Complete Summary

GUIDELINE TITLE

Preventive health care, 2001 update: Screening mammography among women aged 40-49 years at average risk of breast cancer.

BIBLIOGRAPHIC SOURCE(S)

Ringash J. Preventive health care, 2001 update: screening mammography among women aged 40-49 years at average risk of breast cancer. CMAJ 2001 Feb 20;164(4):469-76. [76 references]

COMPLETE SUMMARY CONTENT

SCOPE
METHODOLOGY - including Rating Scheme and Cost Analysis
RECOMMENDATIONS
EVIDENCE SUPPORTING THE RECOMMENDATIONS
BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS
QUALIFYING STATEMENTS
IMPLEMENTATION OF THE GUIDELINE
INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES
IDENTIFYING INFORMATION AND AVAILABILITY

SCOPE

DISEASE/CONDITION(S)

Breast cancer

GUIDELINE CATEGORY

Screening

CLINICAL SPECIALTY

Family Practice
Internal Medicine
Obstetrics and Gynecology
Oncology
Preventive Medicine

INTENDED USERS

Advanced Practice Nurses
Allied Health Personnel
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

- To consider the available new and updated evidence regarding the effect of screening mammography on breast cancer mortality among women aged 40-49 years at average risk of breast cancer.
- To update the 1994 Task Force recommendations regarding screening mammography in this age group.
- To consider other positive and negative effects of screening mammography among women aged 40-49.

TARGET POPULATION

Canadian women aged 40 to 49 at average risk of breast cancer.

These guidelines are not intended to apply to the following groups of Canadian women:

- Women at increased risk of breast cancer
- Symptomatic women undergoing diagnostic mammography
- Women with a history of breast cancer receiving follow-up mammograms

INTERVENTIONS AND PRACTICES CONSIDERED

Screening mammography starting at either age 40 or 50.

MAJOR OUTCOMES CONSIDERED

Mortality associated with breast cancer.

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

A computerized search of the MEDLINE and CANCERLIT databases for articles published from 1966 to January 2000 was conducted using the following MeSH (medical subject heading) terms: "prevention and control" + "mammography" + "breast neoplasms"; and "mammography" + "breast neoplasms" + any 1 of the following 21 terms: "controlled clinical trials," "randomized controlled trials," "double-blind method," "random allocation," "prospective studies," "cohort

studies," "meta-analysis" or author names Nystrom, Rutqvist, Wall, Lindgren, Lindqvist, Ryden, Andersson, Bjurstam, Fagerberg, Frisell, Shapiro, Tabar, Miller, Baines. Trials meeting all the inclusion criteria noted below were reviewed. No trials were excluded by the chosen criteria.

Inclusion criteria:

- Women aged 40 to 49 at average risk of breast cancer included, either as entire sample or as subgroup
- Screening mammography used, either alone or in combination with clinical breast examination
- Breast cancer mortality assessed as primary outcome
- Randomized controlled trials, or meta-analysis including all eligible randomized controlled trials

Exclusion criteria:

- Minimum follow-up less than 10 years
- Outcome ascertainment less than 90 percent complete

Similarly, the guideline developers searched MEDLINE and CANCERLIT and reviewed reference lists manually to identify studies that measured the physical and psychological effects of mammography. Because no randomized controlled trials assessed these issues as primary outcomes, cohort, case-control and cross-sectional studies were reviewed.

NUMBER OF SOURCE DOCUMENTS

The search yielded 23 articles; review of reference lists provided an additional 45 papers.

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Quality of evidence was rated according to 5 levels:

I - Evidence from at least 1 properly randomized controlled trial.

II-1 - Evidence from well-designed controlled trials without randomization.

II-2 - Evidence from well-designed cohort or case-control analytic studies, preferably from more than 1 centre or research group.

II-3 - Evidence from comparisons between times or places with or without the intervention. Dramatic results in uncontrolled experiments could also be included here.

III - Opinions of respected authorities, based on clinical experience, descriptive studies or reports of expert committees.

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not applicable

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

The principal author rated the quality of the evidence using the methodological hierarchy and circulated a preliminary draft of the manuscript to the task force members. The task force met in May 1998, at which time the final decisions on recommendations were arrived at unanimously by the group and the principal author.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Grades of Recommendation:

A. Good evidence to support the recommendation that the condition or maneuver be specifically considered in a periodic health examination.
B. Fair evidence to support the recommendation that the condition or maneuver be specifically considered in a periodic health examination.
C. Insufficient evidence regarding inclusion or exclusion of the condition or maneuver in a periodic health examination, but recommendations may be made on other grounds.
D. Fair evidence to support the recommendation that the condition or maneuver be specifically excluded from a periodic health examination.
E. Good evidence to support the recommendation that the condition or maneuver be specifically excluded from a periodic health examination.

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Comparison with Guidelines from Other Groups
External Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

The guideline was externally peer reviewed. Feedback from three independent experts was incorporated into a final draft of the manuscript, which was reviewed by the task force chairman before submission for publication. The American Association for Cancer Research and the National Institute of Health recommend against universal screening. In contrast, the American Cancer Society and the National Cancer Institute advise screening every 1 to 2 years.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Recommendation grades [A, B, C, D, E] and levels of evidence [I, II-1, II-2, II-3, III] are indicated after each recommendation. Definitions of these grades and levels are repeated following the recommendations.

- Current evidence regarding the effectiveness of screening mammography does not suggest the inclusion of the maneuver in, or its exclusion from, the periodic health examination of women aged 40 to 49 at average risk of breast cancer (Miller, Howe, & Wall, 1981; Miller et al., 1992; Bjurstam et al., 1997; Andersson & Janzon, 1997; Shapiro, Strax, & Venet, 1966; Shapiro et al., 1982; Shapiro, 1977; Shapiro, 1997; Andersson et al., 1979; Andersson et al., 1988; Tabar & Gad, 1981; Fagerberg et al., 1985; Tabar et al., 1989; Taber et al., 1992; Taber et al., 1997; Duffy et al., 1991; Roberts et al., 1984; Alexander et al., 1994; Alexander et al., 1999; Alexander et al., 1989; Baines, 1984; Mettlin & Smart, 1993; Kopans, Halpern, & Hulka, 1994; Tarone, 1995; Bailar & MacMahon, 1997; Cohen et al., 1996; Baines, 1994; Miller et al., 1997; Baines, To, & Wall, 1990; Frisell et al., 1986; Frisell et al., 1989; Frisell & Lidbrink, 1997) [C, I]. Upon reaching the age of 40 Canadian women should be informed of the potential benefits and risks of screening mammography and assisted in deciding at what age they wish to initiate the maneuver.

Definitions:

Recommendation Grades:

A. Good evidence to support the recommendation that the condition or maneuver be specifically considered in a periodic health examination (PHE).
B. Fair evidence to support the recommendation that the condition or maneuver be specifically considered in a PHE.
C. Poor evidence regarding inclusion or exclusion of the condition or maneuver in a PHE, but recommendations may be made on other grounds.
D. Fair evidence to support the recommendation that the condition or maneuver be specifically excluded from consideration in a PHE.
E. Good evidence to support the recommendation that the condition or maneuver be specifically excluded from consideration in a PHE.

Levels of Evidence:

I - Evidence from at least 1 properly randomized controlled trial (RCT).

II-1 - Evidence from well-designed controlled trials without randomization.

II-2 - Evidence from well-designed cohort or case-control analytic studies, preferably from more than 1 centre or research group.

II-3 - Evidence from comparisons between times or places with or without the intervention. Dramatic results in uncontrolled experiments could also be included here.

III - Opinions of respected authorities, based on clinical experience, descriptive studies or reports of expert committees.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

REFERENCES SUPPORTING THE RECOMMENDATIONS

References open in a new window

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

A total of seven randomized controlled trials and six meta-analyses provided the evidence supporting the recommendations.

Maneuver: Screening mammography every 12-18 months.
Level of Evidence:
Randomized controlled trials (Level I). One randomized controlled trial designed to test screening mammography among women aged 40 to 49 and six randomized controlled trials from post-hoc subgroup analyses.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Potential reduction in mortality rates: Relative risk reduction of 18%-45% for breast cancer mortality at 10 years was shown in two trials and one meta-analysis; no benefit was shown in six other trials. (The only trial that enrolled Canadian women failed to show an effect of screening mammography, possibly because of low power.)
- Other positive effects of screening mammography:
    - Detection of tumour at earlier stage (possibly predictive of less toxic treatment)
    - Improved cosmesis
    - Reassurance (72% of cases)
    - Reduced anxiety about cancer at time of screening

POTENTIAL HARMS

Negative effects of screening mammography.

- Radiation-induced carcinoma
- Unnecessary biopsies (0.6%-0.9% of cases in Sweden, 5%-9% of cases in U.S.)
- Psychological stress of call-back (40% of cases)
- Additional x-ray films (3%-13% of cases in Sweden, 56% of cases in US)
- Possible false reassurance or false positive result

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

- Although several of the trials reviewed constitute level I evidence (randomized controlled trial), at present their conflicting results, methodologic differences and, most important, uncertainty about the risk:benefit ratio of screening precludes the assignment of a "good" or "fair" rating to recommendations drawn from them.
- Comparison of randomized controlled trial results suggests that, if mammography is done, frequent screening may be required. The value of adding clinical breast examination to mammography is unclear.
- The full implications of population screening for Canadian women have not yet been quantified, and some of the effects may vary from one woman to another. Sensitivity to the preferences of individual women is appropriate in applying any guideline on this issue.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

Implementation of preventive activities in clinical practice continues to be a challenge. To address this issue, Health Canada established a National Coalition of Health Professional Organizations in 1989. The purpose was to develop a strategy to enhance the preventive practices of health professionals. Two national workshops were held. The first focused on strengthening the provision of preventive services by Canadian physicians. The second addressed the need for collaboration among all health professionals. This process led to the development of a framework or "blueprint for action" for strengthening the delivery of preventive services in Canada (Supply and Services Canada: an Inventory of Quality Initiatives in Canada: Towards Quality and Effectiveness. Health and Welfare Canada, Ottawa, 1993). It is a milestone for professional associations and one that will have a major impact on the development of preventive policies in this country.

In 1991 the Canadian Medical Association spearheaded the creation of a National Partnership for Quality in Health to coordinate the development and implementation of practice guidelines in Canada. This partnership includes the following: the Association of Canadian Medical Colleges, the College of Family Physicians of Canada, the Federation of Medical Licensing Authorities of Canada,

the Royal College of Physicians and Surgeons of Canada, the Canadian Council on Health Facilities Accreditation, and the Canadian Medical Association.

The existence of guidelines is no guarantee they will be used. The dissemination and diffusion of guidelines is a critical task and requires innovative approaches and concerted effort on the part of professional associations and health care professionals. Continuing education is one avenue for the dissemination of guidelines. Local physician leaders, educational outreach programs, and computerized reminder systems may complement more traditional methods such as lectures and written materials.

Public education programs should also support the process of guideline dissemination. In this context, rapidly expanding information technology, such as interactive video or computerized information systems with telephone voice output, presents opportunities for innovative patient education. The media may also be allies in the communication of some relevant aspects of guidelines to the public. All of these technologies should be evaluated.

The implementation of multiple strategies for promoting the use of practice guidelines requires marshaling the efforts of governments, administrators, and health professionals at national, provincial and local levels. It is up to physicians and other health professionals to adopt approaches for the implementation of guidelines in clinical practice and to support research efforts in this direction.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Ringash J. Preventive health care, 2001 update: screening mammography among women aged 40-49 years at average risk of breast cancer. CMAJ 2001 Feb 20;164(4):469-76. [76 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2001

GUIDELINE DEVELOPER(S)

Canadian Task Force on Preventive Health Care - National Government Agency [Non-U.S.]

SOURCE(S) OF FUNDING

The Canadian Task Force on Preventive Health Care is funded through a partnership between the Provincial and Territorial Ministries of Health and Health Canada.

GUIDELINE COMMITTEE

Canadian Task Force on Preventive Health Care (CTFPHC)

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Authors: Jolie Ringash

Members of the Canadian Task Force on Preventive Health Care

Chairman: Dr. John W. Feightner, Professor, Department of Family Medicine, University of Western Ontario, London, Ont.

Past Chairman: Dr. Richard Goldbloom, Professor, Department of Pediatrics, Dalhousie University, Halifax, NS.

Members: Drs. R. Wayne Elford, Professor and Chair of Research, Department of Family Medicine, University of Calgary, Calgary, Alta.; Michel Labrecque, Associate Professor and Director of Research, Department of Family Medicine and Centre Hospitalier Universitaire de Québec, Laval University, Quebec, Que.; Harriet MacMillan, Associate Professor, Departments of Psychiatry and Pediatrics and Centre for Studies of Children at Risk, McMaster University, Hamilton, Ont.; Robin McLeod, Professor, Department of Surgery, Mount Sinai Hospital and University of Toronto, Toronto, Ont.; Jean-Marie Moutquin, Professor, Department of Obstetrics and Gynecology and Saint-François d'Assise Research Centre, Laval University, Quebec, Que.; Christopher Patterson, Professor and Head, Division of Geriatric Medicine, Department of Medicine, McMaster University, Hamilton, Ont.; Elaine E.L. Wang, Associate Professor, Departments of Pediatrics and Public Health Sciences, Faculty of Medicine, University of Toronto, Toronto, Ont.

Resource people: Nadine Wathen, Coordinator, and Tim Pauley, Research Assistant, Canadian Task Force on Preventive Health Care, Department of Family Medicine, University of Western Ontario, London, Ont.

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline. It updates a previous review by the Canadian Task Force on the Periodic Health Examination (now the Canadian Task Force on Preventive Health Care) published in 1994 (Morrison BJ. Screening for breast cancer. In: Canadian guide to clinical preventive health care. Ottawa: Canada Communications Group; 1994. p. 788-95.)

A complete list of planned reviews, updates and revisions is available under the What's New section at the CTFPHC Web site.

GUIDELINE AVAILABILITY

Electronic copies: Available from the Canadian Task Force on Preventive Health Care Web site.

Also available from the from the Canadian Medical Association Journal (CMAJ) Web site in HTML and Portable Document Format (PDF).

Print copies: Available from Canadian Task Force on Preventive Health Care, 100 Collip Circle, Suite 117, London, Ontario N6G 4X8, Canada.

AVAILABILITY OF COMPANION DOCUMENTS

The following are available:

- Stachenko S. Preventive guidelines: their role in clinical prevention and health promotion. Ottawa: Health Canada, 1994. Available from the Canadian Task Force on Preventive Health Care (CTFPHC) Web site.
- CTFPHC history/methodology. Ottawa: Health Canada, 1997. Available from the CTFPHC Web site.
- Quick tables of current recommendations. Ottawa: Health Canada, 2000. Available from the CTFPHC Web site.

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on April 11, 2001. The information was verified by the guideline developer on June 15, 2001.

COPYRIGHT STATEMENT

This NGC summary is based on the original guideline, which is subject to the guideline developer's copyright restrictions. Summaries of the Canadian Task Force on Preventive Health Care (CTFPHC) guidelines may be downloaded from the NGC Web site and/or transferred to an electronic storage and retrieval system solely for the personal use of the individual downloading and transferring the material. Permission for all other uses must be obtained from CTFPHC by contacting the CTFPHC Coordinator, telephone: (519) 685-4292, ext. 42327 or by e-mail at nwathen@ctfphc.org.

© 1998-2004 National Guideline Clearinghouse

Date Modified: 11/1/2004