

# Cancer Prevention and Control, Client-Oriented Screening Interventions: Reducing Client Out-of-Pocket Costs – Breast Cancer (2008 Archived Review)

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## Review Summary

### Intervention Definition

Some interventions seek to increase cancer screening by reducing out-of-pocket costs. They may do so by reducing the costs of the screening tests, providing vouchers, reimbursing clients or clinics, and/or reducing health insurance costs.

### Summary of Task Force Finding

The Community Preventive Services Task Force recommends interventions that reduce out-of-pocket costs to clients to increase screening for breast cancer based on sufficient evidence of effectiveness.

The Task Force has related findings for reducing client out-of-pocket-costs specific to the following:

- [Cervical cancer](#) (insufficient evidence)
- [Colorectal cancer](#) (insufficient evidence)

### Results from the Systematic Review

#### Breast Cancer

Eight studies qualified for the systematic review.

- Studies evaluated the extension of Medicare or state benefits to cover periodic mammography and two assessed the use of free client vouchers (6 studies).
- Proportion of study participants completing mammography: median increase of 11.5 percentage points (8 studies).

Findings should be applicable to various populations and settings in which people would accept screening but have limited financial resources.

These findings were based on a systematic review of all available studies, conducted on behalf of the Task Force by a team of specialists in systematic review methods, and in research, practice and policy related to cancer prevention and control.

#### Publications

Baron RC, Rimer BK, Coates RJ, et al. [Client-directed interventions to increase community access to breast, cervical, and colorectal cancer screening: a systematic review](#) [www.thecommunityguide.org/cancer/screening/client-oriented/Cancer2008\_ClientDirected\_Access.pdf]. *Am J Prev Med* 2008;35(1S):56-66.

Task Force on Community Preventive Services. [Recommendations for client- and provider-directed interventions to increase breast, cervical, and colorectal cancer screening](#) [www.thecommunityguide.org/cancer/screening/client-oriented/Cancer2008\_TaskForceRecs.pdf]. *Am J Prev Med* 2008;35(1S): S21-5.

The following Task Force finding and supporting materials are for reducing client out-of-pocket costs to increase breast, cervical, and colorectal cancer screening.

## Task Force Finding

### Intervention Definition

These interventions attempt to minimize or remove economic barriers that impede client access to cancer screening services. Costs can be reduced through a variety of approaches, including vouchers, reimbursements, reduction in copays, or adjustments in federal or state insurance coverage. Efforts to reduce client costs may be combined with measures to provide client education, information about program availability, or measures to reduce structural barriers.

### Task Force Finding (July 2008)\*

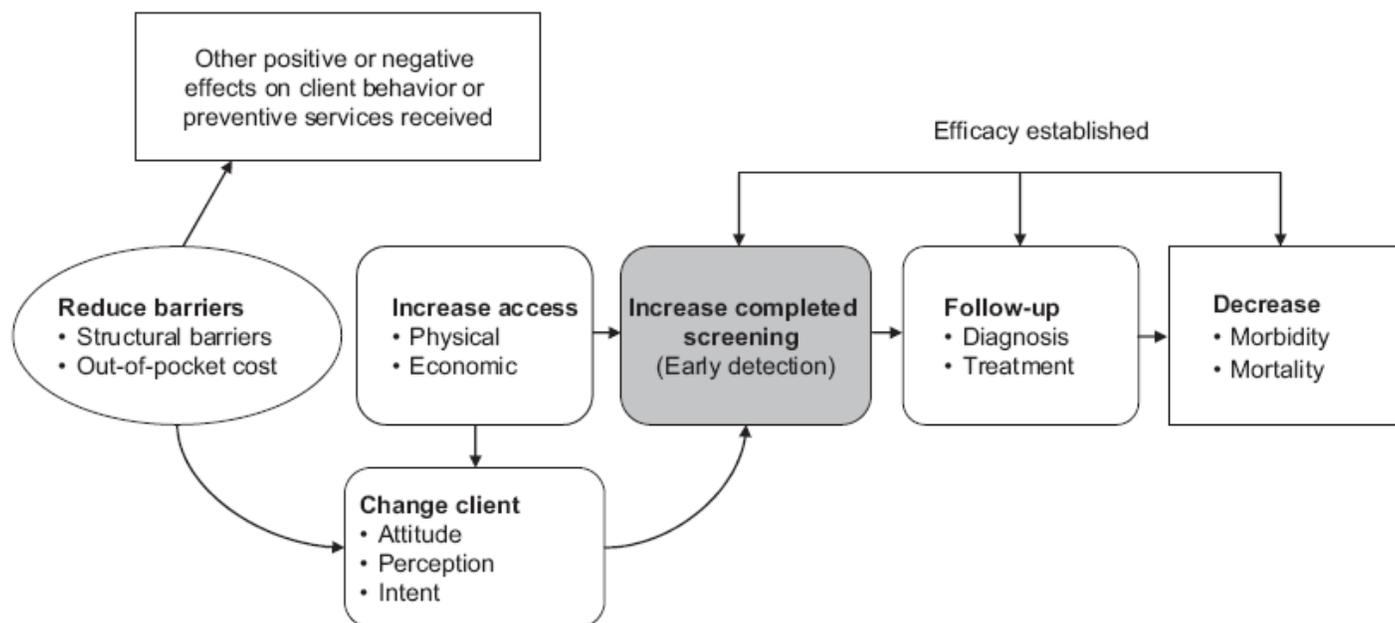
The Task Force recommends reducing out-of-pocket costs to clients to increase screening for breast cancer on the basis of sufficient evidence of effectiveness. There is insufficient evidence to determine the effectiveness of this intervention in increasing screening for cervical or colorectal cancer because too few (cervical cancer) or no (colorectal cancer) studies were identified.

\*From the following publication:

Task Force on Community Preventive Services. [Recommendations for client- and provider-directed interventions to increase breast, cervical, and colorectal cancer screening](http://www.thecommunityguide.org/cancer/screening/client-oriented/Cancer2008_TaskForceRecs.pdf) [www.thecommunityguide.org/cancer/screening/client-oriented/Cancer2008\_TaskForceRecs.pdf]. *Am J Prev Med* 2008;35(1S): S21-5.

## Supporting Materials

### Analytic Framework



### Evidence Gaps

#### What are Evidence Gaps?

Each Community Preventive Services Task Force (Task Force) review identifies critical evidence gaps—areas where information is lacking. Evidence gaps can exist whether or not a recommendation is made. In cases when the Task Force finds insufficient evidence to determine whether an intervention strategy works, evidence gaps encourage researchers and program evaluators to conduct more effectiveness studies. When the Task Force recommends an intervention, evidence gaps highlight missing information that would help users determine if the intervention could meet their particular needs. For example, evidence may be needed to determine where the intervention will work, with which populations, how much it will cost to implement, whether it will provide adequate return on investment, or how users should structure or deliver the intervention to ensure effectiveness. Finally, evidence may be missing for outcomes different from those on which the Task Force recommendation is based.

#### Identified Evidence Gaps

These reviews demonstrate the effectiveness of reducing structural barriers in increasing screening for breast and colorectal cancers (by mammography and FOBT, respectively) and the effectiveness of reducing out-of-pocket client costs in increasing screening for breast cancer. However, important questions not addressed in the reviews may have additional implications for the effectiveness of these interventions.

- How can public social and economic policies, along with private initiatives, direct resources to increase cost relief and structural accessibility to cancer screening services?

- What are effective ways to ensure that clients are informed that structural and economic barriers to cancer screening access have been or can be reduced?
- How can access problems caused by shortages of radiologists who read mammograms and closing of breast cancer screening facilities be addressed?
- Can the capacity to perform screening endoscopy be increased to meet current and future needs?

Because evidence was insufficient to determine whether reducing structural barriers is effective in increasing cervical cancer screening, or whether reducing out-of-pocket costs is effective in increasing both cervical and colorectal cancer screening, basic effectiveness research questions remain. These include questions about the role of reducing structural barriers and out-of-pocket costs in promoting screening by colorectal endoscopy and double contrast barium enema.

## Summary Evidence Table

| Study  | Location<br>Intervention<br>Comparison   | Study population<br>description<br>Sample size   | Effect<br>measure  | Reported<br>baseline   | Reported<br>effect   | Value used<br>in summary<br>[95%CI]   | Follow-<br>up<br>time |
|--|--|--|--|--|--|---|-----------------------|
| <p><b>Author (year):</b> Brean (1997; included 5 separate studies)</p> <p><b>Study Period:</b> 1991 – 1993</p> <p><b>Design Suitability:</b> Least</p> <p><b>Study Design:</b> Pre-post</p> <p><b>Quality of Execution:</b> Fair</p> <p><b>Outcome Measurement:</b> Completed Screening: Mammography<br/>Self report</p> | <p><b>Location:</b> US, CA (Los Angeles); MA; NC (Eastern); NY (Long Island); PA (Philadelphia)</p> <p>1 intervention arm</p> <p><b>Intervention:</b> Medicare reimbursement for mammography (evaluated over 5 sites)</p> <p><b>Comparison:</b> None</p> | <p><b>Study population:</b> Non-institutionalized, non-Hispanic white women ages 65 - 74 years with no history of breast cancer, who were capable of consenting to a half-hour interview. Only control sites were examined in order to determine the effect of the new reimbursement policy alone.</p> <p><b>Sample Size:</b><br/>           Los Angeles: n= 244<br/>           Eastern MA: n = 742<br/>           Eastern NC: n = 564<br/>           Long Island: n= 777<br/>           Philadelphia: n = 609</p> | <p>Absolute change in proportion of women reporting completion of screening.</p> | <p>LA: 67%<br/>           MA: 61%<br/>           NC: 44%<br/>           LI: 53%<br/>           Phil: 53%</p> | <p>67%<br/>           69%<br/>           60%<br/>           60%<br/>           58%</p> | <p>LA: 0 pct pts (ns)<br/>           MA: +8 pct pts (p&lt;0.05)<br/>           NC: +16 pct pts (p&lt;0.05)<br/>           LI: +7 pct pts (p&lt;0.05)<br/>           Phil: + 5 pct pts (p&lt;0.05)</p> | <p>24 months</p>      |

| Study  | Location<br>Intervention<br>Comparison  | Study population<br>description<br>Sample size  | Effect<br>measure   | Reported<br>baseline | Reported<br>effect          | Value used<br>in summary<br>[95%CI]                     | Follow-<br>up<br>time |
|--|---|---|---|----------------------|-----------------------------|---|-----------------------|
| <p><b>Author (year):</b> Kiefe (1994)</p> <p><b>Study Period:</b> 1992</p> <p><b>Design Suitability:</b> Greatest</p> <p><b>Study Design:</b> gRCT</p> <p><b>Quality of Execution:</b> Fair</p> <p><b>Outcome Measurement:</b> Completed Screening: Mammography</p> <p>Verified by record review</p> | <p><b>Location:</b> US, Houston, TX</p> <p>1 intervention arm</p> <p><b>Intervention:</b> Included a voucher along with one on one education and Medicare benefits.</p> <p><b>Comparison:</b> One on one education and Medicare benefits (usual care)</p> | <p><b>Study population:</b></p> <p>Women who received Medicare Plan A and/or B, and had not received a mammogram in the past 2 years.</p> <p><b>Sample Size:</b></p> <p>Intervention: n= 61</p> <p>Comparison: n = 58</p> | <p>Absolute change in proportion of women reporting completion of mammogram within 2 months of intervention relative to the comparison group.</p> | <p>NR</p>            | <p>I: 44%</p> <p>C: 10%</p> | <p>+34 pct pts</p> <p>95% CI: (19, 49)</p>              | <p>2 months</p>       |
| <p><b>Author (year):</b> Schillinger (2000)</p>  | <p><b>Location:</b> US, Oregon</p> <p>1 intervention arm</p>  | <p><b>Study population:</b></p> <p>Randomly selected women who were newly enrolled in the Oregon Health</p>   | <p>Absolute change in proportion of women with completed screening relative to</p>  | <p>Mammo: 34%</p>    | <p>Mammogram: 57%</p>       | <p>Mammogram +23 pct pts (p&lt;0.05)</p> <p>95% CI:</p> | <p>12 months</p>      |

| Study  | Location<br>Intervention<br>Comparison  | Study population<br>description<br>Sample size  | Effect<br>measure   | Reported<br>baseline | Reported<br>effect | Value used<br>in summary<br>[95%CI]         | Follow-<br>up<br>time |
|--|---|---|---|----------------------|--------------------|---|-----------------------|
| <p><b>Study Period:</b><br/>1994</p> <p><b>Design Suitability:</b><br/>Least</p> <p><b>Study Design:</b><br/>Pre-post</p> <p><b>Quality of Execution:</b><br/>Fair</p> <p><b>Outcome Measurement:</b><br/>Completed Screening:<br/>Mammography (w/in previous 2 yrs)<br/>Self report</p> | <p><b>Intervention:</b><br/>Extended capitated managed care to uninsured citizens living below federal poverty level</p> <p><b>Comparison:</b><br/>None</p> | <p>Plan</p> <p><b>Sample Size:</b><br/>Overall: n = 383<br/>Mammogram: 333</p>  | the pre-intervention  |                      |                    | (16, 30)                                    |                       |
| <p><b>Author (year):</b> Skaer (1996)</p> <p><b>Study Period:</b> 2/1995 – 03/1995</p>   | <p><b>Location:</b> US, Washington</p> <p>1 intervention arm</p> <p><b>Intervention:</b> Voucher for</p>  | <p><b>Study population:</b><br/>Latino/Hispanic women over 40 years old who had not received a mammogram within the past year</p> | Absolute change in proportion of women with completed screening relative to the comparison group. | NR                   | I: 87.5<br>C: 17.5 | +70 pct pts (p<0.05)<br>95% CI:<br>(54, 86) | 1 month               |

| Study  | Location<br>Intervention<br>Comparison   | Study population<br>description<br>Sample size                                     | Effect<br>measure | Reported<br>baseline | Reported<br>effect | Value used<br>in summary<br>[95%CI] | Follow-<br>up<br>time |
|--|--|--|-------------------|----------------------|--------------------|-------------------------------------|-----------------------|
| <p><b>Design Suitability:</b><br/>Greatest</p> <p><b>Study Design:</b><br/>gRCT</p> <p><b>Quality of Execution:</b><br/><br/>Good</p> <p><b>Outcome Measurement:</b><br/>Completed Screening:<br/>Mammography<br/><br/>Record Review</p> | <p>free mammogram along with usual education</p> <p><b>Comparison:</b><br/>Usual education</p> | <p><b>Sample size:</b><br/><br/>Intervention: n= 40<br/><br/>Comparison: n= 40</p> |                   |                      |                    |                                     |                       |

## Included Studies

### Reducing Out-of-Pocket Costs to Clients (Breast Cancer)

Breen N, Feuer E, Depuy S, Zapka J. The effect of Medicare reimbursement for screening mammography on utilization and payment. *Public Health Reports* 1997;112:423-32.

Kiefe C, McKay S, Halevy A, Baruch B. Is cost a barrier to screening mammography for low-income women receiving Medicare benefits? *Archives of Internal Medicine* 1994;154:1217-24.

Schillinger J, Mosbaek C, Austin D, et al. Health care reform in Oregon: the impact of the Oregon Health Plan on utilization of mammography. *Am J Prev Med* 2000;18(1):11-7.

Skaer T, Robinson L, Sclar D, Harding G. Financial incentive and the use of mammography among Hispanic migrants to the United States. *Health Care for Women Int* 1996;17:281-91.

## Search Strategy

*The following outlines the search strategy used for reviews of these interventions to increase breast, cervical, and colorectal cancer screening: Client Reminders (archived); Client Incentives (archived); Mass Media Targeting Clients (archived); Small Media Targeting Clients; Group Education for Clients (archived); One-on-One Education for Clients (archived); Reducing Structural Barriers for Clients (archived); Reducing Client Out-of-Pocket Costs (archived); Provider Assessment and Feedback (archived); Provider Incentives (archived).*

To establish the evidence base the team searched five computerized databases from the earliest entries in each through November 2004: MEDLINE, database of the National Library of Medicine (from 1966); the Cumulative Index to Nursing and Allied Health database (CINAHL, from 1982); the Chronic Disease Prevention database (CDP, Cancer Prevention and Control subfield, from 1988); PsycINFO (from 1967); and the Cochrane Library databases. Medical subject headings (MeSH) searched (including all subheadings) are shown below. The team also scanned bibliographies from key articles and solicited other citations from other team members and subject-matter experts. Conference abstracts were not included because, according to Community Guide criteria, they generally do not provide enough information to assess study validity and to address the research questions.

The search identified over 9000 citations whose titles and abstracts were screened for potential relevance to interventions and outcomes of interest; of these, 580 articles were retrieved for full-text review.

Search terms used in five electronic databases to find studies for inclusion in the systematic reviews of cancer screening. Searches were conducted to find all studies of cancer screening including those specific to screening for breast, cervical, or colorectal cancer.

### General

Neoplasms—combined with any of the following headings:

- Early detection
- Mass screening
- Multiphasic screening
- Preventive health services
- Screening

### Breast cancer

- Breast neoplasms
- Mammography

### Cervical cancer

- Cervical intraepithelial neoplasia
- (Uterine) cervical neoplasms
- Cervix dysplasia
- Vaginal smears

### Colorectal cancer

- Colonic neoplasms
- Colorectal neoplasms

Occult blood  
Sigmoid neoplasms  
Sigmoidoscopy

From: Baron RC, Rimer BK, Coates RJ, et al. Methods for conducting systematic reviews of evidence on effectiveness and economic efficiency of interventions to increase screening for breast, cervical, and colorectal cancers. *Am J Prev Med* 2008;35(1S):26-33.

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### Disclaimer

The findings and conclusions on this page are those of the Community Preventive Services Task Force and do not necessarily represent those of CDC. Task Force evidence-based recommendations are not mandates for compliance or spending. Instead, they provide information and options for decision makers and stakeholders to consider when determining which programs, services, and policies best meet the needs, preferences, available resources, and constraints of their constituents.

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