Guideline for

The Early Detection of Breast Cancer

This guideline was written to provide guidance about the appropriate use of screening tools for breast cancer and to help physicians and patients make informed decisions about screening for breast cancer in asymptomatic women of all ages. Due to the addition of important research related to breast screening, this guideline will continue to be reviewed on an annual basis.

RECOMMENDATIONS

Screening Procedures

Mammography, clinical breast examination and breast self-examination can be used as screening procedures. Breast ultrasound and MRI are not currently recommended for routine screening.

Exclusions

The recommendations in this guideline do not apply to:
- Women with signs and symptoms suggesting breast cancer;
- Women with a personal history of breast cancer;
- Men.

Mammography Screening in Women Under 40 Years

Routine mammographic screening for women under 40 is not recommended.

Mammography Screening in Women aged 40 to 49

Women aged 40 to 49 should have the opportunity to access screening mammography. Physicians should discuss with patients, the benefits and risks of screening.

There remains controversy regarding the degree of benefit of screening mammography in this age group. (See Background)

If a woman chooses to participate in mammography screening, the recommended interval between screens in this age group is one year.

Mammography Screening in Women aged 50 to 69

- Women aged 50 to 69 years should have a screening mammogram at least every two years.
- Annual mammography screening should be considered in circumstances of increased risk.

Mammography Screening in Women Over 70 Years

- The risk of breast cancer in this group is high.
- Mammography screening every two years should be continued taking into account individual health factors and estimated life expectancy.

Mammography Screening in Women with a Genetic Predisposition to Breast Cancer

- Some experts suggest that mammography screening among this population should commence five to ten years prior to the age of onset of breast cancer in their family member. Consideration may be given to referral to the Cancer Genetics Research Clinics. (See Background & Appendix 1).

Clinical Breast Examination and Breast Self Exam

- CBE and BSE should be seen as complementary examinations to mammography. (For CBE See Appendix 2)

- Primary care physicians should discuss breast self examination with all women by age 30.

Breast Implants

- Women with breast implants should be referred for diagnostic mammography at age appropriate intervals.

The above recommendations are systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances. They should be used as an adjunct to sound clinical decision making.
BACKGROUND

Epidemiology

Breast cancer is one of the most serious health concerns of Canadian women and is the most common form of cancer in women excluding non-melanoma skin cancer. Breast cancer accounts for 30% of all new cancer cases. In 2001, 1,644 Alberta women were diagnosed with invasive breast cancer and 425 women died of the disease. Breast cancer accounts for nearly 21% of all cancer deaths in Alberta women.

Risk Factors

The lifetime risk for breast cancer is one in nine. The risk however, varies over a woman’s lifetime. Table 1 reflects the age specific risk of breast cancer for women.

Table One
Probability of Developing Breast Cancer in the Next Five Years, by Age, for Women Who Reside in Alberta and Currently Do Not Have Breast Cancer

<table>
<thead>
<tr>
<th>Age</th>
<th>Probability</th>
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<tbody>
<tr>
<td>35</td>
<td>1/384</td>
</tr>
<tr>
<td>40</td>
<td>1/208</td>
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<tr>
<td>45</td>
<td>1/128</td>
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<td>50</td>
<td>1/109</td>
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<td>55</td>
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<td>60</td>
<td>1/78</td>
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<td>65</td>
<td>1/70</td>
</tr>
<tr>
<td>70</td>
<td>1/65</td>
</tr>
</tbody>
</table>

Increasing age, being born in North America and northwest Europe, and having two or more first degree relatives with a history of breast cancer are identified as the strongest risk factors.

There are many other identifiable risk factors, but few are amenable to change. It is estimated that up to 80% of women who develop breast cancer have no risk factors other than being female, and in a higher risk age group.

Evidence from the WHI studies indicate that in any single year, 0.08 percent more women in the HRT group developed breast cancer than women in the placebo group, suggesting that the effect of HRT on the risk of breast cancer is small.

Definition of Screening for Breast Cancer used in this CPG

Breast cancer screening refers to the application of a procedure to asymptomatic women for the purpose of detecting unsuspected breast cancer at a stage when early intervention can affect the outcome.

Mammography Screening

A normal screening mammography does not rule out breast cancer in the presence of persistent palpable abnormalities. Further evaluation may still be required.

Screening in Women Under 40 Years

Randomized controlled studies have not included women in this age group. Routine screening is not recommended.

Screening in Women Aged 40 to 49 Years

In women aged 40 to 49, breast cancer is the single leading cause of death. Some of the reservations about making population-based recommendations for women in this age group, are based on limitations in the scientific evidence available to date. While there is emerging evidence of benefit from some combined analyses of the randomized trials, the benefit is smaller than in older women, and is of borderline statistical significance.

There has been a lot of debate in the literature regarding the reasons for the apparent decreased benefit of screening. Evidence to date suggests that screening mammography is less sensitive for women in their forties than for older women. It has also been suggested that due to more rapid growth of tumours in this age group that the interval between screens in some studies has been too long to show a benefit. Data suggests that annual mammography in this age group will be required in order to detect breast cancer at its earliest stages and achieve a reduction in breast cancer mortality similar to that seen in older women. Finally, there may be statistically insufficient numbers of women in this age group included in the controlled trials to definitively show a benefit.

Concerns have also been raised about the decreased positive predictive value of any of the three breast screening procedures in women in their forties when compared to older women. In other words, the probability that a younger woman would have a benign biopsy as a consequence of screening is higher than for older women.
Women Aged 50 to 69 Years

Many studies have shown the efficacy of mammography screening for breast cancer for women aged 50 to 69 years. Regular mammographic screening in this age group is estimated to reduce mortality from breast carcinoma by approximately one third. Because additional benefit with annual screening has not been demonstrated, screening every two years is often recommended.9

Women Over 70 Years

The incidence of breast cancer increases with age, and therefore women over 70 years continue to be at high risk. Although no randomized clinical trials have specifically addressed the efficacy of screening in this age group, it should be continued in the context of individual health factors and life expectancy.

Women a Genetic Predisposition for Breast Cancer

Women with a strong family history of breast cancer should be advised of the availability of counselling and information provided by the Cancer Genetics Research Clinics. (See Appendix 1 for referral criteria)

The recommended screening interval for women in this group is yearly beginning at age 40 or 5 - 10 years prior to the age of onset of breast cancer in a first degree family member. Additional screening tools for this group of women are currently being studied including MRI, ultrasound, and Sestamibi Nuclear Medicine Scans.

Radiation Risk

The risk of mammographically-induced cancer is generally considered to be negligible. Some experts have expressed concern over the theoretical risk of radiation-induced breast cancers, especially among younger women. However, the studies which have raised this concern involved much higher levels of radiation than are found in present day mammography.17,18 The radiation dose delivered by mammography is lower than that of an ordinary chest X-ray.

Factors Affecting the Acceptance of Screening Recommendations

The strongest stimulus for a woman to participate in mammography screening is the recommendation from her physician. Studies indicate that many factors affect a woman’s choice to participate in breast cancer screening. Adverse factors include age, i.e., younger (40-49) and older (70 plus) women; socioeconomically disadvantaged; limited contact with a physician; single marital status; unemployed and retired; country of birth and fewer years since immigration, i.e., Asia, South and Central America, Caribbean and Africa; lower educational attainment; and, rural residence.19,20,21 Physicians should ensure that all women who would benefit from screening be informed of its potential advantages.

SELECTED REFERENCES

2. Statistics Canada. HEALTH REPORTS. Catalogue 82.003XPB.1997;9(1).
19. Dodd GD. Screening for Breast Cancer. CANCER SUPPLEMENT. August 1, 1993; 72(3):1038-1042

Toward Optimized Practice (TOP) Program

Arising out of the 2003 Master Agreement, TOP succeeds the former Alberta Clinical Practice Guidelines program, and maintains and distributes Alberta CPGs. TOP is a health quality improvement initiative that fits within the broader health system focus on quality and complements other strategies such as Primary Care Initiative and the Physician Office System Program.

The TOP program supports physician practices, and the teams they work with, by fostering the use of evidence-based best practices and quality initiatives in medical care in Alberta. The program offers a variety of tools and out-reach services to help physicians and their colleagues meet the challenge of keeping practices current in an environment of continually emerging evidence.

TO PROVIDE FEEDBACK

The Early Detection of Breast Cancer Working Group is a multi-disciplinary team composed of a family physician, general practitioners, radiologists, general surgeons, a gynecologist, oncologist, pathologist, epidemiologist, Medical Officer of Health, nurse, medical student, public representatives, the Canadian Cancer Society, and Breast Cancer Policy Council representatives.

The Working Group encourages your feedback. If you need further information or if you have difficulty applying this guideline, please contact:

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Early Detection of Breast Cancer - April 1999
Reviewed - August 2000
Reviewed - March 2002
Reviewed - November 2004
Note: Referrals MUST be made by a physician and are preferred by mail. Appointments will be made with patient(s) after initial work up completed.

Referral Criteria

The following are offered as considerations for selecting women who may benefit from genetic counselling. The criteria do not necessarily define women at increased risk of developing breast carcinoma who merit earlier or more frequent mammographic screening.

• Personal or close family history of breast cancer < 35 years; ovarian cancer < 50 years; bilateral breast cancer - first onset < 50 years; or breast and ovarian cancer
• Two related family members with breast cancer and/or ovarian cancer with onset in both < 50 years
• Three or more related family members with breast and/or ovarian cancer, one onset < 50 years
• Four or more related family members with breast and/or ovarian cancer, any age
• Ashkenazi descent, breast and/or ovarian cancer, any age
• Any case of male breast cancer
• Known mutation in a cancer susceptibility gene such as the BRCA1 or BRCA2 gene is present in a family member
• Families which may not meet the above criteria, but have a strong family history suggestive of the presence of a mutated cancer susceptibility gene
Clinical breast examination (CBE) may detect some breast cancers which are not evident on mammography. However, the effectiveness of CBE depends upon systematic examination of all quadrants of both breasts and all regional lymph nodes. One systematic approach is illustrated below.

<table>
<thead>
<tr>
<th>Region Examined</th>
<th>Examination Skills and Focus</th>
<th>Procedures and Techniques</th>
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| BREASTS         | Inspection BREAST, AREOLA, NIPPLE | Client in SITTING position disrobed to waist. Inspect breast, areola and nipple bilaterally from anterior and lateral view:  
1. With arms at side  
2. With arms raised over head  
3. With hands pressed against hips  
or  
With hands squeezed together at shoulder level  
4. DO ONLY IF breasts are pendulous or very large: inspect with client leaning forward. |
| AXILLAE         | Inspection AXILLAE            | Inspects skin of axillae with arms raised over head |
| AXILLARY LYMPH NODES | Palpation CENTRAL, PECTORAL, SUBSCAPULAR, LATERAL LYMPH NODES | Supports client’s “L” hand and wrist with “L” hand to examine “L” axilla and reverses for “R” axilla. Cup fingers together. Reaches as high as possible into axilla  
1. Brings fingers down over ribs and feels for CENTRAL nodes  
2. Feels inside anterior axillary folds (PECTORAL)  
3. Feels inside posterior axillary folds (SUBSCAPULAR)  
4. Feels against humerus (LATERAL) |
| INFRACLAVICULAR LYMPH NODES | Palpation INFRACLAVICULAR | Palpates bilaterally for INFRACLAVICULAR nodes in 1st interspace with finger pads |
| SUPRAACLAVICULAR LYMPH NODES | Palpation SUPRAACLAVICULAR | Palpates bilaterally for SUPRAACLAVICULAR nodes above clavicle with finger pads |
| BREASTS         | Inspection BREAST, AREOLA, NIPPLE (same as above) | Client SUPINE, with pillow removed from under head. Uses small pillow under client’s shoulder on side examined to shift breasts medially (NO PILLOW IF BREASTS ARE SMALL)  
1. Inspects breasts.  
Palpation BREAST, AREOLA, NIPPLE and TAIL OF SPENCE | Palpates each breast:  
1. Asks client to move arm away from chest on side being examined  
2. Uses flat of 4 fingers, in a rotary motion to compress breast tissue  
3. Flexes, from the wrist, not the fingers  
4. Applies moderate pressure, keeping constant contact with skin  
5. Moves back and forth across breast in straight lines, making constant small circles  
6. Slides hand down 1 finger width for each pass  
7. Covers full area from below clavicle to 3 cm below breast from anterior axillary line to midsternal line:  
   a) glandular tissue  
   b) areolar area  
   c) nipple  
   d) Tail of Spence |