



Effective Public Health Practice Project Summary Statement

December 2005

This is a summary statement written to condense the work of the authors of a systematic review. The reference for the full review is below. The intent of this summary is to provide an overview of the findings and implications of the full review. For more information on individual studies included in the review, please see the review itself.

Reference for Review in APA: Legler, J., Meissner, H.I., Coyne, C., Breen, N., Chollette, V. & Rimer, B.K. (2002). **The Effectiveness of Interventions To Promote Mammography among Women with Historically Lower Rates of Screening.** *Cancer Epidemiology, Biomarkers & Prevention*, 11, 59-71.

Issue: Breast cancer is the most common cancer among Canadian women and is second only to lung cancer as the leading cause of cancer related deaths in Canadian women (Public Health Agency of Canada, 2004). In 2005 an estimated 21,600 women will be diagnosed with breast cancer and 5,300 will die of it. In Ontario, for 2005, an estimated 8,200 women will be diagnosed with breast cancer and 2,000 will die of it (Canadian Cancer Society, 2005).

There is no established way to prevent breast cancer; thus, early detection through mammography is the best means of saving lives (Cancer 2020 Steering Committee, 2003). In trials of regular screening mammography among women aged 50 to 69 years, the chance of dying of breast cancer was reduced, on average, by 30%. In Canada, breast screening by mammography may be accessed either through an organized provincial/territorial program or through the fee-for-service sector (Public Health Agency of Canada, 2004). In Ontario, it is estimated that 62% of women aged 50-69 have been screened, while only 20% have been screened through an organized program, the Ontario Breast Screening Program (OBSP) (Cancer 2020 Steering Committee, 2003). The Ministry of Health and Long-Term Care's goal is to increase to 70% the proportion of women age 50-69 who receive screening mammography through the OBSP by the year 2010 (Ministry of Health and Long Term Care, 1997), while the Cancer 2020 target of Cancer Care Ontario is 90% (Cancer 2020 Steering Committee, 2003).

Women who are less likely to report mammography (through the Canadian Community Health Survey) include those with lower educational levels, of single marital status, who are unemployed and with a place of birth outside North America, Europe or Australia. As well, there is geographic variation among provinces (Public Health Agency of Canada, 2004). Aboriginal communities report that breast, prostate and colorectal screening is not easily available (Aboriginal Cancer Care Unit, 2002).

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Review Content Summary: A systematic review, using meta-analysis techniques, was conducted to examine the effectiveness of interventions to increase screening mammography in diverse populations with traditionally lower than average rates of screening. These groups consist of women who are disproportionately older or poorer, from racial-ethnic minorities, who have lower levels of formal education and who live in rural areas.

The meta-analysis was based on 38 controlled, experimental or quasi-experimental studies that specifically focused on or reported separate mammography outcomes for the diverse populations mentioned above. The outcome of interest was receipt of mammogram (usually based on self-report) within a specified number of months, where the number of months varied from study to study. Types of interventions evaluated included: (a) individual directed (e.g. one-on-one counselling, tailored and untailored letters and reminders and telephone counselling), (b) system directed (e.g. provider prompts), (c) access enhancing (e.g. transportation to appointments, facilitated scheduling, mobile vans, vouchers and reduced cost mammograms), (d) social network (e.g. peer leaders and lay health advisors), (e) community education, (f) mass media and (g) multistrategy (combination of intervention types). The strongest interventions addressed structural, economic and geographic barriers to mammography use (access-enhancing interventions) as well as intrapersonal and interpersonal factors. Multiple strategies were generally more effective than single strategies for increasing mammography use. Overall effect sizes (expressed as the difference in mammography rates between intervention and control groups) ranged from 18% for older women to 12% in non-Caucasian women.

Comments on this review's methodology: The reviewers updated an existing database of studies on mammography screening to include controlled trials published in English from 1984 to August 2000. Efforts were also made to locate unpublished literature. Eligibility criteria and data abstraction were well described. Twenty five of 32 trials included in the review used random allocation. Intervention effects were measured by differences in intervention and control group screening rates post-intervention unless a pre-post design was used. Then, the difference in change from pre to post-intervention between groups was used. There was significant heterogeneity among results from the entire set of 38 studies and an overall effect size was not reported. Subgroup analyses were performed for the studies of older (≥ 60 years of age), low-income (definitions varied across studies) and nonwhite (African-American, Hispanics, Asians and Native-Americans in descending order of frequency) women and for different types of intervention, but there was also significant heterogeneity within these subgroups. Meta-regression was used to explore sources of heterogeneity. Although statistical techniques were described in considerable detail, the results were not presented clearly.

Evidence points *ARE NOT* weighted or ranked according to strength

What's the evidence?	Implications for practice and policy:
<p>> There is evidence from a meta-analysis that access-enhancing interventions (14 studies) and individual-directed interventions (15 studies) in health-care settings can increase screening mammography use among diverse groups of women by approximately 18%.</p>	<p>> Further research is needed to differentiate between the effects of the different access-enhancing interventions on specific target groups.</p>

<p>> The greatest effect (27%) was observed from 9 studies of the combination of access-enhancing and individual-directed interventions, followed by the combination of access-enhancing and system-directed interventions (20% increase over 5 studies), but no evidence was available from direct comparisons of different interventions.</p>	<p>> Further research is needed to look at specific combinations of interventions for specific target subpopulations.</p>
<p>> Meta-analysis of data from 11 studies detected a statistically significant increase in mammography rate of 18% compared to control among older women.</p>	<p>> Targeted interventions appear to have the most effect with older women and, so may want to focus known interventions toward this group.</p>
<p>> Meta-analysis of data from 26 studies where >40% of participants had low income detected a statistically significant increase in mammography rate of 13% compared to control.</p>	<p>> Further study is needed for low income women, focusing on the most promising interventions.</p>
<p>> Meta-analysis of data from 24 studies where >40% of participants were non-Caucasian detected a statistically significant increase in mammography rate of 12% compared to control. There were no data reported on specific ethnic groups other than African-American women, nor was there an analysis of rural populations.</p>	<p>> Further research is needed regarding interventions for aboriginal, Francophone and rural populations</p>
<p>General Implications: A combination of access-enhancing and individual directed interventions appeared to work best with the diverse groups covered in this review. Most of the findings are based on the U.S. female population, where diverse subpopulations such as non-Caucasian would likely not match that of non-Caucasians in Canada. Research with more relevant subpopulations is needed. As well, differences in the health care systems between the U.S. and Canada may contribute to some of the access-enhancing interventions being more effective in the population of U.S. women.</p>	

Cost Benefit or Cost-Effectiveness Information: Not included in review.

References Used to Outline Issue:

Public Health Agency of Canada. Progress Report on Cancer Control in Canada. Available: http://www.phac-aspc.gc.ca/publicat/prccc-relccc/chap_4_e.html

Canadian Cancer Society/National Cancer Institute of Canada. (2005). Canadian Cancer Statistics 2005. Toronto, Canada, 2005. Available: http://www.cancer.ca/ccs/internet/mediareleaselist/0,3208,3172_210504884_39119674_1_angld-en,00.html

Cancer 2020 Steering Committee. (2003). Targeting Cancer: An Action Plan for Cancer Prevention and Detection. Cancer 2020 Summary Report. Toronto, ON: Canadian Cancer Society (Ontario Division) and Cancer Care Ontario. Available: http://www.cancercare.on.ca/pdf/Cancer2020CCS-1513Report_summary.pdf

Ministry of Health and Long-Term Care. (1997). Mandatory Health Programs and Services Guidelines. Available: <http://www.health.gov.on.ca/english/providers/pub/pubhealth/manprog/mhp.pdf>

Aboriginal Cancer Care Unit, Cancer Care Ontario. (2002). Analysis of the Findings: Aboriginal Cancer Care Needs Assessment. Toronto, ON: Cancer Care Ontario. Available: <http://www.cancercare.on.ca/documents/accuanalysisoffindings.pdf>

Other References on this Topic:

Peek, M.E., Han, J.H. (2004) Disparities in screening mammography: Current status, interventions and implications. *Journal of General Internal Medicine*, 19:184-194.

Task Force on Community Preventive Services. (2005) Improving the Use of Breast, Cervical and Colorectal Cancer Screening. Available: <http://www.thecommunityguide.org/cancer/screening/ca-screening.pdf>

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