quality	Population Studied/Sample Size	Primary Outcome Measure(s)/Results (e.g., p-value, confidence interval, relative risk, odds ratio, likelihood ratio, number needed to treat)	Authors' Conclusions/ <i>Work Group's Comments (italicized)</i>
GIVIO Investigators (1994)	RCT	A	+, -, \emptyset	<p>Population Studied/Sample Size</p> <ul style="list-style-type: none"> -Women less than 70 yrs old with histologically confirmed, operable (T1-T3, N0 to N1 or M0) noninflammatory, unilateral breast carcinoma -Excluded: in situ carcinoma, previous malignant disease other than squamous or basal cell carcinoma of the skin, unwillingness or inability to comply with follow-up protocol -Randomized to: a) intensive follow-up - quality-of-life assessment at 6, 12, 24, and 60 mos; physical exam (with blood test) every 2 mos for 2 yrs then every 6 mos; mammography every yr; chest x-ray every 6 mos; bone scan and liver echography every yr or b) control follow-up - mammography every yr; physical exam every 2 mos for 2 yrs then every 6 mos; quality-of-life assessment at 6, 12, 24, and 60 mos -Common therapeutic protocol - no further treatment if axillary nodes were negative; if nodes were positive, pre-menopausal patients were treated with chemotherapy and post-menopausal patients with hormonal therapy -Followed guidelines for management of recurrences -Monitored physician compliance with randomly assigned follow-up regimens -Quality of life assessment as done in all patients free of disease 	<p>Primary Outcome Measure(s)/Results (e.g., p-value, confidence interval, relative risk, odds ratio, likelihood ratio, number needed to treat)</p> <ul style="list-style-type: none"> -Median follow-up was 71 mos; only considered distant metastases as first event of disease; measured time to detection from date of breast surgery to date of diagnosis -Randomized 1441 from 32 hospitals; 121 are not included in the analysis (hospitals ceased to cooperate within 2 mos of randomization, distant metastases or died within 3 mos of surgery, inappropriate staging or concurrent malignancy; loss to follow-up) - final analysis based on 1320 patients -123 of 1320 (9.3%) subsequently discontinued follow-up care or were lost to follow-up before relapse -At a median follow-up of 71 mos there were no differences in survival (132 deaths [20%] in intensive group and 122 deaths [18%] in control group - OR=1.12; 95% CI=0.87 to 1.43) -Metastases were detected at an asymptomatic stage in 31% of intensive group and 21% of control group -No difference in distant metastasis-free survival between the 2 groups -No evidence of benefit from surveillance within subsets of patients grouped by nodal status -Patterns of first failure similar except more incidence of contralateral breast cancer in intensive group -Compliance was greater than 80% for both groups and for every procedure; protocol recommendations for adjuvant therapies were also well adhered to (91% compliance rate) -Response rates for the quality-of-life assessment ranged from 72-75%; respondents were younger, more educated, and married (compared to non-respondents); difference not evident by type of follow-up regimen; type of follow-up did not affect quality-of-life perception, overall health perception, body image, emotional well-being, social functioning, symptoms, satisfaction with care -More than 70% of respondents in both groups preferred to be seen frequently by a physician and to undergo diagnostic tests even if free of symptoms 	<p>Authors' Conclusions/ <i>Work Group's Comments (italicized)</i></p> <ul style="list-style-type: none"> -Breast cancer patients do not benefit from frequent diagnostic tests (bone scan, chest x-ray, and liver echography) added to routine medical surveillance. -Health related quality-of-life was not affected by the type of follow-up care received. -Recommendations for clinical practice should, for the time being, endorse a follow-up strategy based on clinical surveillance plus yearly mammography <p>NOTES: sample size estimation was based on detection of a 20% relative reduction in mortality (from 35% to 28%) with 80% power (1 sided, p=0.05); determined that 1200 patients would be needed</p>

Discussion Appendix A – Conclusion Grading Worksheet (cont)

Conclusion Grading Worksheet for Annotation #31 (Stage 0 Algorithm), Annotation #36 (Stage I Algorithm), Annotation #42 (Stage II Algorithm) (cont)

Author/Year	Design Type	Class	Quality	Population Studied/Sample Size	Primary Outcome Measure(s)/Results (e.g., p-value, confidence interval, relative risk, odds ratio, likelihood ratio, number needed to treat)	Authors' Conclusions/ <i>Work Group's Comments (italicized)</i>
American Society of Clinical Oncology (1997)	Guideline	R	N/A	-Guidelines developed by experts in clinical medicine, clinical research, medical decision-making, health economics, and medical ethics with a focus on expertise in breast cancer; also included a patient representative -Reviewed literature 1975-December 1995 -Process was consensus development based on evidence	<p>Primary Outcome Measure(s)/Results (e.g., p-value, confidence interval, relative risk, odds ratio, likelihood ratio, number needed to treat)</p> <p>-RECOMMENDED Surveillance</p> <p>a. History/eliciting of symptoms - every 3 to 6 months for first 3 yrs then every 6 to 12 months for next 2 yrs, then annually</p> <p>b. Physical exam - same frequency as above</p> <p>c. Breast self-exam - monthly</p> <p>d. Mammography - yearly; if treated with breast conserving therapy the first post-treatment mammogram is 6 months after completion of radiotherapy then annually</p> <p>e. Patient education about symptoms of recurrence</p> <p>f. Coordination of care - to provide continuity and avoid duplication</p> <p>g. Pelvic examination - yearly</p> <p>-NOT RECOMMENDED</p> <p>a. Complete blood count</p> <p>b. Automated chemistry studies</p> <p>c. Chest roentgenography</p> <p>d. Bone scan</p> <p>e. Ultrasound of the liver</p> <p>f. Computed tomography</p> <p>g. Breast cancer tumor marker CA 15-3</p> <p>h. Breast cancer tumor marker CEA</p>	<p>Data are sufficient to recommend the surveillance strategy listed.</p> <p>NOTE: Panel is to be reconvened every 3 years (or sooner if new information suggests more timely modifications)</p> <p><i>Work Group's Comments:</i></p> <p><i>-The Canadian Medical Association grading system was used :</i></p> <p><i>A - evidence of type I (meta-analysis or high power RCTs) or consistent findings from types II (at least 1 well-designed experimental study or RCTs with low power), III, (non-randomized, cohort, case-control) and IV (comparative and correlation descriptive and case studies) evidence</i></p> <p><i>B - evidence of types II, III, or IV with generally consistent results</i></p> <p><i>C - evidence of types II, III, or IV but inconsistent findings</i></p> <p><i>D - little or no systematic empirical evidence</i></p> <p><i>-Evidence supporting the recommendations was of grade A (for contralateral mammography), B (for eliciting of symptoms, physical exam, and pelvic exam), C (for ipsilateral mammography before 1 year), and D (for breast self-exam, patient education, coordination of care)</i></p> <p><i>-Evidence supporting non-recommendation was of grade A (for automated chemistry studies, chest x-ray, bone scan, liver ultrasound) and D (complete blood count, CT)</i></p>



INSTITUTE FOR CLINICAL
SYSTEMS IMPROVEMENT

Support for Implementation:
Breast Cancer Treatment

This document provides resources, strategies and measurement specifications for use in closing the gap between current clinical practice and the recommendations set forth in the guideline.

Support for Implementation – Priority Aims and Suggested Measures

OVERVIEW

The guideline work group identified the following aims as key areas in which medical groups may receive benefits in implementing this guideline.

The measures associated with these aims are presented as suggested measures. Measures of aim help medical groups determine progress in achieving a particular aim. However, individual medical groups may customize additional approaches.

The work group strongly recommends that medical groups opting for any of the recommended measures, or those who would like to develop their own measures of the success of the implementation of this guideline, work with the measurement advisor for this guideline.

PRIORITY AIMS AND SUGGESTED MEASURES FOR HEALTH CARE SYSTEMS

1. Improve access to all appropriate options for primary therapy for patients with early breast cancer.

Possible measure of accomplishing this aim:

- a. Percent of patients with Stage 0, I or II breast cancer for whom a discussion of appropriate treatment options, including lumpectomy plus radiation, is documented in the medical record.

2. Standardize the application of appropriate treatment modalities (surgery, radiation, and systemic therapy) and follow-up schedules for patients with breast cancer.

Possible measures of accomplishing this aim:

- a. Percent of patients with breast cancer with a detailed follow-up plan documented in the medical record.
- b. Percent of patients with breast cancer with a detailed plan in the medical record (measure 2a) with follow-up documented as planned in the first 12 months following diagnosis.

3. Increase the use of standardized education materials and psycho-social support for patients with breast cancer and their families.

Possible measures of accomplishing this aim:

- a. Percent of patients with breast cancer who self-report via survey (mailed or administered at the clinic) that they have received relevant patient education materials.
- b. Percent of relevant clinic sites that have available current patient education materials on breast cancer that are recommended by the guideline.

4. Enhance awareness of the importance of clinical trials in breast cancer treatment.

Possible measures of accomplishing this aim:

- a. Percent of patients with Stage 0, I or II breast cancer with documentation in their medical record that the option of a clinical trial has been discussed with them.
- b. Percent of patients with Stage 0, I or II breast cancer that are registered for clinical trials for breast cancer treatment annually.

Support for Implementation – Measurement Specifications

Possible Success Measure # 4a

Percent of patients with Stage 0, I or II breast cancer with documentation in their medical record that the option of a clinical trial has been discussed with them.

Population Definition

Female patients to age 74 diagnosed with Stage 0 or Stage I or Stage II breast cancer within the target quarter.

Data of Interest

$$\frac{\text{\# of patients in the denominator with documentation in the medical record of discussion of the option of clinical trials}}{\text{\# of patients with Stage 0, I or II breast cancer identified in the target quarter whose records are reviewed}}$$

Numerator/ Denominator Definitions

Numerator: # of medical records of patients in the denominator with any documentation of a discussion of the option of a clinical trial.

Denominator: # of patients with a new diagnosis of breast cancer Stages 0, I or II in the target quarter. ICD-9 codes for breast cancer include: 174.00 series, 233.00 series.

Method/Source of Data Collection

Medical groups identify patients with a diagnosis of breast cancer made during the target quarter. This can be accomplished either by a search of the medical group's information database. The patient's medical record will be reviewed to confirm the stage of diagnosis and to look for documentation of discussion of the option of a clinical trial.

Time Frame Pertaining to Data Collection

Data may be collected quarterly.

Probing Measure

If breast-conserving treatment rates for patients with Stage 0, I and II breast cancer is less than the community standard for two successive post-implementation measurement periods, it may indicate that patients are not being adequately educated about their appropriate treatment options. If other possible explanatory factors have been considered (such as an older than average age population) and ruled out, the following probing measure might be useful:

A short questionnaire might be given to patients as soon as possible after surgery. Patients would be asked: "What information have you received and are you satisfied with the level of participation you had in choosing a surgery?"

This measure (% patients satisfied with their education concerning treatment) would allow medical groups to assess the extent to which patients perceive that they have been adequately informed.

Note

The measurement advisor can assist with the development and implementation of a patient questionnaire.

SYSTEMS APPROACHES TO IMPLEMENTATION FOR THIS GUIDELINE

1. Assure access to all appropriate options for primary therapy for patients with early breast cancer including breast-conserving surgery.
2. Standardize application of appropriate treatment modalities: surgery, radiation, and systemic therapy.
3. Establish appropriate follow-up schedules.
 - a. Develop a treatment plan for patients, which include a follow-up schedule. Review this plan with patient and family members.
4. Identify and recommend standardized education materials and psychosocial support for patients and families. This plan should be designed for easy distribution, and should include a follow-up strategy. A communication plan should include both primary and specialty care.
5. Enhance awareness of the importance of clinical trials by establishing methods to routinely identify and distribute information on clinical trial enrollment opportunities available to patients.

Support for Implementation – Recommended Educational Resources

Breast Cancer Treatment

RECOMMENDED WEBSITE RESOURCES*

Note: Websites are listed in alphabetical order, not in order of work group preference.

Website Sponsor	Target Audience	Description	Website Address
American Cancer Society	Public	Site is rich in information about breast cancer risk factors and screening as well as treatment. Diagrams assist with understanding of breast anatomy and surgery. The news feature provides the latest information available to the public on breast cancer research. Links to reputable sites.	www.cancer.org
Living Beyond Breast Cancer	Public	Information/support includes on-line chats specifically for women under age 45, women with metastatic breast cancer, and those with general questions. Transcripts of educational teleconferences about the latest information in breast cancer. Links to reputable sites.	www.lbbc.org
Mautner Project	Lesbian women with cancer	Mautner Project	www.mautnerproject.org
Mayo Clinic	Public	The Condition Center on Cancer provides information on frequently asked questions. Information is also available regarding other conditions women may have concurrently with their cancer. Drug information is easily accessible. Women may email questions to Mayo physicians. Links are available to other reputable sites.	www.mayoclinic.com

Support for Implementation – Recommended Educational Resources (cont)

Breast Cancer Treatment

RECOMMENDED WEBSITE RESOURCES* (CONT)

Website Sponsor	Target Audience	Description	Website Address
National Alliance of Breast Cancer Organizations (NABCO)		Calendar of conferences as well as highlights from conferences. Information on choosing support groups. Email reminders of breast exam available.	www.nabco.org/ For information specific to men with breast cancer, there is a direct link on the home page.
National Cancer Institute (NCI)		The latest information on cancer treatment at both the professional and lay public level, including cancer research news, clinical trial information, and cancer information hotline. Ability to search scientific literature. All NCI publications available on-line.	www.nci.nih.gov/
National Cancer Institute (NCI)	Public	Information on complimentary and alternative medicine.	www.cancer.gov/cancerinfo/treatment/cam
National Lymphedema Network	Public	Information on resources for the prevention and treatment of lymphedema.	www.lymphnet.org
Susan G. Komen Breast Cancer Foundation		Advocacy and support information for special populations with breast cancer. Glossary of terms. Recent relevant breast cancer news items.	www.komen.org/bci
Y-Me National Breast Cancer Organization		Access available in English or Spanish. 24-hour toll-free hotline. Information on male breast cancer and advocacy. Information for partners supporting women with breast cancer. Men's match program to support male partners of women with breast cancer through trained phone volunteers.	http://www.y-me.org/

Support for Implementation – Recommended Educational Resources (cont)

Breast Cancer Treatment

RECOMMENDED WEBSITE RESOURCES* (CONT)

These websites were reviewed by the ICSI *Breast Cancer Treatment* guideline work group as credible resources. ICSI does not have the authority to monitor the content of these sites. Any health-related information offered from these sites should not be interpreted as giving a diagnosis or treatment.

* Criteria for Selecting Websites

The preceding websites were selected by the *Breast Cancer Treatment* guideline work group as additional resources for practitioners and the public. The following criteria were considered in selecting these sites.

- The site contains information specific to the particular disease or condition addressed in the guideline.
- The site contains information that does not conflict with the guideline's recommendations.
- The information is accurate and/or factual. The author of the material or the sponsor of the site can be contacted by means other than email. For example, a nurse line or other support is provided.
- The material includes the source/author, date and whether the information has been edited in any way. The site clearly states revision dates or the date the information was placed on the internet.
- The site sponsor is an objective group without an obvious or possible bias. For example, the site does not promote a product, service or other provider.
- The coverage of the topic is appropriate for the guideline's target audience. It is clearly written, well-organized and easy to read. The site is easy to navigate.

Support for Implementation – Recommended Educational Resources (cont)

Breast Cancer Treatment

SUPPORT GROUPS, LOCAL AND NATIONAL ORGANIZATIONS

In addition to the organizations and groups listed here, many hospitals provide breast cancer support groups – contact your local hospital for this information.

African-American Breast Cancer Alliance

A support and advocacy group for African-American women with breast cancer and their families. This organization works to educate the African-American community about cancer and how women can protect themselves from the disease. In association with the American Cancer Society, AABCA has created a 20-minute video called "Being There." (612)825-3675 or (612)489-0143.
www.geocities.com/aabcainc

American Cancer Society

A nationwide, community-based health organization that provides support groups for women and their families. Some of the programs affiliated with this organization include *Reach to Recovery*, which links women undergoing mastectomies or lumpectomies with those who have already had one, and *Look Good...Feel Better*, which helps breast cancer patients undergoing radiation and/or chemotherapy enhance their appearance with advice from hair and makeup professionals. Also includes information on wigs and hats. Limited transportation service charge. (800)227-2345 (outstate); (651)644-1224 (East Metro); (952)925-2772 (West Metro).

Chrysalis: A Center for Women

A resource counseling and information line that provides assistance to women with personal, economic and health related issues. (612)871-0118. www.chrysaliswomen.org

Melpomene Institute for Women's Health Research

A research and education center offering information on many health-related subjects for women, mostly related to physical activity and including resources on breast cancer. (651)642-1951.
www.melpomene.org

Minnesota Breast Cancer Coalition

An activist organization that works to promote research on the cause of and a cure for breast cancer through increased public and private funding. It also works to improve access to high-quality breast cancer screening, diagnosis and treatment for all women. (651)459-7923.

Kids Konnected

A national organization offering support and educational materials (teddy bears, books for young children) that offer to help children with a parent diagnosed with cancer. A 24-hour hotline is available for kids to talk with other kids who understand what they are experiencing. All resources are free (800) 899-2866. www.kidskonnected.org

Support for Implementation – Recommended Educational Resources (cont)

Breast Cancer Treatment

The National Coalition for Cancer Survivorship

A national network of independent groups and individuals concerned with survivorship and sources of support for cancer patients and their families. NCCS is a clearinghouse of information and advocates for cancer survivors. (301)650-9127 or (877) 622-7937. www.canceradvocacy.org

National Alliance of Breast Cancer Organization (NABCO)

A nonprofit national resource center that publishes the *Breast Cancer Resource List*. This guide lists information, support, education and services, help in making treatment choices, publications and videos, support groups and locations that sell wigs and prostheses. (212)889-0606.

National Cancer Institute

Offers a cancer-information service with up-to-date information on all aspects of cancer. Makes referrals to oncologists, medical centers and clinical trial programs, and provides information brochures such as *What You Need to Know About Breast Cancer*. For more information: (800)4-CANCER (422-6237).

Pathways

A health crisis resource center, provides free programs and services that are designed to support a creative healing response – including emotional support, meditation, imagery and positive attitudes to life-threatening illness. (612)882-9061.

Susan G. Komen Foundation

An organization that provides timely, accurate information to callers about breast health and breast cancer. Also provides facts about the disease, screening methods and treatment options, and offers information regarding resources and support services in the caller's area. Sponsors the annual nationwide event *Race for the Cure*, a 5K run held each Mother's Day to support breast cancer research and fund treatment for women with breast cancer. (800)I'M AWARE 462-9273.

United Way First Call for Help

An organization that provides information and referral on health and human services. (651)291-0211. www.firstcall-mn.org

Women's Cancer Resource Center

An organization of cancer survivors and supporters. Offers an information and referral phone line, support groups for women in their 20's and 30's, post-treatment support groups and support groups for lesbian partners. Its *Caring Hands Touch* program provides a range of free alternative healing methods, including massage therapy. (612)822-4846 or 877-892-6742.

Y-Me National Breast Cancer Organization

Assists men and women in various stages of breast cancer with psychological aspects of their diagnosis and informs them of their treatment options. Provides information on hot lines, referrals and self-help groups. Trained counselors and volunteers can link men and women to similar breast cancer survivors. Volunteers are also available to speak with male partners of women with breast cancer. Wig and prosthesis banks are available for women who cannot afford them. (800)221-2141.