Appendixes

Search Strategy 1

1. breast cancer.tw.
2. exp breast neoplasms/
3. breast$.tw.
4. exp breast/
5. exp neoplasms/
6. (3 or 4) and 5
7. ((breast$ or mammar$) adj2 (neoplasm$ or cancer$ or tumour$ or tumor$ or carcinoma$ or adenocarcinoma$ or dcis or ductal or infiltrating or intraductal or lobular or medullary)).tw.
8. or/1-2,6-7
9. quality of health care/
10. Guideline Adherence/
11. Medical Audit/
12. Nursing Audit/
13. "Outcome and Process Assessment (Health Care)"/
14. "Commission on Professional and Hospital Activities"/
15. "Outcome Assessment (Health Care)"/
16. "Process Assessment (Health Care)"/
17. "Peer Review, Health Care"/
18. "Professional Review Organizations"/
19. Program Evaluation/
20. Benchmarking/
21. Quality Assurance, Health Care/
22. Guidelines/
23. Practice Guidelines/
24. "Total Quality Management"/
25. "Quality Indicators, Health Care"/
26. Utilization Review/
27. practice guideline.pt.
28. Consensus Development Conference.pt.
29. ((quality or performance) adj2 (measure$ or indicator$ or assessment$)).tw.
30. "standard of care".tw.
31. ((practice or consensus or position) adj2 (guideline$ or recommendation$ or statement$)).tw.
32. or/9-31
33. 8 and 32
34. limit 33 to yr=1993-2003
35. (diagnos$ or detect$ or treatment$ or therap$ or radiol$ or surg$ or pathol$ or instrument$ or rehab$ or chemoth$).mp.
36. (biops$ or scan or MRI or CT or genet$ or mastectomy or radiation$).mp.
37. (di or dt or ge or is or pa or ra or rt or rh or su or th).fs.
38. 34 and (35 or 36 or 37)
39. limit 38 to english language
40. 38 not 39
41. (20031$ or 20032$ or 20024$ or 20025$).ew.
42. 39 and 41
43. 40 or 42

Search Strategy 2

1. (Breast$ or mammo$ or mamma$ or mast$).mp.
2. (cancer$ or neoplasm$).mp.
3. quality.mp.
4. 1 and 2 and 3

Search Strategy 3

1. systematic review$.mp.
2. systematic literature review$.mp.
3. meta-analysis.pt.
4. (meta-analysis or metaanalysis or meta-analyses).ti.
5. evidence-based medicine.mp.
6. evidence-based.mp. and ((guideline or guidelines).ti. or recommendations.mp.)
7. evidenced-based.mp. and ((guideline or guidelines).tw. or recommendation$.mp.)
8. consensus development conference.pt.
9. guideline.pt.
10. health planning guidelines.mp.
11. cochrane database of systematic reviews.jn.
12. acp journal club.jn.
13. (health technology assessment reports or health technology assessment rockville md or health technology assessment winchester england).jn.
14. evidence report technology assessment summary.jn.
15. (evidence based mental health or evidence based nursing).jn.
16. clinical evidence.jn.
17. or/1-16
18. systematic.tw. or systematically.mp. or critical.tw.
19. (study and selection).ti,ab.
20. (predetermined or inclusion).mp. and criteri$.tw.
21. exclusion criteri$.mp.
22. main outcome measures.mp.
23. standard of care.mp.
24. or/18-23
25. (Survey or surveys).tw. or overview$.mp. or review.tw. or reviews.mp.
26. (search$ or handsearch).mp.
27. (analysis or critique).tw. or appraisal.mp.
28. (reduction and risk and (death or recurrence)).mp.
29. or/25-28
30. literature.tw. or articles.mp.
31. (publications or publication).tw.
32. bibliography.tw. or bibliographies.mp.
33. (published or unpublished or citation$).mp.
34. Database.mp. or internet.tw. or textbooks.tw. or references.mp.
35. trials.mp.
36. meta-analysis/
37. clinical.tw. and studies.mp.
38. treatment outcome.mp.
39. or/30-38
40. and/24,29,39
41. case report.ti.
42. case report/
43. editorial.ti.
44. (editorial or letter or newspaper article).pt.
45. or/41-44
46. (17 or 40) not 45
47. breast cancer.tw.
48. exp breast neoplasms/
49. breast$.tw.
50. exp breast/
51. exp neoplasms/
52. (49 or 50) and 51

Appendix A. Search Strategies (continued)

53. ((breast$ or mammar$) adj2 (neoplasm$ or cancer$ or tumour$ or tumor$ or carcinoma$ or adenocarcinoma$ or dcis or lcis or ductal or infiltrating or intraductal or lobular or medullary)).tw.
54. or/47-48,52-53
55. (diagnos$ or detect$ or treatment$ or therap$ or radiol$ or surg$ or pathol$ or instrument$ or rehab$ or chemoth$).mp.
56. (biops$ or scan or MRI or CT or genet$ or mastectomy or radiation$).mp.
57. (di or dt or ge or is or pa or ra or rt or rh or su or th).fs.
58. or/55-57
59. 46 and 54 and 58
60. limit 59 to yr=1994-2003

Letter to American Cancer Society of Clinical Oncology

Mark Somerfield PhD
Director, Cancer Policy and Clinical Affairs
American Society of Clinical Oncology
1900 Duke Street, Suite 200
Alexandria, VA 22314.
October 1, 2003.

Dear Mark:

Thanks for speaking with me yesterday. I have copied our AHRQ representative on this email since she, I am certain, will be most pleased that we have been able to speak.

To restate our request, we at the University of Ottawa Evidence-based Practice Center, under contract from AHRQ, are doing a systematic review of quality measures regarding breast cancer diagnosis and treatment (see attached RFTO), and we would like to integrate into our evidence report specific information and data we understand ASCO has been, and is still, collecting:

a. the quality measures exclusively pertaining to our topic (i.e., less than the total of 108), including information/data about:

b. their exact definition;

c. their developmental history (rationale; protocol for development; pilot test data, including psychometric history and specific links to improved outcomes; databases used for case identification) as well as their source(i.e., systematic reviews; guidelines; peer review process; some combination thereof); and,

d. their subsequent performance in the field following their establishment as 'viable' quality measures, including any protocols for their implementation, databases used for case identification, etc. I would welcome any additional opportunity to clarify our work, or to do whatever facilitates this process.

Perhaps you or your representative would like to become involved in our process, for example, as part of an Expert Panel.

I look forward to hearing back from you.

Sincerely,

Howard Schachter PhD
University of Ottawa Evidence-based Practice Center
CC: Stacie Jones, AHRQ

Relevance Screening Forms

INSTRUCTIONS: PLEASE USE REVIEW-SPECIFIC DEFINITIONS IN SELECTING RESPONSES.

LEVEL 1 SCREENING:

1. Does this refer to breast cancer in women? YES NO CAN'T TELL

2. Does this refer to (the reporting/documentation of, or, patient-reported quality of life or patient-reported satisfaction relating to) its diagnosis, treatment (e.g., supportive care), or followup care?
YES NO CAN'T TELL

3. Does this refer to at least one of the following?[1]
- Quality measure/ment(s) made available, published, or conducted beginning in 1993
- Clinical practice guideline (CPG) published beginning in 1996
- Systematic review (SR) published beginning in 1994
- Commentary or editorial in a key general or cancer journal describing important (new) evidence that could alter practice/care recommendations, published beginning in 1994[2]
- Evidence nominated by key informant, describing (new or missed) evidence that could alter practice/care recommendations[3]

YES NO CAN'T TELL

LEVEL 2 SCREENING:[4]

4. To which does it refer? (*select all that apply*)
- o Quality measure/ment(s) made available, published, or conducted beginning in 1993
- o Clinical practice guideline (CPG) published beginning in 1996
- o Systematic review (SR) published beginning in 1994
- o Commentary or editorial in a key general or cancer journal describing important (new) evidence that could alter practice/care recommendations, published beginning in 1994[2]
- o Evidence nominated by key informant, describing (new or missed) evidence that could alter practice/care recommendations[3]

LEVEL 3 SCREENING:[5]

1. Does this refer to a clinical practice guideline or systematic review? YES NO CAN'T TELL

[1]Note that, after the final search update, and directly relating to the narrowed focus whereby CPGs and SRs were now outside the scope of the review, the eForm was modified to allow screeners to flag these two types of report for exclusion (see Modified QUOROM Flow Chart). This precluded having to order articles that, via the initial screening of pre-update bibliographic records, had been allowed to pass on to Level 2 screening.
[2]These literature searches had not yet been conducted before the scope was narrowed.
[3]Active solicitation had not yet begun before the scope was narrowed.
[4]The key difference between Level 1 and Level 2 screening was that, in the latter, the following question was added to the three used in the former.
[5]Only this one question was asked.

Data Abstraction Form

Instructions: ***Please answer each question.*** Selecting response options means clicking on them. A text box requires you to provide specific information. When it is not reported (= NR), the question does not apply (= N/A), you cannot tell what/where it is (= CT), or you have no comment to make (= NC), type the relevant code in the text box. If the research report describes more than one *quality indicator*, answer in this eForm all the questions for the *first reported quality indicator/measure* while at the same time letting the review manager know that a data abstraction form is required for each additional one.

GENERAL INFORMATION:

1. Initials of reviewer: **TEXT BOX (BOX)**

2. Reference identification # (Refid#): **BOX**

3. Author, Year: **BOX**

4. Number of unique, review-relevant studies that this report describes: **BOX**

5. Other Refids that refer to this same research project:

6. Publication status (*select one*):
    - Peer-reviewed journal publication
    - Journal publication
    - Conference abstract/poster
    - Book
    - Book chapter
    - HTA/technical report
    - Thesis
    - Unpublished document
    - Study sponsor's internal report
    - Internet document
    - Other

7. If you answered "Other" to the preceding question, specify what you mean: **BOX**

8. Country in which the study was conducted (*select all that apply*):
    - Australia
    - Canada
    - United States
    - Japan
    - United Kingdom (*not* Ireland)
    - France
    - Germany

Italy
Finland
Russia
Other
Not reported

9. If you answered "Other" to the preceding question, specify what you mean: **BOX**

10. Number of sites: **BOX**

11. Funding source type (*select all that apply*):
    Government
    Industry
    Private (non-industry)
    Hospital
    Other
    Not reported
    Can't tell

12. Specify the funding source(s): **BOX**

13. Number of unique quality measures (or measurements) [QMs] this report describes? **BOX**

14. Year(s) in which the QMs were assessed? **BOX**

DEFINITION:

15. Title of QM (the percentage of…): **BOX**

16. Bibliographic source(s) of QM: **BOX**

17. Category of QM = "breast cancer and…" (i.e., primary clinical component[s]) (*select one*):
    Diagnosis (e.g., pathology)
    Treatment
    Follow-up
    Supportive care
    Reporting/documentation (e.g., pathology)

18. Institute of Medicine care domains (*select all that apply*):
    Effectiveness
    Patient-centeredness
    Safety
    Timeliness

19. Specific type of quality measure (*select all that apply*):
    Appropriate use of diagnostic imaging

Quality of diagnostic imaging
Appropriate use of breast biopsy
Quality of diagnostic breast biopsy
Appropriate use of sentinel lymph node biopsy
Quality of diagnostic sentinel lymph node biopsy
Appropriate use of chest x-ray
Appropriate use of bone scan
Appropriate use of CT scans
Appropriate use of MRI
Appropriate use of blood tests
Availability of pathological staging
Accuracy of pathological staging
Availability of tumor marker status
Accuracy of tumor marker status
Availability of genetic testing
Accuracy of genetic testing
Appropriate use of genetic testing
None of the above

20. Specific type of quality measure (*select all that apply*):
Appropriate use of breast conserving surgery (BCS)
Quality of BCS
Appropriate use of mastectomy (including adequacy of surgical margins)
Quality of mastectomy (including adequacy of surgical margins)
Appropriate use of lymph node surgery
Quality of lymph node surgery
Appropriate use of reconstructive surgery
Quality of reconstructive surgery
Appropriate use of radiation therapy (RT) after BCS
Quality of RT after BCS
Appropriate use of RT post-mastectomy
Quality of RT post-mastectomy
Appropriate use of adjuvant and neo-adjuvant systemic therapy (chemotherapy; hormone therapy)
Quality of adjuvant and neo-adjuvant systemic therapy (chemotherapy; hormone therapy)
Appropriate use of hormonal and chemotherapy management of metastatic disease
Quality of hormonal and chemotherapy management of metastatic disease
Appropriate dosing of chemotherapy
Quality of dosing of chemotherapy
Appropriate use of dosing of radiotherapy
Quality of dosing of radiotherapy
None of the above

21. Specific type of quality measure (*select all that apply*):
Adequacy of documentation of pathology reports
Completeness of documentation of pathology reports

Adequacy of documentation of operative reports
Completeness of documentation of operative reports
Adequacy of documentation of radiation reports
Completeness of documentation of radiation reports
Adequacy of documentation of chemotherapy reports
Completeness of documentation of chemotherapy reports
None of the above

22. Specific type of quality measure (*select all that apply*):
    Quality of follow-up (e.g., timeliness; interventions)
    Quality of supportive care (e.g., interventions)
    Quality of life
    Patient satisfaction

23. Primary measure domain (*select all that apply*):
    Structure (e.g., accreditation; number of certified specialists)
    Access (e.g., attainment of timely & appropriate care)
    Process (e.g., adherence to recommended care)
    Outcome, including patient experience (e.g., QOL; patient satisfaction)

24. Specify the stated importance of, or need for, the QM (i.e., rationale; purpose: e.g., wide variation in quality of care; substandard care; over-use; under-use): **BOX**

25. Specify the references highlighting the importance of, or need for, the QM: **BOX**

26. Describe the QM's "denominator" (i.e., inclusion/exclusion criteria): **BOX**

27. Describe the QM's "numerator" (i.e., inclusion/exclusion criteria defining specific subset of denominator): **BOX**

PERFORMANCE:

28. Was this quality measure "systematically developed" to any degree? (*select one*)
    Yes (e.g., pilot-testing: see Development questions)
    No (a quality indicator whose performance has been merely measured)
    Can't tell

29. Based on which type(s) of evidence was the criterion/standard defined (*select all that apply*)?
    Clinical practice guideline: evidence-based
    Clinical practice guideline: consensus-based
    Systematic review of evidence
    Selective/narrative review (i.e., unsystematic search of literature)
    Expert (consensus) panel process
    Other

30. If you answered 'Other' to the preceding question, specify what you mean: **BOX**

31. Name the evidence type(s) (e.g., guidelines), including its year of publication: **BOX**

32. Which methods of case identification (e.g., cancer registries; claims databases) were used to evaluate the performance of the QM? Please name them. **BOX**

33. Which data sources (e.g., patient self-report; medical records), per method of case identification, were used to evaluate the performance of the QM? **BOX**

34. Denominator time window (time period in which patients are reviewed for inclusion in the denominator), per method of case identification: **BOX**

35. Numerator time window (time period in which patients are reviewed for inclusion in the numerator), per method of case identification: **BOX**

36. Sample description, per set of identified cases (e.g., national convenience sample of women with…): **BOX**

37. Response rate (cases with complete data/eligible cases), per set of identified cases: **BOX**

38. Specify reasons for exclusion (& sample size), per set of identified cases (NOTE: the need for individualized care that contradicts recommended care would constitute an exclusion yet may not indicate poor/inappropriate care): **BOX**

39. Size of sample(s) analyzed, per set of identified cases: **BOX**

40. Specify tumor characteristics, per set of identified cases: **BOX**

41. Specify family history of breast cancer (first degree members), per set of identified cases: **BOX**

42. Specify proportion of patients in each stage of the disease at the time of study, per set of identified cases: **BOX**

43. Specify duration of the disease since diagnosis, per set of identified cases: **BOX**

44. Year diagnosed, per set of identified cases: **BOX**

45. How diagnosed, per set of identified cases: **BOX**

46. Sample age, per set of identified cases: **BOX**

47. Sample socioeconomic status, per set of identified cases: **BOX**

48. Sample race/ethnicity, per set of identified cases: **BOX**

49. Other demographic factors (e.g., location of permanent residence), per set of identified cases: **BOX**

50. Specify population's treatments (including surgery, radiotherapy, & systemic therapy), per set of identified cases: **BOX**

51. Specify type(s) of surgery (breast conserving surgery, mastectomy with or without reconstructive surgery, etc.), per set of identified cases: **BOX**

52. Overall concordance rate, per set of identified cases: **BOX**

53. Variations in rate of concordance according to stratification(s) of the population (e.g., age; vulnerable populations; hospitals; regions), per set of identified cases: **BOX**

54. Results re possible differences between groups (e.g., odds ratio) identified by stratification: **BOX**

55. Additional data (e.g., specificity; sensitivity; adaptability), per set of identified cases: **BOX**

56. Specify the evidence regarding the nature and adequacy of the (e.g., risk) adjustment(s) when cross-population or -database comparisons are made: **BOX**

57. Specify scientific evidence demonstrating a linkage to improvement in clinical or patient-reported outcomes, per set of identified cases: **BOX**

58. Results involving scores (e.g., QOL), per set of identified cases (i.e., overall score, with interpretation; scores per group identified by stratification; results reflecting possible differences between groups identified by stratification: e.g., differences in outcome [e.g., survival] associated with receipt/non-receipt of care 'X'): **BOX**

CURRENT STATUS:

59. Describe the state of use (i.e., over the past 3 years: e.g., pilot testing; used by organizations yet discontinued by developer): **BOX**

60. Describe the current use (*select all that apply*):
    - Accreditation (accountability)
    - Internal quality improvement
    - Decision-making (accountability)
    - External quality oversight (accountability)
    - Quality of care reporting
    - Research
    - Not being used
    - Other

61. If you answered "Other" to the preceding question, specify what you mean: **BOX**

62. If not in use, specify the reason(s): **BOX**

63. Describe the care setting(s) in which the QM is employed: **BOX**

64. Who are the professional(s) most likely to use this QM? **BOX**

65. Additional comments: **BOX**

DEVELOPMENT:

66. Who developed this QM? **BOX**

67. How was the search for evidence performed to support the QM? **BOX**

68. Type of evidence supporting the measure (*select all that apply*):
    Clinical practice guideline: evidence-based
    Clinical practice guideline: consensus-based
    Systematic review
    Selective/narrative review (e.g., manual search of literature)
    Expert (consensus) panel process
    Other

69. If you answered "Other" to the preceding question, specify what you mean: **BOX**

70. Bibliographic databases searched: **BOX**

71. How was the evidence appraised (e.g., grading quality or level of evidence) **BOX**

72. How was the wording/phrasing of the QM initially formulated (e.g., expert consensus)? **BOX**

73. How was the wording/phrasing of the QM refined? **BOX**

74. How was the QM pilot-tested? **BOX**

75. Which methods of case identification (e.g., cancer registries; claims databases) were used to pilot test the QM? Please name them. **BOX**

76. Which data sources (e.g., patient self-report; medical records), per method of case identification, were used to pilot test the QM? **BOX**

77. Denominator time window (time period in which patients are reviewed for inclusion in the denominator), per method of case identification: **BOX**

78. Numerator time window (time period in which patients are reviewed for inclusion in the numerator), per method of case identification: **BOX**

79. Sample description, per set of identified cases (e.g., national convenience sample of women with…): **BOX**

80. Response rate (cases with complete data/eligible cases), per set of identified cases: **BOX**

81. Specify reasons for exclusion (& sample size), per set of identified cases (NOTE: the need for individualized care that contradicts recommended care would constitute an exclusion yet may not indicate poor/inappropriate care): **BOX**

82. Size of sample(s) analyzed, per set of identified cases: **BOX**

83. Specify tumor characteristics: **BOX**

84. Specify family history of breast cancer (first degree members), per set of identified cases: **BOX**

85. Specify proportion of patients in each stage of the disease at the time of study, per set of identified cases: **BOX**

86. Specify duration of the disease since diagnosis, per set of identified cases: **BOX**

87. Year diagnosed, per set of identified cases: **BOX**

88. How diagnosed, per set of identified cases: **BOX**

89. Sample age, per set of identified cases: **BOX**

90. Sample socioeconomic status, per set of identified cases: **BOX**

91. Sample race/ethnicity, per set of identified cases: **BOX**

92. Other demographic factors (e.g., location of permanent residence), per set of identified cases: **BOX**

93. Specify population's treatments (including surgery, radiotherapy, & systemic therapy), per set of identified cases: **BOX**

94. Specify type(s) of surgery (breast conserving surgery, mastectomy with or without reconstructive surgery, etc.), per set of identified cases: **BOX**

95. Specify the psychometric properties of the QM established through pilot-testing (e.g., reliability; validity; sensitivity; specificity), per set of identified cases: **BOX**

96. Specify the psychometric properties of the QM established through pilot-testing (e.g., reliability; validity; sensitivity; specificity), per stratification, per set of identified cases: **BOX**

97. Specify the evidence regarding the adaptability of the QM (e.g., its applicability in different contexts/settings re breast cancer): **BOX**

98. Specify the evidence regarding the nature and adequacy of the (e.g., risk) adjustment(s) when cross-population or -database comparisons are made: **BOX**

99. What additional explicit conditions of use are specified for this QM (e.g., sample size, settings)? **BOX**

100. Specify any changes made to the QM following pilot-testing? **BOX**

101. Overall concordance rate, per set of identified cases: **BOX**

102. Variations in rate of concordance according to stratification(s) of the population (e.g., age; vulnerable populations), per set of identified cases: **BOX**

103. Specify scientific evidence demonstrating a linkage to improvement in clinical or patient-reported outcomes, per set of identified cases: **BOX**

104. Results involving scores (e.g., QOL), per set of identified cases (i.e., overall score, with interpretation; scores per group identified by stratification; results reflecting possible differences between groups identified by stratification: e.g., differences in outcome [e.g., survival] associated with receipt/non-receipt of care "X"): **BOX**

105. Additional comments: **BOX**

106. COMMENTS BOX

Trajectory of Scientific Development of Quality Indicators Used in Quality Measurement

INSTRUCTIONS: Select a level, then all sub-levels that apply from within it (e.g., I-ac).

Level I. Information/data are reported indicating that the quality indicator used in the present study to measure quality was developed *prior to its implementation in the present study*, according to the scientific principles by which any measure is formally developed (e.g., pilot testing, with appropriate rigor and data sources, its feasibility and ease of use, reliability, internal validity, etc.) ***AND***:

a. (reference to) data from the pre-study developmental process indicate *consistently sound*[1] psychometric properties (e.g., reliability; internal validity);
b. (reference to) data from the pre-study developmental process indicate *consistently or inconsistently unsound* psychometric properties;
c. data obtained/reported in the present study indicate *consistently sound* psychometric properties;
d. data obtained/reported in the present study indicate *consistently or inconsistently unsound* psychometric properties; or,
e. no pre-study developmental or study-related psychometric data are referred to or reported.

Level II. Information/data are reported indicating that the quality indicator used in the present study to measure quality was being *actively developed in the present study*, according to the scientific principles by which any measure is formally developed, ***AND***:

a. data obtained/reported in the present study indicate *consistently sound* psychometric properties;
b. data obtained/reported in the present study indicate *consistently or inconsistently unsound* psychometric properties;
c. no study-related psychometric data are reported.

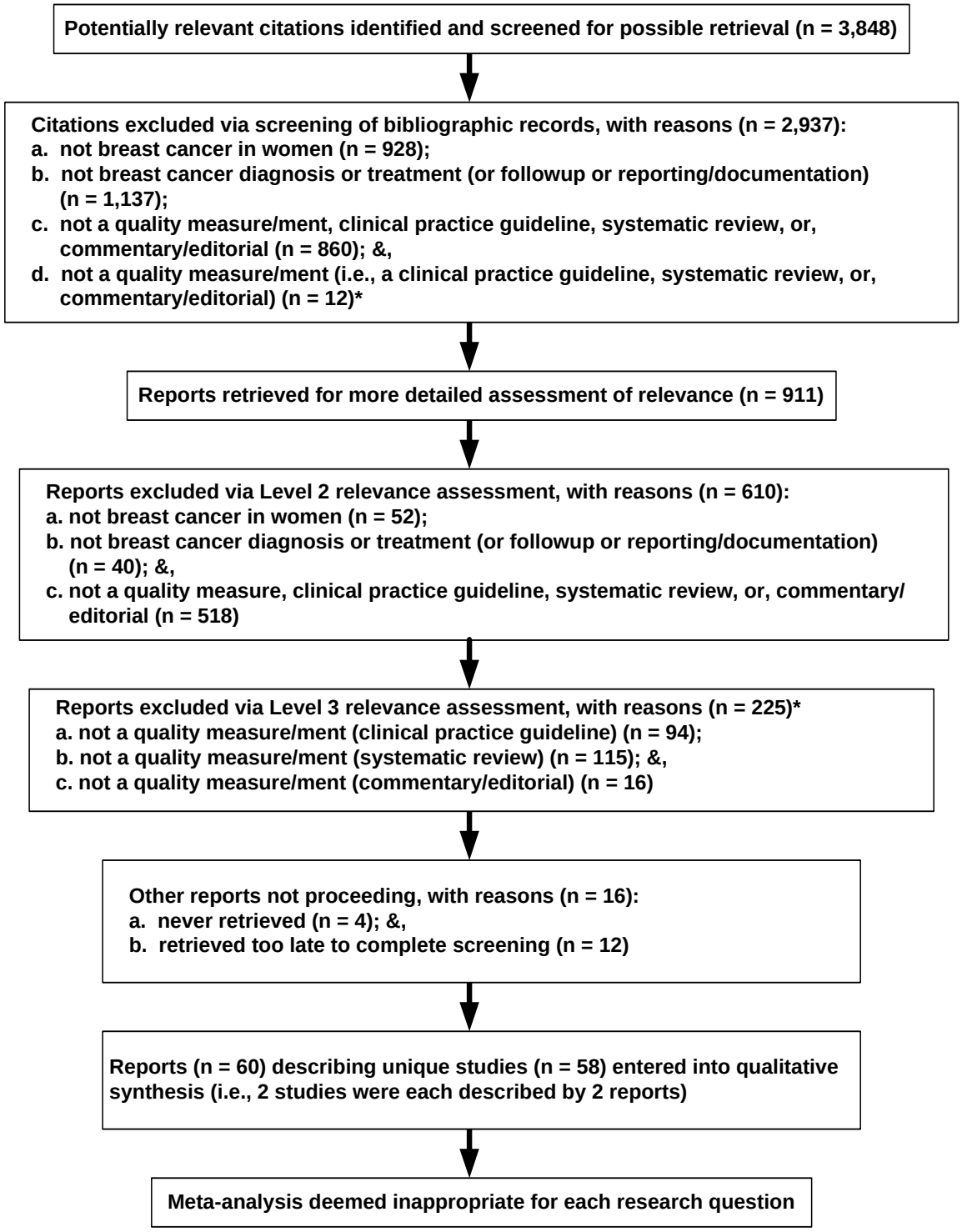
Level III. No information/data are reported indicating that the quality indicator used in the present study to measure quality has been, or in this study was being, developed according to the scientific principles by which any measure is formally developed, ***YET***:

a. data obtained/reported in the present study indicate *consistently sound* psychometric properties;
b. data obtained/reported in the present study indicate *consistently or inconsistently unsound* psychometric properties;
c. no study-related psychometric data are reported.

Level IV. There is no (reference to) pre-study developmental or study-related evidence indicating that the quality indicator used in the present study to measure quality was ever developed according to the scientific principles by which any measure is formally developed.

[1]*Consistently sound* describes a situation involving a given psychometric property (e.g., inter-observer reliability; construct validity) observed across more than one study (e.g., two studies report sound reliability) ***and/or*** to different psychometric properties observed either within one study or across more than one study (e.g., sound reliability; sound construct validity). *Consistently unsound* refers to a situation involving a given psychometric property observed across more than one study (e.g., both report unsound reliability) ***and/or*** to different psychometric properties observed either within one study or across more than one study (e.g., unsound reliability; unsound construct validity). *Inconsistently unsound* points to a situation involving a given psychometric property observed across more than one study (e.g., one reports sound reliability while another reports unsound reliability) ***and/or*** to different psychometric properties observed either within one study or across more than one study (e.g., sound reliability; unsound construct validity).

Appendix D. Modified QUOROM Flow Chart



*Due to narrowed scope of review.

Appendix E. Evidence Tables

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Appleton, 1998, UK	**Process:** • % reporting nature of specimen[IV]	• Overall: NR • By y: 1992: 60% 1994: 40% 1996: 100% • Links: NA	• Standard: NHSBSP guidelines, 1991-1992 • Data sources: pathology reports • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: research; internal quality improvement; quality of care reporting • Care setting: pathology centers • Professionals: pathologists	• Inclusion: convenience sample mastectomy specimens reports of invasive tumor, ALND issued by non-specialist pathologists, 1992, 1994, & 1996 • Exclusion: NR • Period: 4 y (1992-1996) • n specimens (enrolled/ evaluated): 40/30 (10 for each y) • Age (mean & range): NR • Race/ethnicity: NR • Case characteristics: NR • Socioeconomic status: NR • Funding: NR
	• % reporting type of tumor[IV]	• Overall: NR • By y: 1992: 100% 1994: 100% 1996: 100% • Links: NA		
	• % reporting grade of tumor[IV]	• Overall: NR • By y: 1992: 90% 1994: 80% 1996: 100% • Links: NA		
	• % reporting size of tumor[IV]	• Overall: NR • By y: 1992: 80% 1994: 70% 1996: 100% • Links: NA		
	• % reporting number of involved & sampled LN[IV]	• Overall: NR • By y: 1992: 100% 1994: 100% 1996: 100% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patient; enrolled = n qualified; evaluated = n analyzed; NHSBSP = National Health Service Breast Screening Programme; LN = lymph nodes; DCIS = ductal carcinoma in situ; state of use = last 3 y; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Appleton, 1998, UK (cont'd)	• % reporting involvement of resection margins[IV]	• Overall: NR • By y: 1992: 90% 1994: 90% 1996: 100% • Links: NA	• See above.	• See above.
	• % reporting side of mastectomy[IV]	• Overall: NR • By y: 1992: 60% 1994: 50% 1996: 100% • Links: NA		
	• % reporting size of specimen (macroscopic) [IV]	• Overall: NR • By y: 1992: 100% 1994: 90% 1996: 100% • Links: NA		
	• % reporting of affected quandrant (gross exam) [IV]	• Overall: NR • By y: 1992: 80% 1994: 60% 1996: 100% • Links: NA		
	• % reporting size of overlying skin[IV]	• Overall: NR • By y: 1992: 100% 1994: 100% 1996: 100% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; NHSBSP = National Health Service Breast Screening Programme; LN = lymph nodes; DCIS = ductal carcinoma in situ; state of use = last 3 y; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Appleton, 1998, UK (cont'd)	• % reporting distance of tumor from nipple[IV]	• Overall: NR • By y: 1992: 50% 1994: 30% 1996: 100% • Links: NA	• See above.	• See above.
	• % reporting description of cut surface of tumor[IV]	• Overall: NR • By y: 1992: 80% 1994: 80% 1996: 10% • Links: NA		
	• % reporting description of skin[IV]	• Overall: NR • By y: 1992: 0% 1994: 20% 1996: 0% • Links: NA		
	• % reporting description of nipple[IV]	• Overall: NR • By y: 1992: 50% 1994: 50% 1996: 100% • Links: NA		
	• % reporting presence or absence of fascia or skeletal muscle[IV]	• Overall: NR • By y: 1992: 0% 1994: 0% 1996: 10% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; NHSBSP = National Health Service Breast Screening Programme; LN = lymph nodes; DCIS = ductal carcinoma in situ; state of use = last 3 y; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Appleton, 1998, UK (cont'd)	• % reporting presence or absence of vascular invasion[IV]	• Overall: NR • By y: 1992: 90% 1994: 60% 1996: 100% • Links: NA	• See above.	• See above.
	• % reporting involvement of apical LN[IV]	• Overall: NR • By y: 1992: 40% 1994: 80% 1996: 80% • Links: NA		
	• % reporting distance of tumor to resection margins[IV]	• Overall: NR • By y: 1992: 100% 1994: 80% 1996: 100% • Links: NA		
	• % reporting presence or absence of concurrent DCIS[IV]	• Overall: NR • By y: 1992: 100% 1994: 70% 1996: 100% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; NHSBSP = National Health Service Breast Screening Programme; LN = lymph nodes; DCIS = ductal carcinoma in situ; state of use = last 3 y; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Appendix E. Evidence Tables (continued)

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Appleton, 1998, UK (cont'd)	• % reporting size of concurrent DCIS[IV]	• Overall: NR • By y: 1992: 38% 1994: 33% 1996: 100% • Links: NA	• See above.	• See above.
	• % reporting description of background breast[IV]	• Overall: NR • By y: 1992: 90% 1994: 90% 1996: 80% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; NHSBSP = National Health Service Breast Screening Programme; LN = lymph nodes; DCIS = ductal carcinoma in situ; state of use = last 3 y; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Bernhard, 1997, Netherlands	**Process:** • Change in QOL by time & treatment arm; postmenopausal women, node(-) BC who underwent adjuvant therapy[Ia]	• Overall: NR • Physical well-being: Tamoxifen: 83.4 (1 mo) Tmx + CM: 83.2 (1 mo) Tamoxifen: 85.5 (3 mo) Tmx + CMF: 78.2 (3 mo) Tamoxifen: 86.5 (6 mo) Tmx + CMF: 85.3 (6 mo) • Mood: Tamoxifen: 78.8 (1 mo) Tmx + CMF: 78.2 (1mo) Tamoxifen: 80.7 (3 mo) Tmx + CMF: 76.8 (3 mo) Tamoxifen: 81.8 (6 mo) Tmx +CMF: 82.0 (6 mo) • PACIS: Tamoxifen: 78.1(1 mo) Tmx + CMF: 71.2 (1 mo) Tamoxifen: 81.0 (3 mo) Tmx + CMF: 69.5 (3 mo) Tamoxifen: 80.8 (6 mo) Tmx + CMF: 78.7 (6 mo) • Links: NA	• Standard: IBCSG form for assessing impact of adjuvant therapy on QOL; LASA scales (physical well-being; mood; appetite) • Data sources: pts self-reported status using IBCSG form • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: research • Care setting: hospitals; cancer centers; • Professionals: oncologists	• Inclusion: convenience sample pre- & postmenopausal women with operable BC • Exclusion: pts who completed no 1993 version QOL forms; completed forms in multiple languages • Period: 2 y (1993-1995) • n patients (enrolled/ evaluated): 345/312 • Age (mean & range): (NR) • Race/ethnicity: NR • Case characteristics: women with operable BC • Socioeconomic status: NR • Funding: ACS; NHMRC of Australia grants

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; PACIS = Perceived Adjustment to Chronic Illness Scale; ACS = American Cancer Society; NHMRC = National Health and Medical Research Council; state of use = last 3 y; LASA = Linear analogue self-assessment; Higher scores in scale = better quality of life; QOL = quality of life; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Bickell, 2000, US	**Process:** • % appropriate use of BCS[IV]	• Overall: 59% • By hospital: 49-69% • Links: NA	• Standard: Mount Sinai Health Final Guidelines for Stage I & II BC treatment, 1994-1995 • Data sources: tumor registries; hospital discharge & pathology databases from 4 teaching hospitals NY area • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: internal quality improvement; external quality oversight; research • Care setting: hospitals; cancer centers; RT centers • Professionals: oncologists; surgeons; GPs; RT oncologists	• Inclusion: convenience sample women BC receiving definitive surgical treatment of primary stage I or II in 4 hospitals in NY • Exclusion: treatment in other hospital; recurrent cancers; males; DCIS • Period: 2 y (1995-1996) • n patients (enrolled/ evaluated): 1,258/723 • Age (mean & range): 65 (NR) y • Race/ethnicity: Black (5-12%) • Case characteristics: stage I or II BC • Socioeconomic status: Medicaid 4-23% • Funding: United Hospital Fund
	• % appropriate use of RT after BCS[IV]	• Overall: 81% • By hospital: 69-87% • Links: NA		
	• % appropriate use of adjuvant systemic treatment , stage ≥ 1B[IV]	• Overall: 78% • By hospital: 71-86 % • By age: <50 y: 59-87% ≥50 y: 65-85% • Links: NA		
	• % appropriate use of ALND[IV]	• Overall: 87% • By hospital: 79-92% • Links: NA		
	• % quality of hormone receptor assay[IV]	• Overall: 85% • By hospital: 56-99% • Links: NA		
	Access: • % referral to oncologist[IV]	• Overall: 64% • By hospital: 50-81% • Links: NA		
	• % evidence of surgical options discussion[IV]	• Overall: NR • By hospital: 65-100% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; ESBC = early stage breast cancer; BCS = breast- conserving surgery; RT = radiotherapy; GP = general practitioner; NY = New York; DCIS = ductal carcinoma in situ; state of use = last 3 y; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Bickell, 2003, US	**Structure:** • % cases not receiving recommended treatment (RT after BCS or systemic therapy) due to system failure[IV]	• Overall: 32% (14/44) • Links: NA	• Standard: Mount Sinai Health Final Guidelines for Stage I-II BC treatment, 1994-1995 • Data sources: Interview of 13 surgeons who treated pts • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: internal quality improvement • Care setting: hospitals; cancer centers; RT centers • Professionals: oncologists; surgeons; GPs; RT oncologists	• Inclusion: convenience sample women ESBC who had under-use of treatment; RT or adjuvant therapy not recommended when indicated • Exclusion: NR • Period: 2 y (1998-1999) • n patients (enrolled/ evaluated): NR/44 • Age (mean & range): NR • Race/ethnicity: NR • Case characteristics: stage I or II BC • Socioeconomic status: NR • Funding: Department of Health Policy, Mount Sinai School of Medicine & the Mount Sinai NYU Health System

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; ESBC = early stage breast cancer; BCS = breast-conserving surgery; RT = radiotherapy; GP = general practitioner; state of use = last 3 y; BC = breast cancer; MD = medical doctor; NYU = New York University; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Bower, 2000, US	**Outcome**: • % change in QOL over time[lac]	• Overall: NR • Energy/fatigue: 60 • Physical functioning: 80.35 • Role limitation- physical: 75.80 • Emotional well-being: 75 • Role limitation- emotional: 77 • Social functioning: 86 • Bodily pain: 78.60 • General health: 73 • Links: NA	• Instrument(s): RAND 36-item Health Survey 1.0 (physical; role function-physical; body pain; social functioning; emotional well-being; role function-emotional; energy/fatigue; general health perceptions) • Data sources: tumor registry; medical records; self-reported questionnaires • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: external quality oversight; research • Care setting: hospitals; cancer centers; RT centers • Professionals: oncologists; surgeons; GPs; RT oncologists	• Inclusion: convenience sample women ESBC (stage 0-II); diagnosed <5 y; completed adjuvant therapy; currently disease-free; only treated with tamoxifen (cancer survivors) • Exclusion: no English-spoken • Period: 3 y (1994-1997) • n patients (enrolled/ evaluated): NR/1,957 • Age (mean & range): 55 (NR) y • Race/ethnicity: White (80%); Black (12.5%) • Case characteristics: BC survivors; currently tamoxifen (47.5%) • Socioeconomic status: married (70%); employed (45%); income/ y > U$ 75,000 (36.5%) • Funding: NCI

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; QOL = quality of life; state of use = last 3 y; GP = general practitioner; NCI = National Cancer Institute; ESBC = early stage breast cancer; RT = radiotherapy; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance Data: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/Data Source(s)/ Developmental History/Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Brenin, 1999, US	• % appropriate use of axillary lymph node dissection[IV]	• Overall: 93.2% (n = 15,992) • By age (y): <70: 97% >70: 86% • By payer: Private vs. Government: OR 1.4 S • Links: NA	• Standard: NIH Consensus Development Conference, 1990 • Data sources: National Cancer Data Base • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: external quality oversight; research; decision-making • Care setting: hospitals; cancer centers; RT centers • Professionals: clinicians; oncologists; RT oncologists; surgeons	• Inclusion: national convenience sample women BC, stage I or II treated in US hospitals, 1994 • Exclusion: not eligible; stage III or IV; subcutaneous mastectomy; not lymph nodes examined undergoing ALND • Period: 1 y (1994) • n patients (enrolled/ evaluated): 17,931/17,151 • Age (mean & range): 61.3 (22 -103) y • Race/ethnicity: NR • Case characteristics: women BC stage I or II; node (+) 5.2%; • Socioeconomic status: NR • Funding: CCACS; ACR
	• % appropriate use of BCS[IV]	• Overall: 44.5% • Links: NA		
	• % appropriate use of RT on axilla[IV]	• Overall: 5.2% (n = 899) • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; RT = radiotherapy; DCIS = ductal carcinoma in situ; BC = breast cancer; CCACS = Commission on Cancer of the American College of Surgeons; ACR = American College of Radiology; BCS = breast-conserving surgery; NIH = National Institute of Health; ALND = axillary lymph node dissection; state of use = last 3 y; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance Data: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/Data Source(s)/ Developmental History/Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Cheung, 1999, Hong Kong	**Process:** • % appropriate use of BCS[IV]	• Overall: 32% • Links: NA	• Standard: BASO guidelines, 1995 • Data sources: medical records • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: internal quality improvement; research • Care setting: hospitals; cancer centers; RT centers • Professionals: GPs; oncologists; surgeons	• Inclusion: convenience sample women on whom author operated post CPG; women operable primary BC <5 cm; for BCS only tumor size, 3 cm • Exclusion: NR • Period: NR • n patients (enrolled/ evaluated): 100/100 • Age (mean & range): 53 (25-83) y • Race/ethnicity: NR • Case characteristics: BC Grade I-III; node (-) (57%); invasive ductal (72%); vascular invasion (34%); ER (+) (58%) • Socioeconomic status: NR • Funding: NR
	• % appropriate use of mastectomy[IV]	• Overall: 68% • Links: NA		
	• % appropriate use of CT[IV]	• Overall: 30% • Links: NA		
	• % appropriate use of tamoxifen[IV]	• Overall: 28% • Links: NA		
	• % (>90%) quality of FNA samples from lesions which subsequently prove to be BC should be adequate as deemed by the breast pathologist[IV]	• Overall: 99% • Links: NA		
	• % (90%) appropriate use of cytology or needle histology in palpable BC diagnosed pre-operatively [IV]	• Overall: 82% • Links: NA		
	• % (<10%) quality of breast biopsy: primary operable BC receives frozen section[IV]	• Overall: 0% • Links: NA		
	• % gross margins identified without incision into de specimen; & carefully orientated for the pathologist[IV]	• Overall: 100% • Links: NA		
	• % (90%) appropriate number of therapeutic operations (≤2) for women having BCS[IV]	• Overall: 100% • Links: NA		
	• % quality of technique to determine histological node status for all invasive tumors, by sampling or clearance[IV]	• Overall: 100% • Links: NA		
	Access: • % (>80%) urgent referrals seen within 5 working d of referral receipt[IV]	• Overall: 95% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; CT: chemotherapy; RT: radiotherapy; HT: hormone therapy; GP = general practitioner; ER: estrogen receptor; PR: progesterone receptor; CPG: clinical practice guidelines; DCIS: ductal carcinoma in situ; BC: breast cancer; BASO: British Association of Surgical Oncology; FNA: fine-needle aspiration; state of use: last 3 y; BCS = breast-conserving surgery; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance Data: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/Data Source(s)/ Developmental History/Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Cheung, 1999, Hong Kong (cont'd)	• % (70%) all other new referrals seen within 15 working d[IV]	• Overall: 50% • Links: NA	• See above.	• See above.
	• % appropriate use of imaging &/or cytology or needle biopsy, if required; to be performed at the initial visit[IV]	• Overall: 0% • Links: NA		
	• % (<10%) all new women BC should attend the clinic/hospital on >2 occasions for diagnostic purposes[IV]	• Overall: 41% • Links: NA		
	• % pts attending for diagnostic purposes seen at least on 1 occasion by breast specialist surgeon[IV]	• Overall: 100% • Links: NA		
	• %(>90%) women requiring an operation for diagnostic purposes should be admitted 14 d of investigations leading to surgical decision[IV]	• Overall: 68% • Links: NA		
	• %(>90%): BC pts or an abnormality requiring diagnostic operation; told within 5 working d leading diagnosis[IV]	• Overall: 67% • Links: NA		
	• % (100%) BC pts given opportunity to see a BC nurse[IV]	• Overall: 100% • Links: NA		
	• % (90%) women admitted for operation within 21 d of surgical decision to operate for therapeutic purposes[IV]	• Overall: 93% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; CT = chemotherapy; RT = radiotherapy; HT = hormone therapy; GP = general practitioner; ER = estrogen receptor; PR = progesterone receptor; CPG = clinical practice guidelines; DCIS = ductal carcinoma in situ; BC = breast cancer; BASO = British Association of Surgical Oncology; FN = fine-needle aspiration; state of use = last 3 y; BCS = breast-conserving surgery; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance Data: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/Data Source(s)/ Developmental History/Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Cheung, 1999, Hong Kong (cont'd)	**Outcome:** • % (<10%) pts developing local recurrence after BCS within 5 y[IV]	• Overall: 0% • Links: NA	• See above.	• See above.
	• % (<10%) pts developing local recurrence after mastectomy within 5 y[IV]	• Overall: 2.6% • Mastectomy cases: 36% • Links: NA		
	• % appropriate use of prophylactic RT employed in women with high risk of flap recurrence[IV]	• Overall: 2% (36% of mastectomies 7) • Links: NA		
	• % (<10%) regional recurrence needing further surgery or RT; at 5 y[IV]	• Overall: 0% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; CT = chemotherapy; RT = radiotherapy; HT = hormone therapy; GP = general practitioner; ER = estrogen receptor; PR = progesterone receptor; CPG = clinical practice guidelines; DCIS = ductal carcinoma in situ; BC = breast cancer; BASO = British Association of Surgical Oncology; FN = fine-needle aspiration; state of use = last 3 y; BCS = breast-conserving surgery; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance Data: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/Data Source(s)/ Developmental History/Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Chie, 1999, China	**Outcome:** • % women with significant improvement in QOL scores in clinical phases of BC: diagnosis; surgery; initial CT; initial RT; follow-up; recurrence**[Iac]	• Overall: NR • Links: NA	• Instrument(s): SF-36 Chinese version; EORTC-QLQ-C30* • Data sources: self- reported questionnaires to pts before RT (pretest); after RT (post-test) & recall of pretest; cancer registry • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: internal quality improvement • Care setting: hospitals; cancer centers; RT centers • Professionals: oncologists; surgeons; GPs; RT oncologists	• Inclusion: convenience sample women diagnosed or treated for BC in breast surgery; RT & oncology outpatients departments; or in general surgical wards of National Taiwan University Hospital • Exclusion: high-dose regimens that necessitated hospitalization & terminal pts in palliative care unit • Period: 2 mo (1997) • n patients (enrolled/ evaluated): 115/115 • Age (mean & range): NR (<40->65) y • Race/ethnicity: NR • Case characteristics: clinical phases: diagnosis (35.7%); surgery (9.6%); initial CT (13%); initial RT (7%); follow-up after treatment (27.8%); recurrence (7%) • Socioeconomic status: married (73.9%); employed (50.4%%) • Funding: NR

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; ESBC = early stage breast cancer; BCS = breast-conserving surgery; RT = radiotherapy; CT = chemotherapy; QOL = quality of life; EORTC-QLQ-C30 = European Organization for Research and Treatment of Cancer Quality of Life Questionnaire - cancer 30; SF-36 = medical outcome survey 36-item short form health surveys; state of use = last 3 y; * Validated for BC patients; **Includes: Role functioning; emotional functioning; cognitive functioning; global quality of life; nausea & vomiting; loss of appetite; constipation; GP = general practitioner; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Christensen, 2002, Denmark	**Process**: • % appropriate use of preoperative diagnosis by FNA cytology, needle histology or biopsy[IV]	• Overall: 100% • Links: NA	• Standard: European Guidelines for Quality Assurance in Mammography screening, 1996; Guidelines for cytology procedures and reporting in BC screening, 1993 • Data sources: hospital registries of Copenhagen (pathology & mammography screening program) • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: internal quality improvement; external quality oversight • Care setting: hospitals; cancer centers; RT centers • Professionals: oncologists; surgeons; GPs; RT oncologists; pathologists	• Inclusion: women with (+) mammography screening followed by surgery • Exclusion: data missing; lymphoma • Period: 6 y (1991-1997) • n patients (enrolled/ evaluated): 4,111/4,111 • Age (mean & range): 61 (50-72) y • Race/ethnicity: NR • Case characteristics: NR • Socioeconomic status: NR • Funding: NR

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; NCI = National Cancer Institute; state of use = last 3 y; FNA = fine- needle aspiration; FP = false positive; FN = false negative; BC = breast cancer; (+) = positive; GP = general practitioner; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures - Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Cochrane, 1997, UK	**Process:** • % appropriate use of referrals to surgeon by GP according to breast referral guidelines[IV]	• Overall: 60% • By age: <40 y: 54% >40 y: 64% S • Links: NA	• Standard: NHSBSP breast referral guidelines, 1995 • Data sources: referral database • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: internal quality improvement • Care setting: hospitals; cancer centers • Professionals: surgeons; oncologists; RT oncologists; GPs	• Inclusion: random sample women > 35 y with breast problems referred to surgeon by GP in Rapid Access Breast Clinic in Cardiff, UK • Exclusion: screening cases; tertiary referrals; abnormal Mx • Period: 8 mo (1995) • n patients (enrolled/ evaluated): 2,332/2,332 • Age (mean & range): 44 (11-90) y • Race/ethnicity: NR • Case characteristics: women with BC symptoms: lumps (60%); pain (32%); nipple discharge (8%); skin change (5.2%) • Socioeconomic status: NR • Funding: Patterns of Care Study

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; BC = breast cancer; enrolled = n qualified; evaluated = n analyzed; RT = radiotherapy; state of use = last 3 y; Mx = mammogram; NHSBSP = NHS Breast Screening Programme; GP = general practitioner; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance Data: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/Data Source(s)/ Developmental History/Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Cornfeld, 2001, US	**Structure**: • % board certified MDs in medical oncology[IV]	• Overall: 100% • Links: NA	• Standard: NCCN Guidelines, 1999 • Data sources: survey delivered to private practice oncologists (n = 11); medical records • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: internal quality improvement • Care setting: hospitals; cancer centers • Professionals: oncologists; surgeons	• Inclusion: convenience sample women with nonmetastatic BC treated in private practice of 11 oncologists surveyed • Exclusion: NR • Period: 9 mo (1999-2000) • n participants (enrolled/ evaluated): NR/220 • Age (mean & range): NR • Race/ethnicity: NR • Case characteristics: NR • Socioeconomic status: NR • Funding: NR
	• % availability of office procedure manual used for CT administration[IV]	• Overall: 100% • Links: NA		
	• % documentation of CME credits 2 y preceding each audit[IV]	• Overall: 100% • Links: NA		
	• % present CT flow sheets on active treatment charts[IV]	• Overall: 99% • Links: NA		
	Process: • % present body surface area calculations on CT flow sheets[IV]	• Overall: 90% • Links: NA		
	• % appropriate use of tamoxifen BC ER (+)[IV]	• Overall: 100% • Links: NA		
	• % appropriate use of guidelines for follow-up surveillance of BC[IV]	• Overall: NR • By practice: PE: 100% Mammography: 98% Gynecologic follow-up: 76% • Links: NA		
	Outcome: • % participation of oncologists in pts satisfaction survey[IV]	• Overall: 4.91* • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; CT = chemotherapy; CME = continuing medical education; BC = breast cancer; HT = hormone therapy; ER (+) = estrogen receptor positive; SD = standard deviation; * = number of participants were 3; state of use = last 3 y; NCCN = National Comprehensive Cancer Network; PE = physical examination; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Craft, 2000, Australia	**Process:** • % appropriate use of RT after BCS[IV]	• Overall: 98% (85/87) • Links: NA	• Standard: NHMRC CPG for the management of early BC, 1995 • Data sources: dataset of survey conducted by the Provincial Surgeons of Australia; pathology reports; treatment facility records • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: internal quality improvement • Care setting: hospitals; cancer centers; RT centers • Professionals: surgeons; RT oncologists; oncologists; pathologists; nurses	• Inclusion: convenience sample women newly diagnosed primary localized invasive BC treated in ACT, 1997-1998 • Exclusion: males; distant metastases; in situ • Period: 14 mo (1997-1998) • n patients (enrolled/ evaluated): 217/191 • Age (mean & range): 57 (25-88) y • Race/ethnicity: NR • Case characteristics: women premenopausal (29%); postmenopausal (57%); invasive BC (93%); HR (+) (81%); tumor size 1.1-2 cm (43%); node (-) (56%); tumor type (invasive ductal) grade 2 (35%) • Socioeconomic status: urban (67%) • Funding: Commonwealth Department of Health and Aged Care Cancer Screening Unit
	• % appropriate use of ALND for invasive BC[IV]	• Overall: 91% (173/190) • Links: NA		
	• % appropriate use of some form of adjuvant systemic therapy in node (+) or tumor >2 cm[IV]	• Overall: 96% (95/99) • Links: NA		
	• % appropriate use of adjuvant CT in <50 y; node (+)[IV]	• Overall: 100% (27/27) • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; BC = breast cancer; BCS = breast-conserving surgery; ALND = axillary lymph node dissection; ACT = Australian capitol territory; enrolled = n qualified; evaluated = n analyzed; NHMRC = National Health and Medical Research Council; CPG = clinical practice guideline; CT = chemotherapy; RT = radiotherapy; state of use = last 3 y; HR = hormone receptor; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
DeMichele, 2003, US	**Process**: • % appropriate use of CT (recommended)[IV]	• Overall: 74% (156/208) • By age: 50-54 y: 98% (57/58) 55-60 y: 85% (47/55) 61-69 y: 52% (40/52) 70+: 23% (10/43) • Links: NA	• Standard: St. Gallen Consensus Conference, 1992-1995 (update)* • Data sources: University of Pennsylvania pt information system database • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: external quality oversight • Care setting: cancer centers; hospitals; RT centers • Professionals: oncologists; surgeons; RT oncologists	• Inclusion: convenience sample women BC ≥ 50 y evaluated at UPCC 1993-1997 & eligible for adjuvant chemotherapy • Exclusion: missing data • Period: 5 y (1993-1997) • n patients (enrolled/ evaluated): 367/208 • Age (mean & range): 59(50-86) y • Race/ethnicity: NR • Case characteristics: women BC node (+) (61%); ER&PR (+) (46%); tumor size T1 (47%) • Socioeconomic status: NR • Funding: NR
	• % non–eligible pts receiving CT (over treatment)[IV]	• Overall: 11% (23/132) • Links: NA		
	• % appropriate use of CT (received) (patient acceptance)[IV]	• Overall: 74% (154/208) • By age: 50-59 y: 74% (72/97) 60-69 y: 74% (36/47) 70-86 y: 70% (7/10) • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; RT = radiotherapy; HR = hormone receptor; state of use = last 3 y; UPCC = University of Pennsylvania Cancer Center; ER = estrogen receptor; PR = progesterone receptor; BC = breast cancer;
*Recommendations for women <65 y; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Du, 2001, US	**Process:** • % appropriate use of CT within 6 mo of diagnosis[IV]	• Overall: 12.4% (708/5,697) • By Stage (1996): I: 3% II: 19.5% III: 43.7% IV: 40.9% • By age: 65-69 y: 20.5% 70-74 y: 13.9% 75-79 y: 8.7% >80 y: 3.3% • Links: NA	• Standard: NIH Consensus Conference Development, 1990 • Data sources: SEER registry; Medicare claim data • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: external quality oversight • Care setting: hospitals; cancer centers • Professionals: oncologists; surgeons; GPs	• Inclusion: population-based sample women ≥ 65 y diagnosed BC, 1991-1996 • Exclusion: women with no full coverage of Medicare; members of HMO • Period: 6 y (1991-1996) • n patients (enrolled/ evaluated): 35,060/5,697 • Age (mean & range): NR (>65) y • Race/ethnicity: NR • Case characteristics: women BC stage I-IV; > 65 y • Socioeconomic status: Medicare 100% • Funding: Department of Defense; NCI; Sealy & Smith Foundation
	• % appropriate use CT in node (+); ER (+); within 6 mo of diagnosis[IV]	• Overall: 27% (1996) • Links: NA		
	• % appropriate use CT in node (+); ER (-); within 6 mo of diagnosis[IV]	• Overall: 61.5% (1996) • Links: NA		
	• % appropriate use CT in node (-); ER (+); within 6 mo of diagnosis[IV]	• Overall: 2% (1996) • Links: NA		
	• % appropriate use CT in node (-); ER (-); within 6 mo of diagnosis[IV]	• Overall: 17.9% (1996) • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BC = breast cancer; state of use = last 3 y; GP = general practitioner; NCI = National Cancer Institute; SEER = Surveillance, Epidemiology, and End Results; CT = chemotherapy; HMO = Health Maintenance Organization; ER = estrogen receptor; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance Data: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/Data Source(s)/ Developmental History/Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Du, 2003, US	**Process:** • % appropriate use of CT[IV]	• Overall: 28.7% • By stage: I: 11.3% II: 47% IIIA: 68% • By age: <45 y: 66% 45-49 y: 54.9% 50-54 y: 44.2 % 55-59 y: 31% 60-64 y: 18.1% 65-69 y: 12.3% 70-74 y: 7.1% > 75 y: 3.4% • Links: NA	• Standard: NIH Consensus Development Conference, 1990 • Data sources: New Mexico tumor registry; pathology laboratories & hospitals in New Mexico • Developmental period: NR • Reference Standard(s) (Publication Date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: internal quality improvement • Care setting: hospitals; cancer centers • Professionals: oncologists	• Inclusion: population-based sample women ≥20 y stage I-IIIA BC treated & registered in New Mexico tumor registry, 1991-1997 • Exclusion: stage other than I-IIIA, <20 y • Period: 7 y (1991-1997) • n patients (enrolled/evaluated): NR/5,101 • Age (mean & range): 61(20-98) y • Race/Ethnicity: NR • Case characteristics: NR • Socioeconomic status: NR • Funding: NCI, NIH, Smyth Foundation
	• % appropriate use of CT + HT (tamoxifen)[IV]	• Overall: 9.6% • By age: <45 y: 15.8% 45-49 y: 17% 50-54 y: 18.5 % 55-59 y: 11.7% 60-64 y: 8% 65-69 y: 5.4% 70-74 y: 4.0% > 75 y: 0.8% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; NCI = National Cancer Institute; NIH = National Institute of Health; CT = chemotherapy; BC = breast cancer; CPG = clinical practice guideline; state of use = last 3 y; HT = hormone therapy; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance Data: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/Data Source(s)/ Developmental History/Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Edge, 2002, US	**Process:** • % appropriate use of ALND after BCS[IV]	• Overall: 63.4% (294/464) • By age: 67-69 y: 84% 70-74 y: 73% 75-79 y: 62% > 80 y: 33% S • By race/ethnicity: White: 64% Black: 60 % NS • By education: < High school: 60% ≥ High school: 66% • By Payer: HMO: 64% Private: 65% • Links: NA	• Standard: NIH Consensus Development Conference 1990; Steering committee on CPGs for the care & treatment of BC, CARO • Data sources: pt interviews; medical records • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: decision-making; external quality oversight • Care setting: hospitals; pathology centers • Professionals: oncologists; surgeons; RT oncologists; GPs	• Inclusion: convenience sample women ≥67 y stage T1-T2 (N0N1) M0, newly diagnosed histologically confirmed invasive BC who underwent BCS • Exclusion: DCIS; bilateral, multicentric, locally advanced disease; incomplete data; history of prior or secondary BC; surgery other than BCS • Period: 2 y (1995-1997) • n patients (enrolled/ evaluated): 1,377/464 • Age (mean & range): NR • Race/ethnicity: White (91%); Black (9%) • Case characteristics: stage I (84.9%); stage IIA (9%); stage IIB (1.7%); HR (+) (69.4%) • Socioeconomic status: education: < High school (66.4%); HMO (73.2%) • Funding: AHRQ & Department of the Army grants
	• % appropriate use of RT after BCS[IV]	• Overall: 77.8% (361/464) • With ALND 54.7% • Links: NA		
	• % appropriate use of adjuvant systemic therapy after BCS[IV]	• Overall: 70.7% (328/464) • By treatment: CT: 10.1% Tamoxifen: 89.9% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; BC = breast cancer; BCS = breast-conserving surgery; ALND = axillary lymph node dissection; NIH = National Institute of Health; CARO = Canadian Association of Radiation Oncologists; GP = general practitioner; MO = non-metastatic; DCIS = ductal carcinoma in situ; RT = radiotherapy; state of use = last 3 y; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Engel, 2002, Germany	**Process:** • % appropriate use of BCS[IV]	• Overall: NR • By region: 39.3%-57.7% • Links: NA	• Standard: NIH Consensus Development Conference, 1990; St. Gallen's Consensus for adjuvant systemic therapy, 1995-1998 (update) • Data sources: data submitted by pathologists, gynecologists, surgeons & radiologists, 6 regions in Germany • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: external quality oversight; decision-making; quality of care reporting; research • Care setting: hospitals; cancer centers; RT centers • Professionals: oncologists; RT oncologists; surgeons; GPs	• Inclusion: convenience sample women any stage BC residing in one of 6 regions*, Germany • Exclusion: NR • Period: 3 y (1996-1998) • n patients (enrolled/ evaluated): 9,210/8,661 • Age (mean & range): NR (<50->70) y • Race/ethnicity: NR • Case characteristics: HR (+) 80%; stage 0-IV; LN status known • Socioeconomic status: NR • Funding: German Federal Ministry of Health
	• % appropriate use of RT after BCS[IV]	• Overall: NR • By region: 80.6%-85.0% • Links: NA		
	• % appropriate use of RT after mastectomy[IV]	• Overall: NR • By region: 10.4%-32.2% • Links: NA		
	• % appropriate use of CT in premenopausal; node (+); HR (+) (1995) [IV]	• Overall: NR • By region: 42.9%-84.6% • Links: NA		
	• % appropriate use of CT & HT in premenopausal; node (+); HR (+) (1995-1998) [IV]	• Overall: NR • By region: 10.3%-57.1% • Links: NA		
	• % appropriate use of CT in premenopausal; node (+); HR (-) (1995/1998) [IV]	• Overall: NR • By region: 63.6%-92.3% • Links: NA		
	• % appropriate use of tamoxifen in postmenopausal; node (+); HR (+) (1995) [IV]	• Overall: NR • By region: 30.1%-61.5% • Links: NA		
	• % appropriate use of CT & HT in postmenopausal; node (+); HR (+) (1995/1998) [IV]	• Overall: NR • By region: 9.1%-32.2% • Links: NA		
	• % appropriate use of CT in postmenopausal; node (+); HR (-) (1995/1998) [IV]	• Overall: NR • By region: 38.5%-69.6% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BC = breast cancer; HR (+) = hormone receptor positive; ER (-) = hormone receptor negative; FI = family income; BCS = breast-conserving surgery; RT = radiotherapy; CT = chemotherapy; HT = hormone therapy; node (+) = lymph node positive; NIH = national health institute; state of use = last 3 y; GP = general practitioner; *6 regions = Aachen; Dresden; Jena; Marburg; Munich; Stuttgart; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Foroudi, 2002, Canada	• % appropriate use of RT[IV]	• Overall: 56.3%-72.4%* • Initial: 50%-59.2%* • Later: 6.3%-13.3%* • Links: NA	• Standard: North American CPG (n = 12); others • Data sources: North American population-based cancer registries (SEER & Ontario Cancer registry); National Cancer database; single institutions; multi-institution databases • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR	• Inclusion: population-based sample women with BC eligible for RT from North American population • Exclusion: NR • Period: NR • n patients (enrolled/ evaluated): NR • Age (mean & range): NR • Race/ethnicity: NR • Case characteristics: NR • Socioeconomic status: NR • Funding: NR
	• % appropriate use of RT; in situ; moderate risk, prefer BCT (i) [IV]	• Overall: 37.7%* • Links: NA		
	• % appropriate use of RT: stage I & II (pN0), prefer BCT ; receiving BI (i) [IV]	• Overall: NR • Stage I: 57%* • Stage II: 52.2%* • Links: NA		
	• % appropriate use of RT: stage I &II (pN0), postmastectomy, R1 or 2, receiving RI (i) [IV]	• Overall: NR • Stage I: 0.6-0.8%* • Stage II:0. 77-0.83%* • Links: NA		
	• % appropriate use of RT: stage II (pN1); <4N(+); postmastectomy, R1 or 2, receiving RI (i) [IV]	• Overall: 0.3%* • Links: NA		
	• % appropriate use of RT: stage II (pN1); <4N(+); postmastectomy, R0, receiving RI (i) [IV]	• Overall: 3.9-4.2%* • Links: NA		
	• % appropriate use of RT: stage II (pN1); >3N(+); postmastectomy, receiving RI (i) [IV]	• Overall: 5.7-6.1%* • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; LN = lymph nodes; BCS = breast conserving surgery; RT = radiotherapy; HR = Hormone receptor; CI = contraindication; CT = chemotherapy; HT = hormone therapy; CPG = clinical practice guidelines; BI = breast irradiation; BCT = breast-conserving therapy; R0 = no residual tumor; R1 = microscopic residual tumor; R2 = macroscopic residual tumor; RI = radiation therapy; (i) = initial treatment; PRT = any palliative RT; LCIS = lobular carcinoma in situ; (r) = progression or relapse; state of use = last 3 y; GP = general practitioner; * Estimates of the rate in a decision-making tree analysis; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Foroudi, 2002, Canada (cont'd)	• % appropriate use of RT: stage II (pN1), prefer BCT, receiving BI (i) IV	• Overall: 31.1%* • Links: NA	• State of use: NR • Current use: internal quality improvement; external quality oversight, decision-making; research • Care setting: hospitals; cancer centers; RT centers • Professionals: surgeons; oncologists; RT oncologists; GPs	• See above.
	• % appropriate use of RT: stage IIIB (pT4 or pN3),w/wo mastectomy, receiving RI (i) IV	• Overall: 42%* • Links: NA		
	• % appropriate use of RT stage IIIA, < 4N(+), postmastectomy, R1 or 2; receiving RI (i) IV	• Overall: 0.24-0.35%* • Links: NA		
	• % appropriate use of RT: stage IIIA; < 4N(+), postmastectomy; R0, prefer BCT; receiving RI (i) IV	• Overall: 3.5-5.1%* • Links: NA		
	• % appropriate use of RT: stage IIIA; >3N(+), postmastectomy, receiving RI (i) IV	• Overall: 5.1-7.4%* • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; LN = lymph nodes; BCS = breast conserving surgery; RT = radiotherapy; HR = Hormone receptor; CI = contraindication; CT = chemotherapy; HT = hormone therapy; CPG = clinical practice guidelines; BI = breast irradiation; BCT = breast-conserving therapy; R0 = no residual tumor; R1 = microscopic residual tumor; R2 = macroscopic residual tumor; RI = radiation therapy; (i) = initial treatment; PRT = any palliative RT; LCIS = lobular carcinoma in situ; (r) = progression or relapse; state of use = last 3 y; GP = general practitioner; * Estimates of the rate in a decision-making tree analysis; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Foroudi, 2002, Canada (cont'd)	• % appropriate use of RT: stage IIIA; prefer BCT, receiving BI (i) IV	• Overall: 27.8%* • Links: NA	• See above.	• See above.
	• % appropriate use of RT: stage IV, brain metastases at diagnosis, receiving PRT (i) IV	• Overall: 1.8%* • Links: NA		
	• % appropriate use of RT: stage IV; symptomatic bone metastasis at diagnosis; receiving PRT (i) IV	• Overall: 10%* • Links: NA		
	• % appropriate use of RT: LCIS; recur with DCIS or invasive carcinoma; receiving BI (r) IV	• Overall: 0.7%* • Links: NA		
	• % appropriate use of RT: DCIS, post-BCS, recur with DCIS or invasive carcinoma; receiving BI (r) IV	• Overall: 1.2%* • Links: NA		
	• % appropriate use of RT: DCIS, postmastectomy; locoregional relapse, receiving RI (r) IV	• Overall: 0. 02-0.1%* • Links: NA		
	• % appropriate use of RT: stage I & II (pN0), postmastectomy, receiving PRT (r) IV	• Overall: 2.9-4.2%* • Links: NA		
	• % appropriate use of RT: stage I & II (pN0), postmastectomy, locoregional relapse; receiving RI (r) IV	• Overall: NR • Stage I: 1.3-1.9%* • Stage II: 1.7-1.9%* • Links: NA		
	• % appropriate use of RT: stage II (pN1); postmastectomy; receiving PRT IV	• Overall: 0.5%* • Links: NA		
	• % appropriate use of RT: stage II (pN1); postmastectomy (locoregional relapse); receiving RI (r) IV	• Overall: 1.35%* • Links: NA		
	• % appropriate use of RT: stage III; postmastectomy; receiving PRT (r) IV	• Overall: 0.39-0.57%* • Links: NA		
	• % appropriate use of RT: stage III; postmastectomy; locoregional relapse; receiving RI (r) IV	• Overall: 1.2-1.7%* • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; LN = lymph nodes; BCS = breast conserving surgery; RT = radiotherapy; HR = Hormone receptor; CI = contraindication; CT = chemotherapy; HT = hormone therapy; CPG = clinical practice guidelines; BI = breast irradiation; BCT = breast-conserving therapy; R0 = no residual tumor; R1 = microscopic residual tumor; R2 = macroscopic residual tumor; RI = radiation therapy; (i) = initial treatment; PRT = any palliative RT; LCIS = lobular carcinoma in situ; (r) = progression or relapse; state of use = last 3 y; GP = general practitioner; * Estimates of the rate in a decision-making tree analysis; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Foroudi, 2002, Canada (cont'd)	• % appropriate use of RT: stage IV, delayed symptoms from bone metastasis; receiving PRT (r) [IV]	• Overall: 10.4-21.7%* • Links: NA	• See above.	• See above.
	• % appropriate use of RT: stage IV, delayed brain metastasis; receiving PRT (r) [IV]	• Overall: 4.8-10%* • Links: NA		
	• % appropriate use of RT: stage IV, delayed cord compression; receiving PRT (r) [IV]	• Overall: 0.4-0.8%* • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; LN = lymph nodes; BCS = breast conserving surgery; RT = radiotherapy; HR = Hormone receptor; CI = contraindication; CT = chemotherapy; HT = hormone therapy; CPG = clinical practice guidelines; BI = breast irradiation; BCT = breast-conserving therapy; R0 = no residual tumor; R1 = microscopic residual tumor; R2 = macroscopic residual tumor; RI = radiation therapy; (i) = initial treatment; PRT = any palliative RT; LCIS = lobular carcinoma in situ; (r) = progression or relapse; state of use = last 3 y; GP = general practitioner; * Estimates of the rate in a decision-making tree analysis; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Frazer, 1998, US	**Outcome:** • % change (improvement) in QOL over time[Iac]	• Overall: NS changes over time in all subscales & overall. • Links: NA	• Instrument: 39-item Guttman scaled HSQ Questionnaire form (health perception; social & physical functioning; physical & emotional role limitations; mental health; bodily pain; energy-fatigue) • Data sources: pts self-reported status using Guttman scaled HSQ questionnaire form • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: internal quality improvement • Care setting: hospitals; cancer centers • Professionals: oncologists; surgeons	• Inclusion: convenience sample women ESBC diagnosed, 1993, & treated by surgery & HT at MDACCO, Orlando, Florida • Exclusion: non-responders • Period: 3 y (1993-1996) • n patients (enrolled/ evaluated): NR/70 • Age (mean & range): 61.4 (37-80) y • Race/ethnicity: NR • Case characteristics: ESBC women with operable BC; treated by surgery & HT • Socioeconomic status: married; not employed; HMO • Funding: NR

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; ESBC = early stage breast cancer; HSQ = Health Status Questionnaire; MDACCO = M.D. Anderson Cancer Center Orlando; state of use = last 3 y; HT = hormone therapy; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Guadagnoli, 1997, US	**Process:** • % appropriate use of any adjuvant systemic therapy in node (-)[IV]	• Overall: 62% • By age: 50-59 y: 73% 60-69 y: 67% 70-79 y: 56% >80 y: 36% S • Links: NA	• Standard: EBCTCG meta-analysis, 1992 • Data sources: medical records; interviews • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: external quality oversight • Care setting: hospitals • Professionals: medical oncologists; oncological radiologists	• Inclusion: convenience sample postmenopausal women newly diagnosed invasive ESBC; stage I-II at 30 hospitals, Minnesota, 1993 • Exclusion: diagnosis of carcinoma in situ; inflammatory cancer; bilateral synchronous carcinoma; premenopausal women • Period: 1 y (1993) • n patients (enrolled/ evaluated): 746/632 • Age (mean & range): NR (50->80) y • Race/ethnicity: NR • Case characteristics: tumor size >1 cm (67%); node (+) (25%); LVN (9%); ER (+) (64%) • Socioeconomic status: married (54%); income > $30,000 (70%); HMO (37%) • Funding: NCI
	• % appropriate use of tamoxifen in node (-)[IV]	• Overall: 51% • By age: 50-59 y: 52% 60-69 y: 55% 70-79 y: 51% >80 y: 34% S • Links: NA		
	• % appropriate use any adjuvant systemic therapy in node (+)[IV]	• Overall: 92% • By age: 50-59 y: 93% 60-69 y: 96% 70-79 y: 89% >80 y: 85% NS • Links: NA		
	• % appropriate use any adjuvant systemic therapy in node (+) BC[IV]	• Overall: 71% • By age 50-59 y: 61% 60-69 y: 70% 70-79 y: 81% >80 y: 74% S • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BC = breast cancer; NCI = National Cancer Institute; EBCTCG = early breast cancer trialists' collaborative group; HT = hormone therapy; CT = chemotherapy; state of use = last 3 y; ESBC = early-stage BC; LVN = lymphatic- vessel invasion; ER = estrogen receptor; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance Data: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/Data Source(s)/ Developmental History/Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Guadagnoli, 1998a, US	**Process:** • % appropriate use of RT after BCS[IV]	• Overall: 84% (MA) 86% (MN) • By age (OR): 50-59 y: 0.4 S (MA); 4.2 NS (MN) 60-69 y: 0.5 NS (MA); 2.6 NS (MN) 70-79 y: 0.3 S (MA); 0.3 NS (MN) >80 y: 0.05 S (MA); 0.03 S (MN) • Links: NA	• Standard: NIH Consensus Development Conference, 1990 • Data sources: hospital tumor registries; medical records; patient survey; patient income & education US census data; physician survey • Developmental period: NR • Reference standard(s) (publication sate): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: external quality oversight; research • Care setting: hospitals; cancer centers; RT centers • Professionals: clinicians; oncologists; surgeons; RT oncologists	• Inclusion: convenience sample women ESBC (stage I or II) in 2 states of US (MA & MN), 1993-1995 • Exclusion: DCIS; bilateral synchronous BC; inflammatory carcinoma • Period: 2 y (1993-1995) • n patients (enrolled/ evaluated): 2,575/2,575 (MA = 1,514; MN = 1,061) • Age (mean & range): NR (<50 - > 80) y • Race/ethnicity: White 96% (MA); 99% (MN); Black 4% (MA); 1% (MN) • Case characteristics: women > 60 y; stage I-II BC • Socioeconomic status: income <$40,000 54%(MA); 67% (MN); urban 95% • Funding: NCI grants
	• % appropriate use of axillary lymph node dissection[IV]	• Overall: 81% (MA); 94% (MN) • By age (OR) 50-59 y: 0.8 NS (MA); 5.3 NS (MN) 60-69 y: 0.3 NS (MA); 0.9 NS (MN) 70-79 y: 0.1 S (MA); 0.2 S (MN) >80 y: 0.03 S (MA); 0.1S (MN) • Links: NA		
	• % appropriate use of CT*[IV]	• Overall: 97% (MA); 94% (MN) • Links: NA		
	• % appropriate use of tamoxifen[IV]	• Overall: 63% (MA); 59% (MN) • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; CT = chemotherapy; RT = radiotherapy; HT = hormone therapy; ER = estrogen receptor; PR = progesterone receptor; CPG = clinical practice guidelines; DCIS = ductal carcinoma in situ; BC = breast cancer; NCI = National Cancer Institute; MA = Massachusetts; MN = Minnesota; OR = odds ratio; state of use = last 3 y; GP = general practitioner; * premenopausal; node (+); ** postmenopausal nodes (+) & ER (+); BCS = breast-conserving surgery; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Guadagnoli, 1998b, US	**Process:** • % appropriate use of BCS[IV]	• Overall: 74%(MA); 48% (MN) • By age (OR): 50-59 y: 0.9 NS (MA); 0.9 NS (MN) 60-69 y: 0.9 NS (MA); 0.7 NS (MN) 70-79 y: 0.6 NS (MA); 0.6 S (MN) ≥80 y: 0.8 NS (MA); 0.4 S (MN) • By residence: Urban: 1.5 NS (MA); 2.2 S (MN) • By income (OR): <$40,000: 0.7 NS (MA); 1.4 NS (MN) By HMO member: 1.4 NS (MA); 0.9 NS (MN) • By education (% High school) (OR): 70-79: 0.9 NS (MA); 1.5 NS (MN) 80-89: 0.9 NS (MA); 1.4 NS (MN) ≥ 90: 1.4 NS (MA); 2.6 NS (MN) • Links: NA	• Standard: NIH Consensus Development Conference, 1990 • Data sources: medical records; patient survey • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: external quality oversight • Care setting: hospitals; cancer centers; RT centers • Professionals: oncologists; surgeons; GPs; RT oncologists	• Inclusion: convenience sample women BC stage I or II in hospitals of 2 US states (MA & MN), 1993-1995 • Exclusion: bilateral disease; prior BCS in same breast; prior RT; pregnancy; central tumor; multifocal; etc • Period: 2 y (1993-1995) • n patients (enrolled/ evaluated): MA: 1,514/1,299; MN: 1,061/836 • Age (mean & range): NR (<50->80) y • Race: White (96%); Black (4%) • Case characteristics: mostly women > 60 y, stage I disease • Socioeconomic status: income < U$ 40,000 (MA: 55%; MN: 67%); urban (MA: 95%; MN: 91%); comorbid disease (MA: 63%; MN: 67%) • Funding: NCI
	• % appropriate use of RT after BCS[IV]	• Overall: 84% (MA); 86% (MN) • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; ESBC = early stage breast cancer; BCS = breast-conserving surgery; RT = radiotherapy; NCI = National Cancer Institute; MA = Massachusetts; MN = Minnesota; NIH = National Institute of Health; state of use = last 3 y; GP = general practitioner; OR = odds ratio; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance Data: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/Data Source(s)/ Developmental History/Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Haas, 2000, US	**Process:** • % appropriate use of evaluation in compliance with guidelines (biopsy; imaging evaluation; breast exam) [IV]	• Overall: 69.1% • By consultation: Abnormal Mx: 74% Clinical breast complaint: 58.8% • By age: <50 y: 63.8% ≥50 y: 74.5 % • By race/ethnicity: White: 71% Black: 59.5% Hispanic: 75.8% • By payer: HMO: 73.3% Other: 62% • Links: NA	• Standard: Harvard Risk Management Foundation guidelines, 1995 • Data sources: medical records; baseline & follow-up telephone surveys • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: internal quality improvement • Care setting: hospitals; cancer centers • Professionals: GPs; oncologists; surgeons	• Inclusion: convenience sample women referred for at least 1 visit to GP, 1 y prior to Mx; abnormal screening Mx or underwent Mx for clinical breast concern (lump, thickening, breast pain) regardless of result, Greater Boston area • Exclusion: previously diagnosed BC; evaluated for abnormal Mx or breast complaint within preceding y • Period: 1 y (1996 -1997) • n patients (enrolled/ evaluated): 751/579 • Age (mean & range): NR • Race/ethnicity: White (74.4%); Black (14.5%); Hispanic (5.7%) • Case characteristics: NR • Socioeconomic status: ≥ high school (50%); HMO (60%) • Funding: Harvard Risk Management Foundation
	Outcome: • % women reporting overall satisfaction with quality of breast care [IV]	• Overall: excellent care 46.8% (baseline) 45.8% (follow-up survey) • By age: <50 y: 44.4% (b)- 46.6%(F) ≥ 50 y: 49.3% (b)- 44.9% (F) • By Race/ethnicity: White: 51.9% (b)- 49.8% (F) Black: 35.9% (b)- 35.6% (F) Hispanic: 33.3% (b)-25% (F) • By payer: HMO: 42.9% (b) - 42.4% (F) Other: 52.8% (b) – 50.7% (F) • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BC = breast cancer; Mx = mammogram; state of use = last 3 y; GP = general practitioner; HMO = health maintenance organization; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Harlan, 2002, US	**Process:** • % appropriate use of any adjuvant systemic therapy in node (+)[IV]	• Overall: 70% • By age: <51y: 82% 51-64 y: 73% ≥65 y: 63% S • By race/ethnicity: White: 72% Black: 69% Other: 72% NS • Links: NA	• Standard: NIH Consensus Development Conference, 1990 • Data sources: NCI-SEER cancer registries • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: external quality oversight; research • Care setting: hospitals; cancer centers • Professionals: oncologists; GPs	• Inclusion: population-based sample women stage I, II & IIIA BC diagnosed, 1987-1991 & 1995 • Exclusion: pts who did not undergo surgery; participation in clinical trials • Period: 5 y (1987-1991 & 1995) • n patients (enrolled/ evaluated): 8,106/7,724 • Age (mean & range): NR • Race/ethnicity: White (83.2%); Black (9.3%); other (7.5%) • Case characteristics: women stage I-IIIA BC; ER (+) (59.2%); tumor size 1-2 cm (47.7%); node (-) (63.4%) • Socioeconomic status: NR • Funding: NCI
	• % appropriate use of any adjuvant systemic therapy in node (-)[IV]	• Overall: NR • By age: <51 y: 45% <65 y: 46% ≥65 y: 41% • By race/ethnicity: White: 44% Black: 40% Other 45% NS • Links: NA		
	• % appropriate decision not to provide adjuvant systemic therapy in node(-); tumor <1cm[IV]	• Overall: 52.2% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BC = breast cancer; node (+) = lymph node positive; node (-) = lymph node negative; NIH = National Health Institute; NCI SEER = National Cancer Institute Surveillance, Epidemiology, and End-Results; state of use = last 3 y; GP = general practitioner; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance Data: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/Data Source(s)/ Developmental History/Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Hassey Dow, 2000, US	**Outcome:** • % women reporting changes in QOL overtime (from start of RT; during RT & 6 mo post)[Ia]	• Overall: NR; NS changes over time in QLI scales • Links: NA	• Instrument(s): Ferrans Quality-of-Life Index- cancer version (QLI) 1990 • Data sources: questionnaires; demographic data form • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: external quality oversight; research • Care setting: hospitals; cancer centers; RT centers • Professionals: oncologists; surgeons; GPs; RT oncologists	• Inclusion: convenience sample women ESBC beginning course of RT after BCS at a major urban teaching hospital in US Northeast. 21-45 y; newly diagnosed stage I or II BC; not undergoing CT or HT • Exclusion: no previous diagnosis or treatment for any cancer • Period: 6 mo • n patients (enrolled/ evaluated): 28/23 • Age (mean & range): 37.8 (25-45) y • Race/ ethnicity: White (91%); Hispanic & Russian (4%) • Case characteristics: women BC stage I or II; BCS & RT; <45 y • Socioeconomic status: single (40%) • Funding: ONS Foundation/ Laderle Research

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; ESBC = early stage breast cancer; BCS = breast-conserving surgery; RT = radiotherapy; CT = chemotherapy; HT = hormone therapy; QOL = quality of life; QLI = Ferrans Quality-of-Life Index – Cancer version; state of use = last 3 y; GP = general practitioner; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance Data: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Hebert-Croteau, 1999, Canada	**Process:** • % appropriate use of definitive locoregional therapy (total mastectomy + ALND or BCS + ALND + RT) [IV]	• Overall: NR • By age: 50-69 y: 83.5% ≥70 y: 48.7% S • Links: NA	• Standard: NIH Consensus Development Conference, 1990 • Data sources: Quebec tumor registry (1988-89); Quebec hospital admission/discharge database (1993-1994) • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: research; external quality oversight • Care setting: hospitals; cancer centers • Professionals: oncologists; GPs; RT oncologists; surgeons	• Inclusion: random sample newly diagnosed stage I-II BC women ≥50 y receiving treatment in 5 sanitary regions of Quebec: Montreal, Quebec, Laval, Monteregie & Chadiere/Appalaches • Exclusion: pts in long term or convalescent hospitals; diagnostic errors; multiple primary tumors; recurrent BC; regional or distant extension; multicentric, inflammatory, Stage III-IV; no pathological confirmation of disease; tumor not originated in mammary gland; phyllodes tumor or lobular carcinoma • Period: 2 y (1993-1994) • n patients (enrolled/ evaluated): 1,732/1,174 • Age (mean & range): NR (50->70) y • Race/ethnicity: NR • Case characteristics: Stage I-II BC node (-); ER (+) (70-79%); tumor size 1-2 cm (41-48%) • Socioeconomic status: NR • Funding: Research in Health Quebec
	• % appropriate use of alternative definitive therapy (RT after BCS + ALND or adjuvant treatment) [IV]	• Overall: NR • By age: 50-69 y: 90.9% ≥70 y: 60.9% S • Links: NA		
	• % appropriate of use of BCS[IV]	• Overall: NR • By age: 50-69 y: 90.9% ≥70 y: 80.1% S • Links: NA		
	• % appropriate use of RT after BCS[IV]	• Overall: NR • By age: 50-69 y: 89.6% ≥70 y: 59% S • Links: NA		
	• % appropriate use of ALND[IV]	• Overall: NR • By age: 50-69 y: 82.4% ≥70 y: 46.9% S • Links: NA		
	• % appropriate use of any adjuvant systemic therapy[IV]	• Overall: NR • By age: 50-69 y: 74.2% ≥70 y: 72.1% NS • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; BC = breast cancer; LN = lymph nodes; LND = lymph node dissection; ALND = axillary lymph node dissection; RT = radiotherapy; enrolled = n qualified; evaluated = n analyzed; completed = n completing the study; GP = general practitioner; state of use = last 3 y; BCS = breast -conserving surgery; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Hislop, 2003, Canada	**Process:** • % appropriate use of BCS[IV]	• Overall: NR • By extent of disease: LCIS: 56% DCIS: 39% Metastatic: 8% M0 invasive: 57% Node (-): 60% • By age: <40 y: 42% 40-49 y: 51% 50-59 y: 58% 60-69 y: 50% 70-79 y: 42% • > 80 y: 41% • By family income: <$35,000: 44% $35,000-44,999: 46% $45,000-54,999: 46% ≥$55,000: 55% • Links: NA	• Standard: BCCA cancer treatment policy manual, 1995 • Data sources: British Columbia cancer registry; medical records; interviews of MDs • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: external quality oversight • Care setting: hospitals; cancer centers; RT centers • Professionals: oncologists; surgeons; RT oncologists; GPs	• Inclusion: Population-based sample women histologically confirmed BC diagnosed, British Columbia, 1995 • Exclusion: diagnosed out of province; at death; previous synchronous cancer • Period: 1 y (1995) • n patients (enrolled/ evaluated): 2,563/1,159 • Age (mean & range): NR • Race/ethnicity: NR • Case characteristics: DCIS or LCIS (n = 152); invasive non metastatic (n = 967); node (-) (n = 496); metastatic (n = 40) • Socioeconomic status: NR • Funding: British Columbia Health Research
	• % appropriate use of RT after BCS + ALND in M0 invasive BC[IV]	• Overall: 38% • By family income: <$35,000: 100% $35,000-44,999: 80% $45,000-54,999: 89% ≥$55,000: 82% • Links: NA		
	• % appropriate use of RT after BCS in DCIS[IV]	• Overall: 38% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BC = breast cancer; state of use = last 3 y; GP = general practitioner; BCCA = British Columbia Cancer Agency; DCIS = ductal carcinoma in situ; LCIS = lobular carcinoma in situ; BCS = breast-conserving surgery; RT = radiotherapy; ALND = axillary lymph node dissection; M0 = non-metastatic; MD = medical doctor; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Hislop, 2003, Canada (cont'd)	• % appropriate use of mastectomy ± RT + ALDN in M0 invasive[IV]	• Overall: 46% • Links: NA	• See above.	• See above.
	• % appropriate use of mastectomy ± RT in LCIS or DCIS[IV]	• Overall: 21% • Links: NA		
	• % no BCS or mastectomy in metastatic disease[IV]	• Overall: 65% • Links: NA		
	• % appropriate use of treatment sequences according to guidelines[IV]	• Overall: 81% • By extent of disease: LCIS: 78% DCIS: 71% Metastatic: 73% M0 invasive: 83% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BC = breast cancer; state of use = last 3 y; GP = general practitioner; BCCA = British Columbia Cancer Agency; DCIS = ductal carcinoma in situ; LCIS = lobular carcinoma in situ; BCS = breast-conserving surgery; RT = radiotherapy; ALND = axillary lymph node dissection; M0 = non-metastatic; MD = medical doctor; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance Data: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/Data Source(s)/ Developmental History/Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Imperato, 2002, US	**Process:** • % reporting laterality of specimen (right or left breast) [IV]	• Overall: 99.3% (551/555) • Links: NA	• Standard: CAP & ADASP guidelines 1997/2000 (update) • Data sources: Medicare pts, NY State acute care hospitals, 1999 (n=1,718); medical records • Developmental period: NR • Reference standard(s) (Publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: external quality oversight; quality of care reporting • Care setting: hospitals; pathology centers • Professionals: pathologists; oncologists; surgeons	• Inclusion: random sample Medicare Individuals BC who underwent total mastectomy with LND, NY State hospitals, 1999 • Exclusion: other type of surgery, missing data from records, no residual cancer present in individuals with prior lumpectomy or excisional biopsy • Period: 1 y (1999) • n patients (enrolled/ evaluated): 1718/555* • Age (mean & range): 73.7 (NR) y • Race/ethnicity: White (80.9%); Black (8.5%) Asian (1.1%); unknown (9.5%) • Case characteristics: NR • Socioeconomic status: NR • Funding: Health Care Financing Administration
	• % reporting gross observation of lesion[IV]	• Overall: 60.5% (336/555) • Links: NA		
	• % reporting dimension of tumor (largest) [IV]	• Overall: 93.5% (314/336)\ • Links: NA		
	• % reporting identification of affected quadrant[IV]	• Overall: 30.7% (103/336) • Links: NA		
	• % reporting LN (presence/absence) [IV]	• Overall: 83.7% (465/555) • Links: NA		
	• % reporting presence of carcinoma[IV]	• Overall: 100% (555/555) • Links: NA		
	• % reporting histological type[IV]	• Overall: 95.9% (532/555) • Links: NA		
	• % reporting histological grade[IV]	• Overall: 59.1% (328/555) • Links: NA		
	• % reporting nuclear grade[IV]	• Overall: 44.3% (246/555) • Links: NA		
	• % reporting mitotic rate[IV]	• Overall: 22.5% (125/555) • Links: NA		
	• % reporting extent of tubule formation[IV]	• Overall: 19.6% (109/555) • Links: NA		
	• % reporting verification tumor size[IV]	• Overall: 63.0% (349/555) • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; LN = lymph nodes; LND = lymph node dissection; (+) = positive; CAP = College of American Pathology; ADASP = Association of Directors of Anatomic and Surgical Pathology; state of use = last 3 y; NY = New York; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance Data: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/Data Source(s)/ Developmental History/Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Imperato, 2002, US (cont'd)	• % reporting angiolymphatic invasion[IV]	• Overall: 45.6% (253/555) • Links: NA	• See above.	• See above.
	• % reporting resection margin status[IV]	• Overall: 69.4% (385/555) • Links: NA		
	• % reporting n LN present[IV]	• Overall: 93.5% (519/555) • Links: NA		
	• % reporting n node (+)[IV]	• Overall: 98.6% (217/220) • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; LN = lymph nodes; LND = lymph node dissection; (+) = positive; CAP = College of American Pathology; ADASP = Association of Directors of Anatomic and Surgical Pathology; state of use = last 3 y; NY = New York; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Jackson, 1999, Canada	**Process:** • % appropriate use of RT post-mastectomy on chest wall[IV]	• Overall: 82.5% (4%-95.5%) • Links: NA	• Standard: BCCA guidelines, 1986, update in 1989 & 1993 • Data sources: CAIS, Radiation Therapy Warehouse Table • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: external quality oversight • Care setting: hospitals; cancer centers; RT centers • Professionals: RT oncologists; oncologists; surgeons; GPs	• Inclusion: population-based sample women receiving "radical" or "adjuvant" postoperative RT treatments for BC in 3 clinics in British Columbia inclusive, 1985-1996 • Exclusion: pts receiving palliative treatment or treatment for other disease sites; referrals to other hospitals • Period: 12 y (1985-1996) • n patients (enrolled/ evaluated): 9,748/9,351 • Age (mean & range): NR • Race/ethnicity: NR • Case characteristics: NR • Socioeconomic status: NR • Funding: NR
	• % appropriate use of RT on regional LN[IV]	• Overall: 75% (3%-92%) • Links: NA		
	• % quality of RT after BCS[IV]	• Overall: 95% (69%-99.5%) • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BC = breast cancer; RT = radiotherapy; CAIS = Cancer Agency Information System; LN = lymph nodes; BCS = breast-conserving surgery; state of use = last 3 y; GP = general practitioner BCCA = British Columbia Cancer Agency; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance Data: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/Data Source(s)/ Developmental History/Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Jansen, 2000, Netherlands	**Outcome:** • Overall changes in QOL overtime; before & after RT[lac]	• Overall: QOL scale: 38% (worse); 40% (stable); 22% (improvement) • Links: NA	• Instrument(s): Rotterdam Symptom Checklist (RSCL); SF-36 • Data sources: pt self-report questionnaires before RT (pretest); after RT (post-test) & recall of pretest • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: external quality oversight; research • Care setting: hospitals; cancer centers; RT centers • Professionals: oncologists; surgeons; GPs; RT oncologists	• Inclusion: convenience sample women ESBC who underwent surgery (BCS or mastectomy) • Exclusion: previous CT or RT; DCIS; no speak Dutch • Period: 2 y (1997-1999) • n patients (enrolled/ evaluated): 76/46 • Age (mean & range): 55 (28-77) y • Race/ethnicity: NR • Case characteristics: women BC stage I or II; BCS (n=37); mastectomy (n=9) • Socioeconomic status: married (72%); full-time employment (17%) • Funding: Dutch Cancer Society

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; ESBC: early stage breast cancer; BCS: breast-conserving surgery; RT: radiotherapy; CT: chemotherapy; QOL: Quality of life; DCIS: ductal in situ carcinoma; state of use: last 3 y; GP = general practitioner; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance Data: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/Data Source(s)/ Developmental History/Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Keating, 2001, US	**Process:** • % appropriate use of BCS[IV]	• Overall: 73.8% (MA); 48% (MN) • Links: NA	• Standard: NIH Consensus Development Conference, 1990 • Data sources: medical records; telephone interview with pts • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: external quality oversight • Care setting: hospitals; pathology centers • Professionals: pathologists; oncologists; surgeons	• Inclusion: convenience sample women diagnosed stage I & II BC at 17 hospitals in MA & 30 hospitals in MN • Exclusion: women BC DCIS; bilateral synchronous carcinoma; inflammatory carcinoma; women interview non-responders (no permission by surgeon, not located, unavailable) • Period: 2 y (1993-1995) • n patients (enrolled/evaluated): 1,498/ 792 (MA); 2,330/1,634 (MN) • Age (mean & range): 56.6 y (SD 13.5) MA; 59.4 y (SD 13.6) MN • Race/ethnicity: White 94% (MA); 98% (MN) S • Case characteristics: women BC stage I 58% MA; 60% MN; stage II 42% MA; 40% MN • Socioeconomic status: income < U$20,000/y: 17% MA; 22% MN; U$20,000-40,000/y: 29% MA; 34% MN; >U$40,000/y: 54% MA; 44% MN (p<0.05); HMO insurance 33% MA; 43% MN (p<0.05) • Funding: NCI; Doris Duke Charitable Foundation
	Outcome: • % satisfaction of women with treatment choice after discussing with oncologist or surgeon[IV]	• Overall: Very satisfied: 80% (MA); 76% (MN) • Links: NA		
	• % participation of women with BC in decision-making as much as they wanted[IV]	• Overall: 83% (MA); 81% (MN) • Links: NA		
	• % received enough information about surgery & RT[IV]	• Overall: 80% (MA); 80% (MN) appropriate • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; MA = Massachusetts; MN = Minnesota LN = lymph nodes; BCS = breast-conserving surgery; RT = radiotherapy; n = number; HR = hormone receptor; DCIS = ductal carcinoma in situ; BC = breast cancer; NIH = National Institute of Health; state of use = last 3 y; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance Data: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/Data Source(s)/ Developmental History/Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Khawaja, 2001, UK	**Access:** • % women BC to be seen by specialist within 2 wks of referral (standard: ≥80%) for diagnostic purposes[IV]	• Overall: 100% (22/22) • Soon (<10 d): >65 y: 18.2% (4/22) • Links: NA	• Standard: BASO breast group recommendations 1995/1998 (update) • Data sources: referrals faxed to breast clinic • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: research; internal quality improvement; external quality oversight • Care setting: hospitals; cancer centers • Professionals: GPs; oncologists; surgeons	• Inclusion: convenience sample women BC referred by GP to specialist to diagnose: breast lump; suspicion of malignant change; other breast symptoms • Exclusion: benign disease • Period: 3 mo (1998) • n patients (enrolled/ evaluated): 100/22 • Age (mean & range): 50 (22-90) y • Race/ethnicity: NR • Case characteristics: NR • Socioeconomic status: NR • Funding: NR
	• % urgent referrals seen within 5 working d (standard: ≥80%)[IV]	• Overall: 82% • By age: 41-65 y: 27.3% (6/22) >65 y: 54.5% (12/22) • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BC: breast cancer; BASO: British Association of Surgical Oncology; state of use: last 3 y; GP = general practitioner; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Lagorreta, 2000, US	**Process:** • % appropriate use of BCS when indicated[IV]	• Overall: 63% (474/748) • By stage: Stage 0 & I were 16% (OR: 1.16; S)& 21 % (OR: 1.21; S) respectively, more likely to receive BCS vs stage II pts • By race/ethnicity: Hispanic women 36% less likely to receive BCS vs White women (OR: 0.36; S) By Marital Status (OR): Married: 0.93 Not married/widowed: 1.00 • Links: NA	• Standard: NIH Consensus Conference recommendations, 1990 • Data sources: claims data of Health Net (~1.3 million member); HMO of California; medical records • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: current • Current use: external quality oversight • Care setting: hospitals; cancer centers • Professionals: oncologists; surgeons; GPs	• Inclusion: convenience sample women ≥ 21 y ESBC detected, 1994-1996, with invasive carcinoma (any histological subtype); DCIS; stages 0-II; primary tumor ≤ 5 cm; no evidence multicentricity of tumor; no CI to RT; Paget's disease of breast; eligible for BCS • Exclusion: lobular carcinoma in situ; phyllodes tumor, or sarcoma; primary tumor > 5 cm &/or stage III or IV • Period: 2 y (1994-1996) • n patients (enrolled/ evaluated): 1,017/753 • Age (mean & range): NR (≤ 39- ≥ 65) y • Race/ethnicity: White (72.6%); Hispanic (6.8%); Black (5.2%); unknown (8.5%) • Case characteristics: ESBC stage 0 (8.2%); I (50.1%; II (41.7%), tumor size 1.1-2 cm (45.3%) • Socioeconomic status: Married (61.8%) • Funding: NR

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BCS = breast-conserving surgery; CI = contraindication; CT = chemotherapy; NIH =National Health Institute; ESBC = early stage breast cancer; DCIS = ductal carcinoma in situ; RT = radiotherapy; OR = odds ratio; HMO = Health Maintenance Organization; state of use = last 3 y; GP = general practitioner; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Lazovich, 1997, US	**Process:** • % appropriate use of BCS[IV]	• Overall: NR • By stage: Stage I: 54.9% Stage II: 35.2% • By age: <50 y: 52.1% 50-59 y: 54.9% 60-69 y: 47.4% 70-79 y: 39.1% > 80 y: 31.7% S • By payer: Private: 46.2% HMO: 69.9% S • By education: Lowest tertile: 44.9% Middle tertile: 49.9% Highest tertile: 50.9% S • Links: NA	• Standard: NIH Consensus Development Conference, 1990 • Data sources: SEER cancer registries; medical records • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: external quality oversight; research • Care setting: hospitals; cancer centers; RT centers • Professionals: oncologists; surgeons; GPs; RT oncologists	• Inclusion: national population-based sample women ESBC stage I or II diagnosed in 13 western, Washington counties, 1983-1993 • Exclusion: locally advanced BC; distant metastases; no measurable breast mass; data missing • Period: 3 y (1990-1993) • n patients (enrolled/ evaluated): 18,664/13,541 • Age (mean & range): NR • Race/ethnicity: NR • Case characteristics: women BC stage I or II; <5 cm • Socioeconomic status: NR • Funding: NCI
	• % appropriate use of RT after BCS[IV]	• Overall: 94.1% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; ESBC = early stage breast cancer; BCS = breast-conserving surgery; RT = radiotherapy; NIH = National Institute of Health; SEER = Surveillance, Epidemiology and End Results; NCI = National Cancer Institute; state of use = last 3 y; GP = general practitioner; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Lazovich, 1999, US	**Process:** • % appropriate use of BCS[IV]	• Overall: NR • By Stage: Stage I: 53.4% (29,234/55,984) Stage II: 32.7% (22,746/53,896) • By Age: <50 y: 48% 50-59 y: 49% 60-69 y: 44.6% 70-79 y: 39.2% ≥80 y: 34.7% • By Race/ethnicity: White: 44.5% Non-White: 43.1% • Per Registry: Iowa: 26.7% Atlanta: 42.1% Utah: 35% New Mexico: 40.1% Hawaii: 46.9% Detroit: 41.2% Connecticut: 55.6% SanFrancisco/Oakland: 50.8% Seattle/Puget Sound: 50% • Links: NA	• Standard: NIH Consensus Conference recommendations, 1990 • Data sources: SEER cancer registries (9 US regions**)** • Developmental period: NR • Reference Standard(s) (Publication Date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: external quality oversight; research • Care setting: hospitals; cancer centers; RT centers • Professionals: oncologists; surgeons; GPs; RT oncologists	• Inclusion: national population-based sample women ESBC diagnosed in 9 US regions, 1983-1995 • Exclusion: DCIS; Paget's disease; non measurable tumor; tumor > 5 cm; stages III or IV; data missing • Period: 5 y (1990-1995) • n patients (enrolled/ evaluated): 110,235/109,880 • Age (mean & range): NR • Race/ethnicity: White; non-white • Case characteristics: women BC stage I or II; <5 cm • Socioeconomic status: NR • Funding: NIH

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BCS = breast-conserving surgery; RT = radiotherapy; NIH = National Institute of Health; SEER = surveillance, epidemiology and end results; state of use = last 3 y; GP = general practitioner; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Lazovich, 1999, US (cont'd)	• % appropriate use RT after BCS[IV]	• Overall: 81.5% (23,042/37,196) • By Stage: Stage I: 83.5% Stage II: 77.4% S • By Age: <50 y: 82.4% 50-59 y: 86.1% 60-69 y: 86.6% 70-79 y: 80.2% ≥80 y: 48.5% S • By Race/ethnicity: White: 81.7% Non-White: 80.7% NS • Links: NA	• See above.	• See above.

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BCS = breast-conserving surgery; RT = radiotherapy; NIH = National Institute of Health; SEER = surveillance, epidemiology and end results; state of use = last 3 y; GP = general practitioner; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Mandelblatt, 2001, US	**Process**: • % appropriate use of BCS[IV]	• Overall: 35.5% • By surgeon profile: surgeons with BCS propensity: 44.4% surgeons with mastectomy propensity: 26.8% S • Links: NA	• Standard: NIH Consensus Development Conference, 1990 • Data sources: claims data from FFS Medicare sector; surveys sent to treating surgeons; telephone surveys with surgeons • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: research • Care setting: hospitals; cancer centers • Professionals: surgeons; oncologists; RT oncologists; GPs	• Inclusion: national random sample, Medicare beneficiaries, ≥ 67 y, newly diagnosed ESBC, 1992-1994; surgeons treating above mentioned group of pts • Exclusion: women ≥ 67 y Stage I, IIA, or IIB BC; bilateral BC; multicentricity of cancer • Period: 6 y (1992-1998) • n patients (enrolled/ evaluated): 3,851/3,851 • n surgeons (enrolled/ evaluated): 1,531/1,000 • Age (mean & range): NR • Race/ethnicity: NR • Case characteristics: NR • Socioeconomic status: NR • Funding: grants: AHRQ & Department of the Army grants
	• % appropriate use of RT after BCS[IV]	• Overall: 72.1% By surgeon profile: surgeons with BCS+ RT propensity: 75.1% surgeons with no RT propensity: 63.2% S • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BC = breast cancer; NIH = National Institute of Health; FFS = fee-for-service; BCS = breast-conserving surgery; RT = radiotherapy; AHRQ = Agency for Healthcare Research and Quality; state of use = last 3 y; GP = general practitioner; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measure - Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Mandelblatt, 2002, US	**Process:** • % appropriate use of BCS[IV]	• Overall: 33% (599/1,833) • By race/ethnicity: Black: 31% (300/984) White: 35% (299/849) NS • Links: NA	• Standard: NIH Consensus Development Conference, 1990 • Data sources: Medicare data; surgeon contacts; surviving women contacts; 1990 Census File; 1993 & 1995 data from Area Resource File • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: external quality oversight • Care setting: hospitals; cancer centers; RT centers • Professionals: oncologists; RT oncologists; surgeons; GPs	• Inclusion: national random sample, fee-for service Medicare beneficiary women ≥67 y newly diagnosed primary, unilateral, histologically confirmed stage I-II BC treated, 1994 • Exclusion: previous BC; DCIS without invasive disease; metastatic or multicentric BC; bilateral breast procedures; women BC without surgical procedure; breast surgery not 1st procedure; BC not primary diagnosis; missing data • Period: 1 y (1994) • n patients (enrolled/ evaluated): 6,998/1,833 • Age (mean & range): 74.4 (68.1-80.7) y • Race/ethnicity: Black (53.7%); White (46.3%) • Case characteristics: stage I: Black (53%); White (60%); stage IIA: Black (35%); White (33%); stage IIB: Black (12%); White (7%) • Socioeconomic status: women < poverty level: Black (15.2±7.3%); White (11.8±5.8%); monthly income <U$1,000: Black (54%); White (24%); ≥U$1,000: Black (27%); White (56%); ≤ High school: Black (76%); White (64%); married: Black (32%); White (46%); Medicaid: Black (25%); White (6%); private insurance: Black (43%); White (84%) • Funding: AHRQ; FCCBC; Department of the Army; & NCI grants
	• % appropriate use of RT after BCS[IV]	• Overall: 66.6% (399/599) • By race/ethnicity: Black: 61% (183/300) White: 72.2% (216/299) S • Links: NA		
	• % appropriate use of ALND after BCS or mastectomy[IV]	• Overall: 86% (1,579/1,833) • By race/ethnicity: Black: 88% (867/984) White: 84% (712/849) S • Links: NA		
	• % appropriate use of CT[IV]	• Overall: 9% (172/1,833) • By race/ethnicity: Black: 11% (112/984) S White: 7% (60/849) • Links: NA		
	• % appropriate use of tamoxifen[IV]	• Overall: 62% • By race/ethnicity: Black: 58% (193/331) S White: 66% (263/401) • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BC = breast cancer; DCIS = ductal carcinoma in situ; BCS = breast-conserving surgery; RT = radiotherapy; ALND = axillary lymph node dissection; NIH = National Institute of Health; NCI = National Cancer Institute; AHRQ = Agency for Healthcare Research and Quality; FCCBC = Federal Coordinating Committee on Breast Cancer; state of use = last 3 y; GP = general practitioner; CT = chemotherapy; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
McCarthy, 1997, UK	**Access:** • %(>90%) of women requiring operation for diagnostic purposes should be admitted within 14 d of surgical decision[IV]	• Overall: 45.5% (5/11) • Links: NA	• Standard: quality assurance guidelines (NHSBSP), 1994 • Data sources: Professional Unit of Surgery's database of Primary Breast Cancers; the Helen Garrod Breast Screening Unit's computerized database; pathology department's computerized histology database; individual hospital case notes • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: external quality oversight; research; internal quality improvement • Care setting: hospitals; cancer centers • Professionals: oncologists; GPs; surgeons	• Inclusion: convenience sample women operable BC <70 y treated at Nottingham City Hospital's, 1994 Professional Unit of Surgery • Exclusion: NR • Period: 1 y (1994) • n patients (enrolled/ evaluated): 251/251 • Age (mean & range): NR • Race/ethnicity: NR • Case characteristics: NR • Socioeconomic status: NR • Funding: NR
	• % (90%) of women admitted for operation within 21 d of surgical decision to operate for therapeutic purposes[IV]	• Overall: 90.4% (75/83) • Links: NA		
	Process: • % (>90%) women BC detected by screening should attend assessment center within 3 wks of mammography[IV]	• Overall: 42.7% (32/75) • Links: NA		
	• % (>70%) appropriate use of pre-operative diagnosis of cancer by cytology or needle histology[IV]	• Overall: 86.7% (72/83) • Links: NA		
	• % (>95%) appropriate use of first localization biopsy operation to correctly identify impalpable lesions[IV]	• Overall: 100% (11/11) • Links: NA		
	• % (90%) appropriate use of operations carried out with proven pre-operative diagnosis of cancer (in situ or invasive) should not require a further operation for incomplete excision[IV]	• Overall: 80.3% (49/61) • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; BC = breast cancer; BCS = breast-conserving surgery; n = number of participants; enrolled = n qualified; evaluated = n analyzed; NHSBSP = national coordination group for surgeons working in breast cancer screening; state of use = last 3 y; GP = general practitioner; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance Data: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/Data Source(s)/ Developmental History/Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
McGlynn, 2003, US	**Process:** • % (Appropriate use): If a palpable breast mass has been detected, at least one of the following procedures should be completed within 3 months: fine-needle aspiration, mammography, ultrasound, biopsy and/or a followup visit[IV]	• Overall: 89.1% (n = 77) • Links: NA	• Standard: from observational studies and expert opinion, to randomized controlled trials • Data sources: telephone survey; medical records • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: external quality oversight • Care setting: hospitals; pathology centers • Professionals: oncologists; surgeons GPs; RT oncologists	• Inclusion: random sample women living in 12 US metropolitan areas • Exclusion: leaving the area; refusal to be interviewed • Period: 2 y (1998-2000) • n patients (enrolled/ evaluated): 192/192 • Age (mean & range): NR • Race/ethnicity: NR • Case characteristics: NR • Socioeconomic status: NR • Funding: Robert Wood Johnson Foundation
	Process: • % (Appropriate use): If a breast mass has been detected on two separate occasions, then either a biopsy, fine-needle aspiration or ultrasound should be performed within 3 months of the second visit[IV]	• Overall: 81.6% (n = 13) • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; BC = breast cancer; QI = quality indicator; CI = confidence interval; state of use = last 3 y; RT = radiotherapy; GP = general practitioner; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance Data: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/Data Source(s)/ Developmental History/Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
McGlynn, 2003, US (cont'd)	**Process:** • % (Appropriate use): A biopsy or fine-needle aspiration should be performed within 6 weeks either when the mammography suggests malignancy or the persistent palpable mass is not cystic on ultrasound[IV]	• Overall: 50.2% (n = 33) • Links: NA	See above.	See above.
	Process: • % (Appropriate use): A biopsy should be performed within 6 weeks if fine needle aspiration cannot rule out malignancy[IV]	• Overall: 100% (n = 2) • Links: NA		
	Process: • % (Appropriate use): Women with stage I or stage II breast cancer should be offered a choice of modified radical mastectomy or breast-conserving surgery, unless contraindications to breast-conserving surgery are present[IV]	• Overall: 50.2% (n = 13) • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; BC = breast cancer; QI = quality indicator; CI = confidence interval; state of use = last 3 y; RT = radiotherapy; GP = general practitioner; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance Data: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/Data Source(s)/ Developmental History/Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
McGlynn, 2003, US (cont'd)	**Process:** • % (Appropriate use): Women treated with breast-conserving surgery should begin radiation therapy within 6 weeks of completing either of the following: the last surgical procedure on the breast (including reconstructive surgery that occurs within 6 wks of primary resection) or chemotherapy, if patient receives adjuvant chemotherapy, unless wound complications prevent the initiation of treatment[IV]	• Overall: 45.3% (n = 10) • Links: NA	See above.	See above.
	Process: • % (Appropriate use): Women with invasive breast cancer that is node-positive, or node-negative and primary tumor $\geq$ 1 cm, should be treated with adjuvant systemic therapy to include combination chemotherapy (and/or tamoxifen, 20mg/d) [IV]	• Overall: 85.1% (n = 13) • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; BC = breast cancer; QI = quality indicator; CI = confidence interval; state of use = last 3 y; RT = radiotherapy; GP = general practitioner; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance Data: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/Data Source(s)/ Developmental History/Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
McGlynn, 2003, US (cont'd)	**Process:** • % (Appropriate use): Women with a history of breast cancer should have a yearly mammography[IV]	• Overall: 84.6% (n = 99) • Links: NA	See above.	See above.
	Process: • % (Appropriate use): Women with metastatic breast cancer should be offered hormonal therapy, chemotherapy, and/or enrollment in a clinical trial with documentation of informed consent within 6 wks of the identification of metastases[IV]	• Overall: 82.6% (n = 4) • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; BC = breast cancer; QI = quality indicator; CI = confidence interval; state of use = last 3 y; RT = radiotherapy; GP = general practitioner; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Molenaar, 2001, Netherlands	**Outcome**: • % satisfaction of women BC with treatment choice[Iac]	• Overall: positive effect (CDROM) 0, 3 & 9 mo; no data • Links: NA	• Standard: IKA/IKST: Working group on Mamma Carcinoma; treatment guidelines; the Netherlands; Comprehensive Cancer Center, 1995 • Instrument(s): MOS20; EORTC QLQ-BR23 • Data sources: pt self-reported questionnaires; 3 hospitals, Netherlands • Developmental period: NR • Reference standard(s) (Publication Date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: internal quality improvement • Care setting: hospitals; cancer centers; RT centers • Professionals: oncologists; surgeons; GPs; RT oncologists	• Inclusion: convenience sample women, newly diagnosed stage I & II BC eligible for BCS or mastectomy • Exclusion: no Dutch spoken • Period: 2 y (1996-1998) • n patients (enrolled/ evaluated): 180/167 • Age (mean & range): 55.4 (44.6-66.2) y (CDROM group); 54.6 (44-65.2) y (standard care) • Race/ethnicity: NR • Case characteristics: ESBC node (-) (52-57%) • Socioeconomic status: married (53-66%); employed (45-52%) • Funding: Dutch Cancer Society
	• % change in QOL over time; generic QOL scales (higher scores = better QOL; except for pain scores)][Iac]	• Overall: positive effect (CDROM) 0, 3 & 9 mo; no data • Links: NA		
	• % change in QOL over time; BC-specific QOL scales (higher scores = better functioning; except for symptoms scales)[Iac]	• Overall: positive effect (CDROM) 0, 3 & 9 mo; no data • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; ESBC = early stage breast cancer; BCS = breast-conserving surgery; QOL = quality of life; MOS20 = medical outcomes study 20 (general health; physical functioning; pain; role functioning; social & psychosocial functioning); EORTC QLQ-BR23: European Organization for Research and Treatment of Cancer Quality of Life-specific for BC pts (body image; sexual functioning; arm symptoms; breast symptoms; systemic therapy symptoms; & future perspective); state of use = last 3 y; GP = general practitioner; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance Data: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/Data Source(s)/ Developmental History/Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Mor, 1994, US	**Outcome:** • %change in QOL over time[Ia]	• Overall: NR • By age: 24-54 y: 67.6% >55 y: 71% • Links: NA	• Instrument(s): MHI-5 • Data sources: medical records; telephone interview with pts • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: decision-making; research • Care setting: hospitals; cancer centers • Professionals: oncologists; surgeons; GPs	• Inclusion: convenience sample women BC from 2 research samples • Exclusion: NR • Period: NR • n patients (enrolled/ evaluated): 262/262 • Age (mean & range): NR (24->55) y • Race/ethnicity: White 92.4% • Case characteristics: women BC; local/regional disease; CT (80%) • Socioeconomic status: employed (14.3-51.8%); married (52.9-67.7%); family income > U$ 30,000 (17.6-49.7%) • Funding: NCI

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; QOL = quality of life; BC = breast cancer; state of use = last 3 y; NCI = National Cancer Institute; CT = chemotherapy; MHI-5 = Mental Health inventory (5-item scale for medically ill population); GP = general practitioner; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance Data: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/Data Source(s)/ Developmental History/Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Mor, 2000, US	**Process:** • % appropriate use of BCS[IV]	• Overall: 64.1% • Links: NA	• Standard: NCI Consensus Conference for surgeons, 1993 • Data sources: hospital cancer registry (6 hospitals in Rhode Island, US); pathology reports; medical records; pt interviews • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: internal quality improvement; external quality oversight, research • Care setting: hospitals; cancer centers • Professionals: surgeons; oncologists	• Inclusion: random sample women > 60 y BC stage I or II diagnosed at 6 hospitals, Providence, RI, Nov 1992 & Feb 1997 • Exclusion: women with BC <60 y; not eligible patients for intervention (low-volume surgeons) • Period: 5 y (1992-1997) • n patients (enrolled/ evaluated): 1,144/350 • Age (mean & range): NR (60->80 y) • Race/ethnicity: NR • Case characteristics: women BC stage I, II or DCIS; >1cm (74.9%); ER/PR known (94.7%); node (-) (38.6%), node (+) (13.1%) • Socioeconomic status: NR • Funding: NCI
	• % appropriate use of RT after BCS[IV]	• Overall: 70.4 % • By age: 60-69 y: 94% 70-79 y: 83% > 80 y: 34% S • Links: NA		
	• % appropriate use of any adjuvant systemic therapy (CT &/or HT); tumor ≥ 1 cm[IV]	• Overall: 81.9% • By age: 60-69 y: 88% 70-79 y: 82% >80 y: 77% S • Links: NA		
	• % appropriate use of treatment sequences recommended or received (if tumor <1 cm, then mastectomy or BCS + RT. If tumor ≥ 1 cm then mastectomy or BCS + RT & CT &/or HT) [IV]	• Overall: 72.9% • By age: 60-69 y: 89% >80 y: 50% S • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BCS = breast -conserving surgery; CT = chemotherapy; RT = radiotherapy; HT = hormone therapy; ER = estrogen receptor; PR = progesterone receptor; CPG = clinical practice guidelines; NCI = National Cancer Institute; state of use = last 3 y; DCIS = ductal carcinoma in situ; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Morrow, 2001, US	**Process:** • % appropriate use of BCS[IV]	• Overall: 42.6% (7,097/16,643) • By age: 21-49 y: 48.2% 50-69 y: 45% > 70 y: 34% S • By race/ethnicity: White: 42.5% Black -H: 43.7% • By payer: Government: 36.9% Private: 48.4% S • Links: NA	• Standard: ACOS, ACR, CAP, SSO guidelines, 1992 • Data sources: Medicare patients, NY State acute care hospitals, 1999 (n=1,718); medical records • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: current • Current use: external quality oversight • Care setting: hospitals; cancer centers; RT centers • Professionals: surgeons; RT oncologists; oncologists	• Inclusion: population-based sample women stage I-II BC receiving diagnosis & initial course of treatment at participating institution, 1994 • Exclusion: staging not performed or incomplete; pT3 tumours; surgery other than BCS or mastectomy • Period: 1 y (1994) • n patients (enrolled/ evaluated): 17,931/16,643 • Age (mean & range): 60.8 (21->70) y • Race/ethnicity: White (85.9%); Black (7.8%); Hispanic (2.9%) • Case characteristics: clinical stage I (41.5%); stage II (20.8%); pT1 (68%); pT2 (32%); pN0 (75.5%); pN1 (24.5%); ER (+) (65.6%); PR (+) (56.7%); infiltrating ductal, lobular (92.6%); postmenopausal (70.9%) • Socioeconomic status: Medicare (42.1%) • Funding: Patterns of Care Study
	• % appropriate use of RT after BCS[IV]	• Overall: 86% (6,099/7,097) • By age: <70 y: 88.4% ≥70 y: 78.9% • By race/ethnicity: White: 86.3% Black -H: 83.2% Other: 81.9% • By payer: Government: 83.3% Private: 88.5% S • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; BC = breast cancer; enrolled = n qualified; evaluated = n analyzed; ACOS = American College of Surgeons; ACR = American College of Radiology; CAP = College of American Pathologists; SSO = Society of Surgical Oncology; BCS = breast-conserving surgery; pT = pathologic tumour size; pN = pathologic nodal status; RT = radiotherapy; state of use = last 3 y; *BCT = tumor excision; axillary dissection & breast irradiation for stage I & II BC; NY = New York; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures - Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Nattinger, 2000, US	**Process:** • % appropriate use of definitive locoregional therapy (total mastectomy + ALND, or BCS + ALND + RT) [IV]	• Overall: 78% (1995) • Links: NA	• Standard: NIH Consensus Development Conference, 1990 • Data sources: NCI SEER registry; federal ARF information • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: external quality oversight • Care setting: hospitals; cancer centers; RT centers • Professionals: surgeons; oncologists; RT oncologists; GPs	• Inclusion: national population-based sample women aged ≥30 y at time of first diagnosis of invasive local or regional unilateral BC, 1983-1995 • Exclusion: no primary BCS or mastectomy, or type of surgery unknown; date of diagnosis unknown; delivery of RT unknown • Period: 13 y (1983-1995) • n patients (enrolled/ evaluated): 147,432/144,759 • Age (mean & range): NR (30->80) y • Race/ethnicity: White (87.3%); Black (7.1%) • Case characteristics: BC local (65%); regional (35%) • Socioeconomic status: NR • Funding: Department of Defence
	• % appropriate use of mastectomy with ALND[IV]	• Overall: 97.3% • Links: NA		
	• % appropriate use of BCS with ALND & RT[IV]	• Overall: 65% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; BC = breast cancer; enrolled = n qualified; evaluated = n analyzed; NCI = National Cancer Institute; SEER = Surveillance, Epidemiology, and End Results; ALDN = axillary lymph node dissection; BCS = breast-conserving surgery; RT = radiotherapy; state of use = last 3 y; GP = general practitioner; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Northouse, 1999, US	**Outcome:** • % change in QOL after diagnosis of BC*[lac]	• Overall: QOL (FACT-B): Mean: 116.5 (SD 20.7); (range 44-145) In average: fairly high QOL scale • By variables: Node (+): lower QOL (mean: 110.8) than node (-) (mean: 120.7) Recurrence of cancer: lower QOL (mean: 107.1) vs no recurrence (mean: 118.2) • Links: NA	• Standard: BC specific version of 37-item scale FACT-B, 1993 (physical & family well-being; relationship with MD; emotional & functional well-being) • Data sources: medical oncology offices, Southeastern region, Michigan, pts self-reported status using Questionnaire forms • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: internal quality improvement • Care setting: hospitals; cancer centers; • Professionals: oncologists	• Inclusion: convenience sample of black women confirmed diagnosis of BC at least 1 mo post-diagnosis, Southeastern region, Michigan • Exclusion: pts refusal to participate in study • Period: NR • n patients (enrolled/ evaluated): 140/98 • Age (mean & range): 55 (29-81) y • Race/ethnicity: Black (100%) • Case characteristics: BC radical mastectomy (70%); node (-) (57.4%) • Socioeconomic status: working (54.2%); retired (38.6%); unemployed (7.2%); Income < U$15,000 29.7%); married (41%) • Funding: Dean's discretionary fund grant; Wayne State University

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; BC = breast cancer; enrolled = n qualified; evaluated = n analyzed; QOL = quality of life; FACT-B = functional assessment of cancer therapy scale (version 3); state of use = last 3 y; *Higher scores = better QOL; MD = medical doctor; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Osoba, 1999, Canada & US	**Outcome:** • change in QOL in women with metastatic BC treated with trastuzumab assessed by self-administered EORTC core QOLQ – C30 baseline & wks 12; 24; 36[Ia]	• Overall: NR By phase of study: Phase II: no apparent worsening of scores Phase III: NS changes • Links: NA	• Instrument: self-administered EORTC core QOLQ- C30 (30 items) (global score; physical; social; role functions & fatigue in phase II & III of clinical trial) scale 0-100* • Data sources: pts self-reported status using EORTC QOL questionnaire C30 • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: internal quality improvement • Care setting: hospitals; cancer centers; • Professionals: oncologists	• Inclusion: convenience sample women progressive HER-2- overexpressing metastatic BC previously treated with CT (phase II), or who had not had previous cytotoxic CT (phase III) received trastuzumab • Exclusion: NR • Period: 32 wks • n patients (enrolled/ evaluated): 207/154 • Age (mean & range): NR • Race/ethnicity: NR • Case characteristics: women with metastatic BC with or without previous CT • Socioeconomic status: NR • Funding: Genentech, Inc.

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; EORTC = European Organization for Research and Treatment of Cancer; QOL = quality of life; QOLQ = quality of life questionnaire; state of use = last 3 y; * Higher scores = better QOL (except in fatigue); Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance Data: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/Data Source(s)/ Developmental History/Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Ottevanger, 2002, Netherlands	**Process:** • % appropriate use of BCS[IV]	• Overall: 55.5% (141/254) • Links: 5-y OS BCS 77% vs. mastectomy 77 % NS 5-y DFS: BCS 59% vs. mastectomy 65% NS	• Standard: Regional Guidelines (CCCE) (year: NR) • Data sources: Regional Cancer Registry & PALGA (Dutch National Pathology Registration System) • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: external quality oversight; quality of care reporting; research • Care setting: hospitals; pathology centers • Professionals: pathologists; oncologists; surgeons	• Inclusion: population-based sample premenopausal women, node (+) BC stages II-IIIA treated in 9 hospitals using the guidelines, 1988-1992 • Exclusion: 1 hospital opposed to CT treatment of the CPG • Period: 5 y (1993-1998) • n patients (enrolled/ evaluated): 254/254 • Age (mean & range): NR • Race/ethnicity: NR • Case characteristics: premenopausal women, node (+) BC stages II-IIIA • Socioeconomic status: NR • Funding: Comprehensive Cancer Centre East (CCCE)
	• % appropriate use of mastectomy in large or multifocal tumors, tumor fixed to pectoral muscle or fascia or skin[IV]	• Overall: 44.5% (113/254) • Links: 5-y OS BCS 77% vs. mastectomy 77% NS 5-y DFS: BCS 59% vs. mastectomy 65% NS		
	• % appropriate use of RT after BCS[IV]	• Overall: 100% (141/141) • Links: NA		
	• % appropriate use of RT in axilla for extracapsular extension of ALN metastases[IV]	• Overall: 84.7% (72/85) • Links: locoregional relapse rate: 9.4% (received) vs. 14.3% (not) NS 5-y OS: 76% (received) vs. 77% (not) NS		
	• % appropriate use of parasternal RT for tumors located medial part of breast[IV]	• Overall: 49.1% (56/114) • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; LN = lymph nodes; BCS = breast -conserving surgery; RT = radiotherapy; CPG = clinical practice guideline; ER = estrogen receptor; PR = progesterone receptor; BC = breast cancer; ALN = axillary lymph nodes; CMF= cyclophosphamide/methotrexate/5-fluorouracil; CT = chemotherapy; state of use = last 3 y; CCCE = Comprehensive Cancer Center East; DFS = disease-free survival; OS = overall survival; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance Data: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/Data Source(s)/ Developmental History/Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Ottevanger, 2002, Netherlands (cont'd)	• % quality of CT: proper doses administered (≥85% DI & RDI) of CMF[IV]	• Overall: 78.9% (DI); 58.7% (RDI) • Links: 5-y OS <65% DI: 50% vs. >85%: 77% S 5-y DFS: <65% DI: 44% vs. >85%: 61% S	• See above.	• See above.
	• % reporting n axillary LN investigated[IV]	• Overall: • By n nodes: ≥10: 59.2% (138/233) <10: 40.8% (95/233) • Links: 5-y OS: <10 nodes 72% vs. ≥10 nodes 81% NS 5-y DFS: <10 nodes 59% vs. ≥10 nodes 64% NS		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; LN = lymph nodes; BCS = breast -conserving surgery; RT = radiotherapy; CPG = clinical practice guideline; ER = estrogen receptor; PR = progesterone receptor; BC = breast cancer; ALN = axillary lymph nodes; CMF= cyclophosphamide/methotrexate/5-fluorouracil; CT = chemotherapy; state of use = last 3 y; CCCE = Comprehensive Cancer Center East; DFS = disease-free survival; OS = overall survival; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance Data: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/Data Source(s)/ Developmental History/Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Palazzi, 2002, Italy	**Process:** • % appropriate decision not to provide adjuvant systemic therapy for women node (-), low risk BC[IV]	• Overall: 69% (59/85) • Links: NA	• Standard: SGCC, 1995 • Data sources: database of 12 centers participating • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: external quality oversight; research • Care setting: RT centers • Professionals: RT oncologists; oncologists; surgeons; clinicians	• Inclusion: convenience sample women with prescription of RT to breast after BCS for infiltrating carcinoma & known ALN status • Exclusion: previous or synchronous surgery for cancer in contralateral breast • Period: 1 y (1997) • n patients (enrolled/ evaluated): 1,610/ 1,547 • Age (mean & range): 55 (25-82) y • Race/ethnicity: NR • Case characteristics: women ESBC; premenopausal (31%); T1 stage (81%); ER (+) (65%); node (+) (31%) • Socioeconomic status: NR • Funding: NR
	• % appropriate use of tamoxifen in premenopausal women BC; node (-); intermediate risk[IV]	• Overall: 33% • Links: NA		
	• % appropriate use of tamoxifen postmenopausal women BC; node (-); intermediate risk[IV]	• Overall: 59% • Links: NA		
	• % appropriate use of CT premenopausal women BC; node (-); high risk; ER (+)[IV]	• Overall: 55% • Links: NA		
	• % appropriate use of tamoxifen postmenopausal women BC; node (-); high risk; ER (+)[IV]	• Overall: 59% • Links: NA		
	• % appropriate use of CT women BC node (-); high risk; ER (-)[IV]	• Overall: 59% • Links: NA		
	• % appropriate use of CT premenopausal women BC node (+); ER (-)[IV]	• Overall: 90% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; SGCC = St Gallen consensus conference; RT = radiotherapy; ESBC = early stage breast cancer; BCS = breast-conserving surgery; ER = estrogen receptor; CT = chemotherapy, OA = ovarian ablation; (+) = positive; (-) = negative; state of use = last 3 y; ALN = axillary lymph node; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance Data: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/Data Source(s)/ Developmental History/Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Palazzi, 2002, Italy (cont'd)	• % appropriate use of CT &/or OA premenopausal women BC node (+); ER (+)[IV]	• Overall: NR • By treatment: CT: 73% CT+ OA: 18% OA: 4% • Links: NA	See above.	See above.
	• % appropriate use of CT postmenopausal women BC node (+); ER (-)[IV]	• Overall: 81% • Links: NA		
	• % appropriate use of tamoxifen postmenopausal women BC node (+);ER (+)[IV]	• Overall: 40% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; SGCC = St Gallen consensus conference; RT = radiotherapy; ESBC = early stage breast cancer; BCS = breast-conserving surgery; ER = estrogen receptor; CT = chemotherapy, OA = ovarian ablation; (+) = positive; (-) = negative; state of use = last 3 y; ALN = axillary lymph node; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Perez, 2001, New Zealand UK	**Outcome:** • % change in QOL & TTO scales during 1 y in metastatic disease*[Iac]	• Overall: NR • Links: NA	• Instrument: HRQOL scale: Spitzer QLI & uniscale questionnaire (scale 0-100); TTO • Data Sources: pts self-reported status (questionnaires) • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: internal quality improvement • Care setting: hospitals; cancer centers • Professionals: oncologists	• Inclusion: Convenience sample women presenting at Dunedin Hospital, NZ, with metastatic symptoms BC • Exclusion: refused to complete TTO scale • Period: 1 y (NR) • n patients (enrolled/ evaluated): 64/38 • Age (mean & range): 58.7 (30-80) y • Race/ethnicity: NR • Case characteristics: women advanced metastatic symptomatic BC • Socioeconomic status: NR • Funding: Cancer Society of NZ

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; QLI = quality of life index; BC = breast cancer; state of use = last 3 y; HRQOL = health related quality of life; QOL = quality of life; * Higher scores = better QOL; NZ = New Zealand; TTO = time trade-off; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Ray-Coquard, 1997, France	• % appropriate use of treatment sequences according to guidelines (including all medical decisions on surgery; RT; CT; HT; initial examination & follow-up) [IV]	• Overall: 54% (53/99) • Links: NA	• Standard: regional CPG, 1993; implemented, 1994 • Data sources: medical records • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: internal quality improvement; external quality oversight, decision-making; research • Care setting: hospitals; cancer centers; RT centers • Professionals: surgeons; oncologists; RT oncologists	• Inclusion: random sample women newly diagnosed localized BC (DCIS to nonmetastatic invasive carcinoma) in cancer center, Rhone Alpes area, France • Exclusion: concomitant health care (e.g. genetic counselling; pain treatment; plastic surgery); early death; missing data in records; tumor size not recorded • Period: 1 y (1995) • n patients (enrolled/ evaluated): 701/99 • Age (mean & range): 51 (26-90) y • Race/ethnicity: NR • Case characteristics: localized ESBC; node (-) 66%; ER (+) 57%, DCIS 18% • Socioeconomic status: NR • Funding: NR
	• % appropriate use of initial examination[IV]	• Overall: 86% (61/71) • Links: NA		
	• % appropriate use of surgery[IV]	• Overall: 92% (91/99) • Links: NA		
	• % appropriate use of CT[IV]	• Overall: 85% (84/99) • Links: NA		
	• % appropriate use of RT[IV]	• Overall: 93% (92/99) • Links: NA		
	• % appropriate use of HT (tamoxifen) [IV]	• Overall: 94% (93/99) • Links: NA		
	• % appropriate use of follow-up[IV]	• Overall: 80% (68/85) • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; CT = chemotherapy; RT = radiotherapy; HT = hormone therapy; ER = estrogen receptor; PR = progesterone receptor; CPG = clinical practice guidelines; DCIS = ductal carcinoma in situ; BC = breast cancer; state of use = last 3 y; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Ray-Coquard, 2002, France	**Process:** • % appropriate use of treatment sequences according to CPG (including surgery; RT; CT; HT; initial examination; follow-up) [IV]	• Overall: 36% • By intervention: Initial examination: 86% Surgery: 94% CT: 78% RT: 77% HT: 79% Follow-up: 81% • Links: NA	• Standard: Regional (ONCORA) CPG, 1995 • Data sources: institutional records • Developmental period: NR • Reference standard(s) (Publication Date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: external quality oversight • Care setting: hospitals; cancer centers • Professionals: oncologists; surgeons; GPs	• Inclusion: random sample women newly referred localized BC (in situ or invasive) treated in cancer network, Rhone-Alpes Area, France, 1996 • Exclusion: record with data missing (surgical biopsy), metastases, patients refused surgery, no axillary dissection, treatment CI • Period: 1 y (1996) • n patients (enrolled/ evaluated): 367/ 346 • Age (mean & range): 60 (30-91) y • Race/ethnicity: NR • Case characteristics: women localized BC, T1-T3 or In situ, 17 mm, HR (+) 61% • Socioeconomic status: NR • Funding: Ministry of Health (France)

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; LN = lymph nodes; BCS = breast-conserving surgery; RT = radiotherapy; HR = Hormone receptor; CI = contraindication; CT = chemotherapy; HT = hormone therapy; CPG = clinical practice guidelines; state of use = last 3 y; GP = general practitioner; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Sauven, 2003, UK	**Process:** • % appropriate use of preoperative diagnosis by FNA cytology, needle histology or biopsy (minimum: ≥70%; target standard: ≥90%)[IV]	• Overall: NR • By y: 1996/97: 63% 1997/98: 71% 1998/99: 81% 1999/2000: 85% 2000/01: 87% • Links: NA	• Standard: NHSBSP surgical standards, 1992 • Data sources: regional boundaries; KC62 Korner returns; breast screening unit records • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: external quality oversight • Care setting: hospitals; cancer centers; RT centers • Professionals: surgeons; oncologists; pathologists	• Inclusion: population-based sample BC women detected by screening UK, Wales, Scotland & Northern Ireland, 1996-2001 • Exclusion: NR • Period: 5 y (1996-2001) • n patients (enrolled/ evaluated): 43,500/43,500 • n surgeons (enrolled/ evaluated): 1,531/1,000 • Age (mean & range): NR • Race/ethnicity: NR • Case characteristics: NR • Socioeconomic status: NR • Funding: NHSBSP
	• % quality of technique to determine histological node status obtained for all invasive tumors by sampling or clearance[IV]	• Overall: NR • By y: 1996/97: 81% 1997/98: 87% 1998/99: 90% 1999/2000: 93% 2000/01: 93% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BC = breast cancer; NHSBSP = national health service breast screening program; FNA = fine-needle aspiration; state of use = last 3 y; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Sauven, 2003, UK (cont'd)	• % quality of sampling for invasive cancer: to include ≥ 4 nodes[IV]	• Overall: NR • By y: 1996/97: 89% 1997/98: 91% 1998/99: 93% 1999/2000: 94% 2000/01: 95% • Links: NA	• See above.	• See above.
	Structure: • % management of cases coming to surgery from screening program carried out by surgeons who have acquired necessary specialist knowledge[IV]	• Overall: NR • By y & case load: > 30 pts/y, high*: 1996/97: 63% 1997/98: 67% 1998/99: 66% 1999/2000: 71% 2000/01: 72% < 10 pts/y, low: 1996/97: 8% 1997/98: 7% 1998/99: 7% 1999/2000: 6% 2000/01: 5% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BC = breast cancer; NHSBSP = national health service breast screening program; FNA = fine-needle aspiration; state of use = last 3 y; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Sauven, 2003, UK (cont'd)	**Access:** • % (≥90%) women requiring an operation for diagnostic purposes should be admitted within 14 d of surgical decision [IV]	• Overall: NR • By y: 1996/97: 60% 1997/98: 52% 1998/99: 52% 1999/2000: 60% • Links: NA	• See above.	• See above.
	• % (≥90%) women admitted for operation within 21 d of surgical decision to operate for therapeutic purposes[IV]	• Overall: NR • By y: 1996/97: 82% 1997/98: 81% 1998/99: 80% 1999/2000: 77% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BC = breast cancer; NHSBSP = national health service breast screening program; FNA = fine-needle aspiration; state of use = last 3 y; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Sawka, 1997, Canada	**Process**: • % appropriate decision not to provide adjuvant systemic therapy in <50 y; low risk[IV]	• Overall: 84.9% • Links: NA	• Standard: Guidelines of British Columbia, 1991 • Data Sources: Provincial Cancer Registry; medical records; other databases (e.g. drug data) • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: external quality oversight • Care setting: hospitals; oncology centers; RT centers • Professionals: oncologists; surgeons; RT oncologists	• Inclusion: population-based sample women BC node (-) diagnosed, British Columbia, 1991 • Exclusion: age> 90 y; diagnosis by death certificate; death within 30 days of diagnosis; stage III or IV; in situ disease; non-epithelial malignancies & any previous invasive cancer or history of DCIS; node (+) or unknown nodal status • Period: 5 y (1993- 1998) • n patients (enrolled/evaluated): 2,317/932 • Age (mean & range): NR (<50->65) y • Race/ethnicity: NR • Case characteristics: women BC node (-); tumor <2 cm (62.1%); LVN invasion (68.8%); ER (+) (60.4%); PR (+) (38.9%) • Socioeconomic status: income >U$ 50,000/ y (26.1%); rural residence (15.4%) • Funding: NCI of Canada (Canadian Cancer Society) & National Health Scholar Award from Health Canada
	• % appropriate use of CT in <50 y; high risk; presence of LVN invasion; or tumor > 2 cm; if ER (-)[IV]	• Overall: 78.6% • Links: NA		
	• % appropriate decision not to provide adjuvant systemic therapy in 50-65 y low risk[IV]	• Overall: 90.3% • Links: NA		
	• % appropriate use of tamoxifen & CT or tamoxifen in 50-65 y; high risk; ER (+)[IV]	• Overall: 6.6% (tamoxifen & CT) 62.3% (tamoxifen) • Links: NA		
	• % appropriate use of CT in 50-65 y; high risk; ER (-)[IV]	• Overall: 19.1% • Links: NA		
	• % appropriate use of adjuvant systemic therapy in >65 y; low risk[IV]	• Overall: 85.9% • Links: NA		
	• % appropriate use of tamoxifen in >65 y; high risk; ER (+)[IV]	• Overall: 56.5% • Links: NA		
	• % appropriate decision not to provide adjuvant systemic therapy in > 65 y; high risk; ER (-)[IV]	• Overall: 82.1% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; LN = lymph nodes; LVN = lymph, vessels or nerves invasion; RT= radiotherapy; ER = estrogen receptor; PR = progesterone receptor; BC = breast cancer; CT = chemotherapy; NCI = National Cancer Institute; DCIS = ductal carcinoma in situ; state of use = last 3 y; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance Data: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/Data Source(s)/ Developmental History/Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Shank, 2000, US	**Structure:** • % pathology reports on chart[IV]	• Overall: 99.7% (725/727) • Links: NA	• Standard: ACR, ACS, CAP & SSO standards for breast conservation treatment, 1992 • Data sources: survey; medical records • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: quality of care reporting; internal quality improvement • Care setting: hospitals; cancer centers; pathology centers • Professionals: RT oncologists, surgeons; pathologists; oncologists	• Inclusion: random sample women stage I-II invasive BC treated, 1993-1994 • Exclusion: pts not treated 1993-1994; males; purely non-invasive carcinoma; not stage I-II BC; gross multicentric disease; bilateral lesion; prior or concurrent malignancies; mastectomy as primary treatment • Period: 2 y (1995-1996) • n patients (enrolled/ evaluated): 993/727 • Age (mean & range): NR (20->80) y • Race/ethnicity: White (84.2%); Black (7.3%); Hispanic (4.4%); Asian (2.8%) • Case characteristics: age >50 y (70%); stage I or II invasive BC; postmenopausal (68.6%) • Socioeconomic status: NR • Funding: NCI
	Process: • % appropriate use of preoperative mammographic evaluation (performed ≤3 mo) [IV]	• Overall: 91.5% (665/727) • Links: NA		
	• % reporting identification of affected quadrant[IV]	• Overall: 97.8% (711/727) • Links: NA		
	• % reporting clinical size of primary tumor[IV]	• Overall: 45.9% (334/727) • Links: NA		
	• % reporting final gross surgical margins[IV]	• Overall: 96.8% (704/727) • Links: NA		
	• % reporting final microscopic surgical margins[IV]	• Overall: 95.6% (695/727) • Links: NA		
	• % reporting histopathological type	• Overall: 99.7% (725/727) • Links: NA		
	• % reporting intraductal carcinoma quantification[IV]	• Overall: 8.5% (62/727) • Links: NA		
	• % reporting of extent of primary tumor[IV]	• Overall: 99.3% (722/727) • Links: NA		
	• % reporting size of invasive component[IV]	• Overall: 8.5% (62/727) • Links: NA		
	• % reporting total pathological tumour size[IV]	• Overall: 95.3% (693/727) • Links: NA		
	• % reporting ER status[IV]	• Overall: 89% (647/727) • Links: NA		
	• % reporting PR status[IV]	• Overall: 86.4% (628/727) • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; BC = breast cancer; enrolled = n qualified; evaluated = n analyzed; ACR = American College of Radiology; ACS = American College of Surgeons; CAP = College of American Pathologists; SSO = Society of Surgical Oncology; ER = estrogen receptors; PR = progesterone receptors; state of use = last 3 y; RT = radiotherapy; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance Data: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/Data Source(s)/ Developmental History/Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Shank, 2000, US (cont'd)	• % reporting performing flow cytometry [IV]	• Overall: 95.3% (693/727) • Links: NA	• See above.	• See above.
	• % reporting cytometry ploidity[IV]	• Overall: 98.9% (719/727) • Links: NA		
	• % reporting pathological node status [IV]	• Overall: 92% (670/727) • Links: NA		
	• % quality of RT: wedges on tangent breast fields[IV]	• Overall: 92.8% (671/723) • Links: NA		
	• % quality of RT: both tangent fields treated daily [IV]	• Overall: 99.9% (724/725) • Links: NA		
	• % quality of RT: 4,500-5,000 cGy total breast dose given to 180-200 cGy fractions[IV]	• Overall: 99% (723/725) • Links: NA		
	• % quality of RT: electron beam breast radiation used[IV]	• Overall: 94% (681/725) • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; BC = breast cancer; enrolled = n qualified; evaluated = n analyzed; ACR = American College of Radiology; ACS = American College of Surgeons; CAP = College of American Pathologists; SSO = Society of Surgical Oncology; ER = estrogen receptors; PR = progesterone receptors; state of use = last 3 y; RT = radiotherapy; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Silliman, 1999, US	**Process:** • % appropriate use of definitive locoregional therapy (total mastectomy + ALND or BCS with ALND + RT) [IV]	• Overall: 77.2% (234/303) • By surgery type: BCS + RT: 56% Mastectomy: 22% • By income: ≤U$14,999: 55% $15,000-29, 999: 85% $30,000-49,999: 91% ≥$50,000: 87% • By education: <High school: 55% High school: 75% Some College: 83% College: 82% • Links: NA	• Standard: NIH Consensus Development Conference, 1990 • Data sources: medical records; 35-minute computer-assisted telephone interview with pts; Physicians Profiles database of the Board of Registration in Medicine of the Commonwealth of MA • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: external quality oversight • Care setting: hospitals; cancer centers; RT centers • Professionals: oncologists; RT oncologists; GPs	• Inclusion: convenience sample women ≥55 y newly diagnosed stage I or II BC treated in 1/5 academic centers, Boston • Exclusion: NR • Period: NR • n patients (enrolled/ evaluated): 303/303 • Age (mean & range): 67.7 (55-97) y • Race: White (93%) • Case characteristics: stage I (64%) • Socioeconomic status: income: ≤ U$14,999 (17.5%); $15,000-$29,999 (19.8%); $30,000-$49,999 (21.1%); >$50,000 (17.5%); married (48.8%); ≥ High school (83%) • Funding: NCI, NHI; US ARDALC
	• % appropriate use of any adjuvant systemic therapy (CT &/or HT) [IV]	• Overall: 67.3% (204/303) • By adjuvant therapy: HT alone: 76% CT alone: 13% HT + CT: 11% • By income: ≤U$14,999: 64% $15,000-29,999: 60% $30,000-49,999: 77% ≥$50,000: 73% • By education: < High school: 60% High school: 68% Some College: 64% College: 72% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BC = breast cancer; NCI = National Cancer Centre; NIH = National Health Institute; ARDALC = Army Research, Development, Acquisition and Logistic Command; MA = Massachusetts; state of use = last 3 y; GP = general practitioner; RT = radiotherapy; CT = chemotherapy; HT = hormone therapy; BCS = breast-conserving surgery; ALND = axillary lymph node dissection; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Silliman, 1999, US (cont'd)	• % appropriate use of alternative definitive therapy (both tumor therapy & adjuvant systemic therapy) [IV]	• Overall: 51.8% (157/303) • By age: 55-64 y: 50% (78/157) 65-74 y: 41% (65/157) 75-84 y: 9% • Links: NA	• See above.	• See above.

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BC = breast cancer; NCI = National Cancer Centre; NIH = National Health Institute; ARDALC = Army Research, Development, Acquisition and Logistic Command; MA = Massachusetts; state of use = last 3 y; GP = general practitioner RT = radiotherapy; CT = chemotherapy; HT = hormone therapy; BCS = breast-conserving surgery; ALND = axillary lymph node dissection; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance Data: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/Data Source(s)/ Developmental History/Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Solin, 1999, US	**Process:** • % appropriate use of BCS[IV]	• Overall: 65% (62/95) • Links: NA	• Standard: NIH Consensus Development Conference, 1990 • Data sources: HMO claim database; medical records • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: external quality oversight; research • Care setting: hospitals; pathology centers; RT centers; cancer centers • Professionals: pathologists; oncologists; surgeons; GPs	• Inclusion: convenience sample women ≥ 65 y, newly diagnosed stage 0-II BC <5cm in diameter • Exclusion: LCIS; bilateral carcinoma • Period: 2 y (1993-1994) • n patients (enrolled/ evaluated): 130/130 • Age (mean & range): 72 (65-91) y • Race/ethnicity: White (83%); Black (5%) • Case characteristics: DCIS (6%); invasive BC (94%); tumor size (<1cm 23%; 1.1-2 cm 26%; 2.1-3 cm 12%); stages 0-IV; node (-) (73%) • Socioeconomic status: NR • Funding: NR
	• % appropriate use of RT after BCS[IV]	• Overall: 89% (55/62) • Links: NA		
	• % appropriate use of definite breast irradiation in DCIS[IV]	• Overall: 60% (3/5) • Links: NA		
	• % appropriate use of definite breast irradiation in stage I-II [IV]	• Overall: 91% (52/57) • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; BCS = breast-conserving surgery; RT = radiotherapy; DCIS = ductal carcinoma in situ; BC = breast cancer; NIH = National Institute of Health; state of use = last 3 y; GP = general practitioner; HMO = health maintenance organization; LCIS = lobular carcinoma in situ; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
Tyldesley, 2003, Canada	**Process**: • % appropriate use of BCS in DCIS; eligible & preferred*[IV]	• Overall: 63% • Links: NA	• Standard: systematic review; evidence based recommendations for BCS in North America (US & Canada); CPG (n = 12); 1991-2001 • Data sources: several databases (SEER; OCR) • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: external quality oversight; research • Care setting: cancer centers; hospitals; RT centers • Professionals: oncologists; surgeons; RT oncologists	• Inclusion: population-based samples women ESBC eligible for BCS in North American population • Exclusion: NR • Period: NR • n patients (enrolled/ evaluated): NR • Age (mean & range): NR • Race/ethnicity: NR • Case characteristics: ESBC including DCIS; stage I-IIIA • Socioeconomic status: NR • Funding: Cancer Care Ontario; NCI of Canada
	• % appropriate use of BCS in stage; eligible & preferred**[IV]	• Overall: 57% • Links: NA		
	• % appropriate use of BCS in stage II; eligible & preferred**[IV]	• Overall: 52% • Links: NA		
	• % appropriate use of BCS in stage IIIA; eligible & preferred***[IV]	• Overall: 27% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; RT = radiotherapy; CT = chemotherapy; HR = hormone receptor; state of use = last 3; ER = estrogen receptor; PR = progesterone receptor; BC = breast cancer; NCI = National Cancer Institute; SEER = surveillance epidemiology end results; OCR = Ontario cancer registry; BCS = breast-conserving surgery; DCIS = ductal carcinoma in situ; SLE = systemic lupus erithematous; SS = systemic sclerosis; *DCIS: low/moderate risk; not pregnant; no prior RT; no SLE/SS; **Stage I: not pregnant; no prior RT; solitary primary; no SLE/SS; negative margins; low tumor/breast size rate; *** Stage IIIA: not pregnant; no prior RT; solitary primary tumor; no SLE/SS; CR/PR (complete or partial response to neo-adjuvant CT that eliminates the need for mastectomy; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
White, 2003, US	**Process:** • % appropriate use of preoperative mammographic evaluation[IV]	• Overall: 88% • By age: <70 y: 88.5% ≥70 y: 86.2% • By race/ethnicity: White: 88.4% Black-H: 86.5% Other: 87.5% • By payer: Government: 87.7% Private: 88.7% • Links: NA	• Standard: ACOS; ACR; CAP; SSO standards for BCT, 1992 • Data sources: cancer registries of 842 US hospitals • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: quality of care reporting; external quality oversight; research • Care setting: hospitals; RT centers; cancer centers • Professionals: RT oncologists; oncologists; surgeons; GPs	• Inclusion: convenience sample women BC Stage I-II diagnosed, 1994 • Exclusion: incomplete pathologic reporting; not appropriate candidates for BCT based on standards; stage III-IV • Period: 1 y (1994) • n patients (enrolled/ evaluated): 17,931/16,643 • Age (mean & range): 62 (21->70) y • Race/ethnicity: White (85.9%), Black (7.8%), Hispanic (2.9%), Asian (2%), other (1.3%) • Case characteristics: NR • Socioeconomic status: private insurance (34.5%); HMO (14.7%); Medicare (42.1%); Medicaid (7%) • Funding: NCI
	• % reporting size of mammographic abnormality [IV]	• Overall: 47% • By age: <70 y: 45.9% ≥70 y: 50.7% • By race/ethnicity: White: 47.5% Black-H: 46.3% Other: 39.6% • By payer: Government: 50.3% Private: 44.8% S • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BC = breast cancer; LV = Lymphatic/Vascular; ER = estrogen receptor; PR = progesterone receptor; RT = radiotherapy; BCS = breast-conserving surgery; ACOS = American College of Surgeons; node (+) = lymph node positive; state of use = last 3 y; GP = general practitioner; NCI = National Cancer Institute; CAP = college of American pathologists; SSO = society of surgical oncology; ACR = American Collage of radiology; BCT = breast-conservation therapy; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
White, 2003, US (cont'd)	• % appropriate use of BCS[IV]	• Overall: 42.6% • By age: <70 y: 46% ≥70 y: 34% • By race/ethnicity: White: 43% Black-H: 44% Other: 36% • By payer: Government: 37% Private: 48% S • Links: NA	• See above.	• See above.
	• % reporting laterality of surgical specimen[IV]	• Overall: 98.3% • By age: <70 y: 98.2% ≥70 y: 98.6% • By race/ethnicity: White: 98.2% Black-H: 98.5% Other: 99.3% • By payer: Government: 98.4% Private: 98.3% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BC = breast cancer; LV = Lymphatic/Vascular; ER = estrogen receptor; PR = progesterone receptor; RT = radiotherapy; BCS = breast-conserving surgery; ACOS = American Collage of Surgeons; node (+) = lymph node positive; state of use = last 3 y; GP = general practitioner; NCI = National Cancer Institute; CAP = Collage of American pathologists; SSO = Society of Surgical Oncology; ACR = American Collage of radiology; BCT = breast-conservation therapy; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
White, 2003, US (cont'd)	• % reporting identification of affected quadrant[IV]	• Overall: 21.1% • By age: <70 y: 21.1% ≥70 y: 21.3% • By race/ethnicity: White: 20.5% Black-H: 26.3% Other: 21.5% • By payer: Government: 22% Private: 20.4% • Links: NA	• See above.	• See above.
	• % reporting pathological specimen oriented[IV]	• Overall: 67.1% • By age: <70 y: 68% ≥70 y: 64.9% • By race/ethnicity: White: 67.6% Black-H: 64.2% Other: 71.5% • By payer: Government: 67.5% Private: 67.1% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BC = breast cancer; LV = Lymphatic/Vascular; ER = estrogen receptor; PR = progesterone receptor; RT = radiotherapy; BCS = breast-conserving surgery; ACOS = American Collage of Surgeons; node (+) = lymph node positive; state of use = last 3 y; GP = general practitioner; NCI = National Cancer Institute; CAP = Collage of American pathologists; SSO = Society of Surgical Oncology; ACR = American Collage of radiology; BCT = breast-conservation therapy; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
White, 2003, US (cont'd)	• % reporting carcinoma microscopically confirmed[IV]	• Overall: 97.8% • By age: <70 y: 97.7% ≥70 y: 97.9% • By race/ethnicity: White: 97.9% Black -H: 96.7% Other: 99.3% • By payer: Government: 98.1% Private: 97.7% • Links: NA	• See above.	• See above.
	• % reporting histological type[IV]	• Overall: 98.8% • By age: <70 y: 98.8% ≥70 y: 98.7% • By race/ethnicity: White: 98.8% Black -H: 99% Other: 99.3% • By payer: Government: 99% Private: 98.7% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BC = breast cancer; LV = Lymphatic/Vascular; ER = estrogen receptor; PR = progesterone receptor; RT = radiotherapy; BCS = breast-conserving surgery; ACOS = American Collage of Surgeons; node (+) = lymph node positive; state of use = last 3 y; GP = general practitioner; NCI = National Cancer Institute; CAP = College of American Pathologists; SSO = Society of Surgical Oncology; ACR = American College of Radiology; BCT = breast-conservation therapy; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
White, 2003, US (cont'd)	• % reporting histological grade[IV]	• Overall: 80.6% • By age: <70 y: 81.1% ≥70 y: 79.3% • By race/ethnicity: White: 80.5% Black -H: 79.7% Other: 88.9% • By payer: Government: 80.1% Private: 81.2% • Links: NA	• See above.	• See above.
	• % reporting LV invasion[IV]	• Overall: 53.5% • By age: <70 y: 54.3% ≥70 y: 51.5% • By race/ethnicity: White: 52.9% Black -H: 54.4% Other: 70.8% • By payer: Government: 51.3% Private: 54.9% S • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BC = breast cancer; LV = Lymphatic/Vascular; ER = estrogen receptor; PR = progesterone receptor; RT = radiotherapy; BCS = breast-conserving surgery; ACOS = American College of Surgeons; node (+) = lymph node positive; state of use = last 3 y; GP = general practitioner; NCI = National Cancer Institute; CAP = College of American pathologists; SSO = Society of Surgical Oncology; ACR = American College of Radiology; BCT = breast-conservation therapy; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
White, 2003, US (cont'd)	• % reporting size invasive carcinoma [IV]	• Overall: 91.8% • By age: <70 y: 91.6% ≥70 y: 91.9% • By race/ethnicity: White: 91.7% Black -H: 91.2% Other: 96.5% • By payer: Government: 91.6% Private: 92% • Links: NA	• See above.	• See above.
	• % reporting macroscopic margins of carcinoma measured[IV]	• Overall: 72.4% • By age: <70 y: 72.5% ≥70 y: 72.1% • By race/ethnicity: White: 72.5% Black -H: 73.5% Other: 61.8% • By payer: Government: 73.1% Private: 72.3% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BC = breast cancer; LV = Lymphatic/Vascular; ER = estrogen receptor; PR = progesterone receptor; RT = radiotherapy; BCS = breast-conserving surgery; ACOS = American College of Surgeons; node (+) = lymph node positive; state of use = last 3 y; GP = general practitioner; NCI = National Cancer Institute; CAP = College of American Pathologists; SSO = Society of Surgical Oncology; ACR = American College of Radiology; BCT = breast-conservation therapy; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
White, 2003, US (cont'd)	• % reporting microscopic margins assessment[IV]	• Overall: 89.5% • By age: <70 y: 90% ≥70 y: 88.7% • By race/ethnicity: White: 89.7% Black -H: 86.8% Other: 95.8% • By payer: Government: 89% Private: 90.2% • Links: NA	• See above.	• See above.
	• % reporting DCIS present/absent[IV]	• Overall: 43.2% • By age: <70 y: 44.8% ≥70 y: 38.6% • By race/ethnicity: White: 43.3% Black -H: 40.8% Other: 49.3% • By payer: Government: 40.2% Private: 45.7% S • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BC = breast cancer; LV = Lymphatic/Vascular; ER = estrogen receptor; PR = progesterone receptor; RT = radiotherapy; BCS = breast-conserving surgery; ACOS = American College of Surgeons; node (+) = lymph node positive; state of use = last 3 y; GP = general practitioner; NCI = National Cancer Institute; CAP = College of American Pathologists; SSO = Society of Surgical Oncology; ACR = American College of Radiology; BCT = breast-conservation therapy; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
White, 2003, US (cont'd)	• % reporting ER status[IV]	• Overall: 91.7% • By age: <70 y: 91.9% ≥70 y: 91.2% • By race/ethnicity: White: 91.8% Black -H: 90.4% Other: 96.5% • By payer: Government: 91.4% Private: 92.3% • Links: NA	• See above.	• See above.
	• % reporting PR status[IV]	• Overall: 90.6% • By age: <70 y: 90.9% ≥70 y: 89.7% • By race/ethnicity: White: 90.7% Black -H: 89.6% Other: 95.1% • By payer: Government: 90.1% Private: 91.4% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BC = breast cancer; LV = Lymphatic/Vascular; ER = estrogen receptor; PR = progesterone receptor; RT = radiotherapy; BCS = breast-conserving surgery; ACOS = American College of Surgeons; node (+) = lymph node positive; state of use = last 3 y; GP = general practitioner; NCI = National Cancer Institute; CAP = College of American Pathologists; SSO = Society of Surgical Oncology; ACR = American College of Radiology; BCT = breast-conservation therapy; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
White, 2003, US (cont'd)	• % appropriate use of RT after BCS[IV]	• Overall: 85.9% • By age: <70 y: 88.4% ≥70 y: 78.9% • By race/ethnicity: White: 86.3% Black -H: 83.2% Other: 81.9% • By payer: Government: 83.3% Private: 88.6% S • Links: NA	• See above.	• See above.
	• % quality of RT: planning on a dedicated simulator[IV]	• Overall: 88.9% • By age: <70 y: 89% ≥70 y: 88.8% • By race/ethnicity: White: 89% Black -H: 87.7% Other: 87.3% • By payer: Government: 89.1% Private: 88.8% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BC = breast cancer; LV = Lymphatic/Vascular; ER = estrogen receptor; PR = progesterone receptor; RT = radiotherapy; BCS = breast-conserving surgery; ACOS = American College of Surgeons; node (+) = lymph node positive; state of use = last 3 y; GP = general practitioner; NCI = National Cancer Institute; CAP = College of American Pathologists; SSO = Society of Surgical Oncology; ACR = American College of Radiology; BCT = breast-conservation therapy; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
White, 2003, US (cont'd)	• % quality of RT: homogenous dose distribution[IV]	• Overall: 96.6% • By age: <70 y: 96.6% ≥70 y: 96.8% • By race/ethnicity: White: 96.6% Black -H: 96.5% Other: 97.5% • By payer: Government: 96.7% Private: 96.7% • Links: NA	• See above.	• See above.
	• % quality of RT: done 5 d/wk[IV]	• Overall: 97.4% • By age: <70 y: 97.4% ≥70 y: 97.4% • By race/ethnicity: White: 97.5% Black -H: 97.5% • By payer: Government: 97.1% Private: 97.1% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BC = breast cancer; LV = Lymphatic/Vascular; ER = estrogen receptor; PR = progesterone receptor; RT = radiotherapy; BCS = breast-conserving surgery; ACOS = American College of Surgeons; node (+) = lymph node positive; state of use = last 3 y; GP = general practitioner; NCI = National Cancer Institute; CAP = College of American Pathologists; SSO = Society of Surgical Oncology; ACR = American College of Radiology; BCT = breast-conservation therapy; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
White, 2003, US (cont'd)	• % quality of RT: use of wedges on tangent breast fields[IV]	• Overall: 93.4% • By age: <70 y: 93.3% ≥70 y: 93.8% • By race/ethnicity: White: 93.5% Black -H: 92.1% Other: 97.5% • By payer: Government: 93% Private: 93.8% • Links: NA	• See above.	• See above.

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BC = breast cancer; LV = Lymphatic/Vascular; ER = estrogen receptor; PR = progesterone receptor; RT = radiotherapy; BCS = breast-conserving surgery; ACOS = American College of Surgeons; node (+) = lymph node positive; state of use = last 3 y; GP = general practitioner; NCI = National Cancer Institute; CAP = College of American Pathologists; SSO = Society of Surgical Oncology; ACR = American College of Radiology; BCT = breast-conservation therapy; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Evidence Table 1. Definition, developmental history, and adherence data revealed by quality measures/measurements (continued)

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/ Data Source(s)/ Developmental History/ Status	Use Parameters: Eligibility Criteria/ Measurement Period/ Sample(s) Characteristics/ Funding Source
White, 2003, US (cont'd)	• % appropriate use of adjuvant systemic therapy in node (+) after BCT[IV]	• Overall: 84.1% • By age: <70 y: 84.9-88.7% ≥70 y: 72% • By race/ethnicity: White: 85.3% Black -H: 78.7% Other: 78.3% • By payer: Government: 78.9% Private: 87.6% S • Links: NA	• See above.	• See above.

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BC = breast cancer; LV = Lymphatic/Vascular; ER = estrogen receptor; PR = progesterone receptor; RT = radiotherapy; BCS = breast-conserving surgery; ACOS = American College of Surgeons; node (+) = lymph node positive; state of use = last 3 y; GP = general practitioner; NCI = National Cancer Institute; CAP = College of American Pathologists; SSO = Society of Surgical Oncology; ACR = American College of Radiology; BCT = breast-conservation therapy; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Table 1 (continued). Definition, Developmental History, and Adherence Data Revealed by Quality Measures/Measurements

Author, Year, Location	Title of Quality Measures-Measurements (Organized by Domain)	Performance Data: Overall/ By Stratification(s)/ Other Data/ Links to Outcome	Reference Standard(s) (Publication Date)/Data Source(s)/Developmental History/Status	Use Parameters: Eligibility Criteria/Measurement Period/ Sample(s) Characteristics/ Funding Source
Wilkinson, 2003, US	**Process:** • % reporting of size specimen in 3 dimensions[IV]	• Overall: 91% • Links: NA	• Standard: CAP guideline, 1998 • Data sources: cancer database of Department of Surgery at Roswell Park Cancer Institute • Developmental period: NR • Reference standard(s) (publication date): NR • Data sources: NR • Psychometric properties: NR • Links to outcomes: NR • Funding source: NR • State of use: NR • Current use: internal quality improvement; quality of care reporting • Care setting: hospitals; cancer centers; pathology centers • Professionals: oncologists; pathologists; surgeons	• Inclusion: convenience sample women stage I-II breast infiltrative carcinoma referred to RPCI after excisional biopsy, 1998-1999 • Exclusion: simultaneous axillary staging or mastectomy performed; preceding FNA or CNB performed; carcinoma in situ • Period: 2 y (1998-1999) • n patients: (enrolled/evaluated): 100/83 • Age (mean & range): NR • Race/ethnicity: NR • Case characteristics: infiltrating carcinoma; stage I-II • Socioeconomic status: NR • Funding: NR
	• % reporting tumor size[IV]	• Overall: 40% • Links: NA		
	• % reporting orientation of specimen (for margin analysis)[IV]	• Overall: 25% • Links: NA		
	• % reporting microscopic margin status[IV]	• Overall: 94% • Links: NA		
	• % reporting distance to closest margin[IV]	• Overall: 69% • Links: NA		
	• % reporting specimen inked[IV]	• Overall: 77% • Links: NA		
	• % reporting histology type[IV]	• Overall: 100% • Links: NA		
	• % reporting histology grade[IV]	• Overall: 90% • Links: NA		
	• % reporting tumor size (microscopic)[IV]	• Overall: 90% • Links: NA		
	• % reporting lymphovascular invasion (presence/absence)[IV]	• Overall: 47% • Links: NA		
	• % reporting presence of in situ component[IV]	• Overall: 71% • Links: NA		
	• % reporting BSR scale (tumor grade)[IV]	• Overall: 6% • Links: NA		
	• % reporting TNM staging[IV]	• Overall: 9% • Links: NA		

NR = not reported; NA = not assessed; S = significant difference/trend; NS = nonsignificant difference/trend; n = number of patients; pts = patients; enrolled = n qualified; evaluated = n analyzed; BC = breast cancer; RPCI = Roswell Park Cancer Institute; FNA = fine-needle aspiration; CNB = core-needle biopsy; CAP = College of American Pathologists; CPG = clinical practice guideline; state of use = last 3 y; BSR = Bloom Scarf Richardson Scale; Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

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Listing of Quality Indicators Used to Measure Adherence to Standards of Breast Cancer Care

1. DIAGNOSIS
1.1 Preoperative diagnosis
• Appropriate use: If a palpable breast mass has been detected, at least one of the following procedures should be completed within 3 months: fine-needle aspiration, mammography, ultrasound, biopsy and/or a followup visit[IV]
• Appropriate use of preoperative mammographic evaluation[IV]
• Appropriate use of imaging &/or cytology or needle biopsy, if required, to be performed at the initial visit[IV]
• Appropriate use of preoperative diagnosis by fine-needle aspiration cytology, needle histology or biopsy[IV]
• Appropriate use: A biopsy or fine-needle aspiration should be performed within 6 weeks either when the mammography suggests malignancy or the persistent palpable mass is not cystic on ultrasound[IV]
• Appropriate use: If a breast mass has been detected on two separate occasions, then either a biopsy, fine-needle aspiration or ultrasound should be performed within 3 months of the second visit[IV]
• Quality of fine-needle aspiration samples from lesions, which subsequently prove to be breast cancer, should be adequate as deemed by the breast pathologist[IV]
1.2 Surgical procedures
• Appropriate use: A biopsy should be performed within 6 weeks if fine-needle aspiration cannot rule out malignancy[IV]
• Appropriate use of first localization biopsy operation to correctly identify impalpable lesions[IV]
• Quality of breast biopsy: primary operable breast cancer receives a frozen section[IV]
• Quality of technique to determine histological node status for all invasive tumors, either by sampling or clearance[IV]
• Quality of sampling nodes for invasive breast cancer, to include ≥ 4 nodes[IV]
• Quality of hormone receptor assay[IV]
1.3 QOL and patient satisfaction relating to diagnosis
• Change in QOL after diagnosis of breast cancer[Iac]
• Women reporting an overall satisfaction with the quality of breast care[Iac]
1.4 General category
• Appropriate use of referrals to surgeon by general practitioner according to breast referral guidelines[IV]
• >90% of women with breast cancer detected by screening should attend an assessment center within 3 weeks of mammography[IV]
• Patients attending for diagnostic purposes seen on at least 1 occasion by a breast specialist surgeon[IV]
• <10% of all new cases of women with breast cancer should attend the clinic/hospital on > 2 occasions for diagnostic purposes[IV]
• Urgent referrals of women with breast cancer to be seen within 5 working days[IV]
• Women with breast cancer to be seen by specialist in timely fashion post referral for diagnostic purposes[IV]
• Management of cases coming to surgery from the screening program carried out by surgeons who have acquired the necessary specialist knowledge[IV]
• ≥90% of women requiring an operation for diagnostic purposes should be admitted within 14 days of the surgical decision[IV]
• ≥90% of women with breast cancer or with an abnormality requiring diagnostic operation need to be told of this within 5 working days of investigations leading to this diagnosis[IV]
• Appropriate use of an evaluation in compliance with guidelines[IV]
• Appropriate use of initial examination[IV]

2. TREATMENT
2.1 Surgery
• Appropriate use: Women with stage I or stage II breast cancer should be offered a choice of modified radical mastectomy or breast-conserving surgery, unless contraindications to breast-conserving surgery are present[IV]
• Appropriate use of all surgery[IV]
• No breast-conserving surgery or mastectomy in metastatic disease[IV]
• Appropriate use of breast-conserving surgery[IV]
• Appropriate number of therapeutic operations (≤ 2) for women having breast-conserving surgery[IV]
• Appropriate use of mastectomy[IV]
• Appropriate use of axillary lymph node dissection[IV]
2.2 Radiotherapy
• Appropriate use of radiotherapy[IV]
• Appropriate use: Women treated with breast-conserving surgery should begin radiation therapy within 6 weeks of completing either of the following: the last surgical procedure on the breast (including reconstructive surgery that occurs within 6 weeks of primary resection) or chemotherapy, if patient receives adjuvant chemotherapy, unless wound complications prevent the initiation of treatment[IV]
• Appropriate use of radiotherapy after breast-conserving surgery[IV]
• Quality of radiotherapy after breast-conserving surgery (following guidelines)[IV]
• Appropriate use of radiotherapy after mastectomy[IV]
• Quality of radiotherapy via planning on a dedicated simulator[IV]
• Quality of radiotherapy: done 5 days/week[IV]
• Quality of radiotherapy: homogenous dose distribution of radiotherapy[IV]
• Quality of radiotherapy: use of wedges on tangent breast fields[IV]
• Appropriate use of radiotherapy on axilla following axillary lymph node dissection, to deal with increased risk of local recurrence (i.e. extracapsular extension; ≥ 4 positive nodes) [IV]
• Appropriate use of parasternal radiotherapy for tumors located in the medial part of breast[IV]
• Appropriate use of palliative radiotherapy for women with progression or recurrence[IV]
• Regional recurrence needing further surgery or radiotherapy[IV]
• Quality of radiotherapy: both tangent fields treated daily[IV]
• Quality of radiotherapy: receiving 4,500-5,000 cGy total breast dose given in 180-200 cGy fractions[IV]
• Quality of radiotherapy: electron beam breast radiation used[IV]
2.3 Adjuvant systemic therapy
• Appropriate use of any adjuvant systemic therapy[IV]
• Appropriate use: Women with invasive breast cancer that is node-positive, or node-negative and primary tumor ≥ 1 cm, should be treated with adjuvant systemic therapy to include combination chemotherapy (and/or tamoxifen, 20mg/d) [IV]
• Appropriate use of any adjuvant systemic therapy in women with node (+) breast cancer[IV]
• Appropriate use of any adjuvant systemic therapy in women with node (-) breast cancer[IV]
• Appropriate use of adjuvant systemic therapy after breast-conserving surgery[IV]
• Appropriate use of tamoxifen[IV]
• Appropriate use of tamoxifen in premenopausal women with node (-), intermediate risk, breast cancer[IV]
• Appropriate use of tamoxifen in postmenopausal women with node (-), intermediate risk, breast cancer[IV]
• Appropriate use of tamoxifen in postmenopausal women with node (-), high risk, estrogen receptor (+), breast cancer[IV]
• Appropriate use of tamoxifen in postmenopausal women with node (+)[IV]
• Appropriate use of chemotherapy and hormone therapy (tamoxifen) [IV]
• Appropriate use of chemotherapy and hormone therapy (tamoxifen) in premenopausal women, node (+), hormone receptor (+), breast cancer[IV]
• Appropriate use of chemotherapy[IV]
• Appropriate use of chemotherapy in women with node (-), high risk, estrogen receptor (-), breast cancer[IV]
• Appropriate use of chemotherapy in women with node (-), estrogen receptor (+), breast cancer[IV]
• Appropriate use of chemotherapy in premenopausal women with node (-), high risk, estrogen receptor (+), breast cancer[IV]

• Appropriate use of chemotherapy in premenopausal women with node (+), estrogen receptor (-), breast cancer[IV]
• Appropriate use of chemotherapy in postmenopausal women with node (+), estrogen receptor (-), breast cancer[IV]
• Appropriate use of chemotherapy in postmenopausal women with node (+), estrogen receptor (+), breast cancer[IV]
• Appropriate use of chemotherapy in women <50 years of age with node (+), breast cancer[IV]
• Appropriate use of chemotherapy &/or ovarian ablation in premenopausal women with node (+), estrogen receptor (+), breast cancer[IV]
• Appropriate decision not to provide adjuvant systemic therapy for women node (-), low risk, breast cancer[IV]
• Appropriate decision not to provide adjuvant systemic therapy for women > 65 years of age with high risk, estrogen receptor (-), breast cancer[IV]
• Quality of chemotherapy: proper doses administered (≥ 85% dose intensity [DI] & relative dose intensity [RDI]) of CMF[IV]
• Availability of office procedure manual used for chemotherapy administration[IV]
2.4 QOL and patient satisfaction relating to treatment
• Overall changes in QOL over time, before & after radiotherapy[Iac]
• Change in QOL in women with metastatic breast cancer[Iac]
• Women with a significant improvement in QOL in clinical phases of breast cancer[Iac]
• Change in QOL by time and treatment arm in postmenopausal, node (-) breast cancer women who underwent adjuvant therapy[Ia]
• Change in QOL over time[Iac]
• Satisfaction of women with breast cancer with the treatment choice[Iac]
• Participation of women with breast cancer in decision-making as much as they wanted[IV]
• Received enough information about surgery and radiotherapy[IV]
2.5 General category
• Board certified medical doctors in medical oncology[IV]
• Documentation of Continuing Medical Education credits for the 2 years preceding audit[IV]
• Referral to oncologist for treatment[IV]
• Women with breast cancer given the opportunity to see a breast cancer specialist nurse[IV]
• Evidence of discussion about surgical options[IV]
• ≥90% of women admitted for an operation within 21 days of the surgical decision to operate for therapeutic purposes[IV]
• Appropriate use of treatment sequences according to guidelines (including surgery; radiotherapy; chemotherapy; hormone therapy; initial examination; and followup)[IV]
• Appropriate use of definitive locoregional therapy (total mastectomy + axillary lymph node dissection, or, breast-conserving surgery + axillary lymph node dissection + radiotherapy)[IV]
• Appropriate use of alternative definitive therapy (radiotherapy after breast-conserving surgery + axillary lymph node dissection or adjuvant treatment)[IV]
• Cases not receiving recommended treatment (radiotherapy after breast-conserving surgery or systemic therapy) due to system failure[IV]
• Appropriate use: Women with metastatic breast cancer should be offered hormonal therapy, chemotherapy, and/or enrollment in a clinical trial with documentation of informed consent within 6 weeks of the identification of metastases[IV]
3. Followup
• Appropriate use: Women with a history of breast cancer should have a yearly mammography[IV]
• Appropriate use of guidelines for followup surveillance of breast cancer[IV]
• Women with breast cancer developing local recurrence within 5 years after breast-conserving surgery[IV]
• Women with breast cancer developing local recurrence within 5 years after mastectomy[IV]
• Appropriate use of prophylactic radiotherapy in women with high risk of flap recurrence[IV]

4. REPORTING/DOCUMENTATION
4.1 Pathology reporting/documentation
• Reporting gross observation of lesion[IV]
• Reporting verification tumor size (microscopic)[IV]
• Reporting number of positive lymph nodes (microscopic)[IV]
• Reporting nuclear grade (microscopic)[IV]
• Reporting mitotic rate (microscopic)[IV]
• Reporting extent of tubule formation (microscopic)[IV]
• Reporting laterality of surgical specimen (gross examination)[IV]
• Reporting identification of affected quadrant (gross examination)[IV]
• Reporting the orientation of the pathology specimen (gross examination)[IV]
• Reporting size of specimen (gross examination)[IV]
• Reporting tumor size (macroscopic)[IV]
• Reporting tumor size (microscopic)[IV]
• Reporting lymph node presence/absence (gross examination)[IV]
• Reporting number of lymph nodes present (gross examination)[IV]
• Reporting nature of specimen (gross examination)[IV]
• Reporting distance of tumor from nipple (gross examination)[IV]
• Reporting description of cut surface of the tumor (gross examination)[IV]
• Reporting description of skin (gross examination)[IV]
• Reporting size of overlying skin (gross examination)[IV]
• Reporting description of nipple (gross examination)[IV]
• Reporting presence or absence of fascia or skeletal muscle (gross examination) [IV]
• Reporting involvement of apical lymph nodes (microscopic)[IV]
• Reporting size of concurrent ductal carcinoma in situ (microscopic)[IV]
• Reporting description of background breast (microscopic)[IV]
• Reporting ductal carcinoma in situ (DCIS) present/absent (microscopic)[IV]
• Reporting measurement of macroscopic margins of carcinoma[IV]
• Reporting assessment of microscopic margins[IV]
• Reporting carcinoma confirmed microscopically[IV]
• Reporting histological type (microscopic)[IV]
• Reporting histological grade (microscopic)[IV]
• Reporting lymph-vascular invasion (microscopic)[IV]
• Reporting size of invasive carcinoma (microscopic)[IV]
• Reporting estrogen receptor status (microscopic)[IV]
• Reporting progesterone receptor status (microscopic)[IV]
• Reporting specimen inked (microscopic) [IV]
• Reporting Bloom Scarf Richardson scale (tumor grade) (microscopic)[IV]
• Reporting TNM staging (microscopic)[IV]
• Reporting distance to the closest margin (microscopic)[IV]
• Reporting pathological extent of primary tumor (microscopic)[IV]
• Reporting having performed flow cytometry (microscopic)[IV]
• Reporting cytometry ploidy (microscopic)[IV]
• Pathology reports on chart[IV]
4.2 Imaging reporting/documentation
• Size of mammographic abnormality[IV]
4.3 Chemotherapy reporting/documentation
• Presence of chemotherapy flow sheets in active treatment charts[IV]
• Presence of body surface area calculations on chemotherapy flow sheets[IV]
Level Ia = pre-study data indicating consistently sound psychometric properties; Iac = pre- *and* on-study data indicating consistently sound psychometric properties; IV = no pre- *or* on-study psychometric data

Listing of Reference Standards Used to Measure Quality of Breast Cancer Care in Included Studies

Author, Year	Reference standard(s)	Source(s)
Appleton, 1998[109]	• NHSBSP guidelines, 1991-1992	• Royal College of Pathologists Working Group. Pathology reporting in breast cancer screening. Sheffield: NHSBSP Publications, 1989
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