

Canadian Task Force on Preventive Health Care:

Breast Cancer Screening Recommendations 2011



Putting Prevention
into Practice

Canadian Task Force on Preventive Health Care
Groupe d'étude canadien sur les soins de santé préventifs

Overview



- CTFPHC Background
- Breast Cancer: Overview
- Scientific Methods
- Breast Cancer Screening Recommendations
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CTFPHC BACKGROUND



Who is the CTFPHC?



- The Canadian Task Force on Preventive Health Care (CTFPHC)
 - Comprised of 14 primary care experts
 - Established to develop clinical practice guidelines that support primary care providers in delivering preventive health care
 - Identify evidence gaps that need to be filled and develop guidance documents for each topic

BREAST CANCER: OVERVIEW



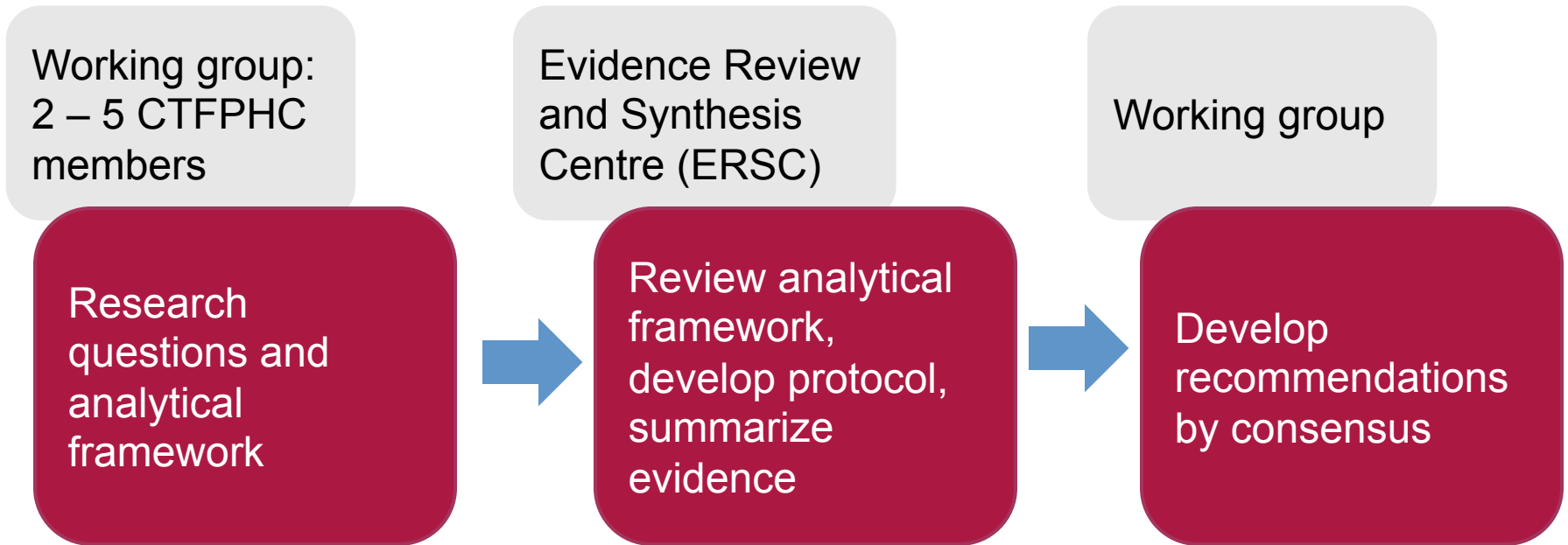
Breast Cancer Overview

- Regular screening for breast cancer with **clinical breast exam, breast self exam, and mammography** is widely recommended to reduce breast cancer mortality
- There has been interest in **magnetic resonance imaging** for screening, although this is not widely used
- although screening has the potential to help women by early detection of treatable cancer, it also has potential harms:
 - anxiety
 - unnecessary tests and treatments
 - overdiagnosis

SCIENTIFIC METHODS



Methods of the CTFPHC



Eligible Studies for Clinical Practice Guidelines

Women aged 40 and older, without pre-existing breast cancer and not considered to be at high risk for breast cancer

Study Designs

- *Effectiveness of screening*: RCTs or meta-analyses
- *Cost-effectiveness of screening*: Included if relevant to KQ
- *Harms of screening*: Various designs and multiple data sources
- *Patient preferences and values*: Any study design

GRADE: How is evidence graded?

Quality of Evidence	Explanation
High	There is high confidence that the true effect lies close to the estimate of the effect
Moderate	The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different
Low	The true effect may be substantially different from the estimate of the effect
Very Low	Any estimate of effect is very uncertain

GRADE: How is the strength of recommendations graded?

- Recommendations graded as **strong** or **weak**
 - Strength of recommendations is based on 4 factors:
 - Balance between desirable and undesirable effects
 - Certainty of effects
 - Values and preferences
 - Feasibility and resource implications
- Equally important**

GRADE: Interpretation of Recommendations

Implications	Strong Recommendation	Weak Recommendation
For Primary Care Providers	Most individuals should receive the intervention.	Recognize that different choices will be appropriate for individual patients; clinicians must help patients make management decisions consistent with values and preferences.
For Patients	Most individuals would want the recommended course of action; only a small proportion would not.	The majority of individuals in this situation would want the suggested course of action but many would not.

BREAST CANCER SCREENING RECOMMENDATIONS: CBE, BSE and MRI



CTFPHC Recommendation: *Clinical Breast Exam (CBE)*

We recommend not routinely performing CBE alone or in conjunction with mammography to screen for breast cancer.

(Weak recommendation; low quality evidence)

Effectiveness & Harm: *Clinical Breast Exam (CBE)*

- **Effectiveness** of CBE has not been established
- **Harm** of CBE:
 - For each additional cancer detected with CBE per 10,000 women, there would be an **additional 55 false-positives**
(Chiarelli et al, 2009)

CTFPHC Recommendation: *Breast Self Exam (BSE)*

We recommend not advising women to routinely practice BSE

(Weak recommendation; moderate quality evidence)

Effectiveness: *Breast Self Exam (BSE)*

Outcomes	Illustrative Comparative Risks* (95% CI)		Relative Effect (95% CI)	No of Participants (Studies)	Quality of the Evidence (GRADE)
	Assumed Risk per million	Corresponding Risk per million (range)			
	Control	BSE			
Breast Cancer Mortality					
Follow-up: mean 5 years	1,540	1,509 (1,278 to 1,771)	RR 0.98 (0.83 to 1.15)	387,359 (2 studies)	Moderate ^{1,2,3}

*The basis for the assumed risk (e.g. the median control group risk across studies) is provided in footnotes. The corresponding risk (and its 95% confidence interval) is based on the assumed risk in the comparison group and the relative effect of the intervention (and its 95% CI).

¹ blinding and concealment were not clear

² no heterogeneity exists. P-value for testing heterogeneity is 0.561 and $I^2=0\%$.

³ the question addressed is the same for the evidence regarding the population, comparator and outcome.

Harm: *Breast Self Exam (BSE)*

- Two moderate quality RCTs show that BSE increases the incidence of having a breast biopsy that shows no evidence of cancer.

Russia trial:

RR 2.05

95% CI 1.80 – 2.33

Shanghai trial:

RR 1.57

95% CI 1.48 – 1.68

CTFPHC Recommendation: *Magnetic Resonance Imaging (MRI)*

We recommend not routinely screening with MRI
(Weak recommendation; no evidence)

BREAST CANCER SCREENING RECOMMENDATIONS: MAMMOGRAPHY



Recommendation Criteria

- Apply only to **women aged 40 – 74**
- **Do not apply** to women at higher risk of breast cancer
 - Personal history, or history in first degree relative
 - Known BRCA1/BRCA2 mutation
 - Prior chest wall radiation
- **No** recommendations for women aged 75 and older due to lack of data

CTFPHC Recommendation: *Mammography (40-49 years)*

For women aged 40 – 49 years we recommend not
routinely screening with mammography

(Weak recommendation; moderate quality evidence)

Findings and Implications: 40-49 years

- Significant reduction in RR
- Absolute benefit lower than for older women
- **CTFPHC judgment: Most** women should not receive screening but **many** could receive it
 - Less favourable balance of benefit vs. harm, compared to older women
 - Risk of FP higher, compared to older women
 - Clinicians must consider patient preferences and values

CTFPHC Recommendation: *Mammography (50-69 years)*

For women aged 50 – 69 years we recommend regularly screening with mammography every 2 to 3 years

(Weak recommendation; moderate quality evidence)

Findings and Implications: 50-69 years

- Mammography: significant reduction in relative risk
- Absolute benefit of screening remains small
- **CTFPHC judgment: Most** women of this age should receive screening but **many** should not
 - Mammography is associated with both harms and benefits
 - Clinicians should consider patient preferences and values

CTFPHC Recommendation: *Mammography (70-74 years)*

For women aged 70 – 74 years we recommend routinely screening with mammography every 2 to 3 years

(Weak recommendation; low quality evidence)

Findings and Implications: 70-74 years

- Point estimate for RR similar to younger women; borderline significant
- Absolute benefit similar or more favourable than for 50-69 years
- **CTFPHC judgment:** **Most** women of this age should receive screening but **many** should not
 - Mammography is associated with both harms and benefits
 - Clinicians should consider patient preferences and values

Estimates of Adverse Outcomes

To save one life from breast cancer over 11 years...

	Screening every 2 – 3 years	Unnecessary breast biopsy	False positive mammogram
Women aged 40 – 49 years	2100 women	75 women	690 women
Women aged 50 – 69 years	720 women	26 women	204 women
Women aged 70 – 74 years	450 women	11 women	96 women

Frequency of Screening

CTFPHC suggests a screening interval of 2 – 3 years for women aged 50 – 74 years

- Data from sole RT comparing screening intervals suggested no significant difference between 1 and 3 years.
- Pooled analysis suggest mortality with >24 month screening is similar to ≤ 24 month screening.
- Screening interval of 2–3 years preserves benefit of annual screening, reduces AE' s, inconvenience and cost.

Frequency of Screening:

RCT shows no difference between q1y and q3y screening

- Women aged 50 – 62 years
 - Study arm (n=37,530): 3 additional annual screens
 - Control arm (n=38,492): standard screen 3 years later
- Predicted RR of breast cancer mortality for annual vs. 3-year screening:
 - 0.95 (95% CI, 0.83-1.07) by NPI
 - 0.89 (95% CI, 0.77-1.03) by 2CS
- Actual RR of breast cancer mortality in follow-up:
 - 0.93 (0.63, 1.37)

UKCCCR Group, Eur J Cancer 2002; Duffy et al (Abstract) 2008

Patient Preferences and Values

- **Most** women value reduction in risk of breast cancer mortality
- Consider: Psychological distress following false positive
- **Most** women willing to take risk of false positive/ unnecessary procedures in exchange for reduced risk of death BUT **many are not**
- The extent to which women participating in preference studies were informed of true risks and benefits is unclear

Comparison of Guidelines

Organization	Mammography			Breast Self Exam	Clinical Breast Exam
	40 – 49 years	50 – 74 years	75 + years		
CTFPHC (2011)	Recommend against routine screening. Individual decision.	Every 2-3 years	No recommendation	Recommend against	Recommend against
Previous CTFPHC (1994; 1998; 2001)	No recommendation (2001)	Every 1-2 years (age 50 – 69) (1998)	No recommendation (1994)	Recommend against (age 40 – 69) (2001)	Every 1 – 2 years (age 50 – 69) (1998)
USPSTF (2009) USA	Recommend against routine screening. Individual decision.	Mammography every 2 years	Insufficient evidence	Recommend against	Insufficient evidence
BreastScreen Australia	No active recruitment	Every 2 years (age 50 – 69)	No active recruitment	N/A	N/A
NHS screening program, United Kingdom	No active recruitment*	Recruited every 3 years until age 70	Women over 70 not routinely recruited*	Not recommended	Not recommended

* The National Health Service (NHS) is phasing in an extension to their breast cancer screening program that will extend screening Mammography every three years to women aged 47-73 years

Summary: *Mammography*

For women aged 40 – 49 years we recommend not routinely screening with mammography

(Weak recommendation; moderate quality evidence)

For women aged 50 – 69 years we recommend routinely screening with mammography every 2 to 3 years

(Weak recommendation; moderate quality evidence)

For women aged 70 – 74 years we recommend routinely screening with mammography every 2 to 3 years

(Weak recommendation; low quality evidence)

QUESTIONS & ANSWERS

