The Guide to Community Preventive Services
THE COMMUNITY GUIDE
What Works to Promote Health

Cancer Prevention and Control, Provider-Oriented Screening Interventions: Provider Incentives – Cervical Cancer (2008 Archived Review)

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Review Summary

Intervention Definition

Incentives are rewards that motivate providers to perform screening or refer clients to cancer screening services. The rewards are usually monetary, but may also include other incentives such as continuing medical education credits.

Summary of Task Force Finding

The Community Preventive Services Task Force finds insufficient evidence to determine the effectiveness of provider incentives in increasing screening rates for cervical cancer (based on a small number of studies with inconsistent findings).

The Task Force has related findings for provider incentives specific to the following:

- Breast cancer (insufficient evidence)
- Colorectal cancer (insufficient evidence)

Results from the Systematic Review

Three studies qualified for the review of provider incentives to increase breast, cervical, or colorectal cancers, and they showed inconsistent results.

- Completed cervical cancer screening (within 6 months of increasing practitioner compensation for performing Pap tests): an 8 percentage point increase (p_0.05) (first study)
- Rates of recommending and/or ordering for mammography, Pap test, and FOBT: changes of -1.5, -0.8, and 2.2 percentage points, respectively (second study)
- Recommended or ordered mammography in the intervention group exceeded that of the comparison group by only 1 percentage point, while mammography completion declined by 2 percentage points (third study)

Interventions assessed in the included studies were diverse in their approach and duration.

Economic efficiency is not reviewed for interventions for which there is insufficient evidence to determine effectiveness.

This result was 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.

Publications

Sabatino SA, Habarta N, Baron RC. Interventions to increase recommendation and delivery of screening for breast, cervical, and colorectal cancers by healthcare providers: systematic reviews of provider assessment and feedback and provider incentives [www.thecommunityguide.org/cancer/screening/client-oriented/Cancer2008_SystematicReviews.pdf]. *Am J Prev Med* 2008;35(1S):67-74.

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):21-5.

The following Task Force finding and supporting materials are for provider incentives to increase breast, cervical, and colorectal cancer screening.

Task Force Finding

Intervention Definition

Provider incentives are rewards (direct or indirect) intended to motivate providers to perform cancer screening or make appropriate referral for their patients to receive these services. Rewards are often monetary, but can also include nonmonetary incentives (e.g., continuing medical education credit). Because some form of assessment is needed to determine whether providers receive rewards, an assessment component may be included in the intervention.

Task Force Finding (July 2008)*

The Task Force found insufficient evidence to determine the effectiveness of provider incentives in increasing screening for breast, cervical, or colorectal cancers because too few studies qualified for review, and those that did showed inconsistent results.

*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 [www.thecommunityguide.org/cancer/screening/client-oriented/Cancer2008_TaskForceRecs.pdf]. *Am J Prev Med* 2008;35(1S):21-5.

Supporting Materials

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

The effectiveness of provider incentives in increasing colorectal, breast, and cervical cancer screening has not been established. Despite great interest in and use of provider incentives in many organized health systems (e.g., pay-for-performance models), relatively little published scientific information is available to assess the effectiveness of incentives in increasing screening for breast, cervical, and colorectal cancers. Several research questions remain.

Effectiveness

- Are provider incentives effective in increasing screening for colorectal, breast, and cervical cancers?
- Do provider incentives incrementally increase the effectiveness of provider assessment and feedback interventions?

Economic Evidence

- What are the most cost-effective approaches to reward cancer screening performance and/or referral by practitioners?

Other Positive or Negative Effects

- Do these interventions result in other positive or negative changes in health behavior or use of healthcare services

Summary Evidence Table

Author, Study Period	Design, Category, Execution	Study Location, Setting type Population Description	Interventions Studied, Comparison, and Number of Participants	Outcome and Effect Measure, Including Percentage Point change (Statistical Significance)
Grady, 1997 NR	Randomized group trial; greatest; fair	Dayton, OH and Springfield, MA; Clinic/office; General, family, or internal medicine community-based practices providing care for women ages 50 and older.	1. Provider reminder (n=18) *versus* 2. Provider reminder, assessment and feedback, and provider incentive (n=20) *versus* 3. Control (n=23)	Mammography Offered 2 versus 1 = 1.0 pct pt (NR 2 versus 3 = 6.5 pct pt (NR) Mammography completed 2 versus 3 = 4.2 pct pt (NR) 2 versus 1 = -0.9 pct pt (NR)

Author, Study Period	Design, Category, Execution	Study Location, Setting type Population Description	Interventions Studied, Comparison, and Number of Participants	Outcome and Effect Measure, Including Percentage Point change (Statistical Significance)
Hillman, 1998 1993-1995	Randomized trial; greatest; fair	Philadelphia, PA; Primary Care clinics associated with healthcare management alternatives; The 52 largest practices in the area were randomized	1. Provider incentive (financial) offered to physicians based on aggregate practice compliance (%) for cancer screening; semi-annual feedback was given to the providers, documenting site performance for each guideline, an aggregate score as well as the plan-wide scores for comparison. (Clinics n=26) *versus* 2. Control: Usual payment procedures (Clinics n=26) Patients n=7228	% compliance for each screening test *charts documenting a physician referral for screening (with or without actual test results) were considered as being compliant. Offered Pap 1 versus 2 = -0.8 pct pt Mammogram 1 versus 2 = -1.5 pct pt Colorectal 1 versus 2 = 2.2 pct pt
Reid, 1991 April 1 1990 to October 1990	Before after study; least; fair	Perth and Kinross, Scotland; Community-wide/6 practices; Women 21 – 60 without a hysterectomy who attend one of the 6 randomly selected general practices from the eligible 26 practices in the area. Eligible practices have a minimum list size of 346 women per partner.	1. (I) A new contract for general practitioners revamps the remuneration system for cervical smear testing. The new contract called for remuneration to they practitioner upon reaching the population coverage targets of 50% and then 80%. 2. Control: Pre-intervention (prior to April 1990) coverage of patients eligible for cervical testing (remuneration to be paid on an item of service basis for taking cervical spears from women aged 35 or older, once every five years. Smears taken from younger patients qualified only if they had had 3 pregnancies; any other smears were not specifically recompensed)	Proportion of women with cervical screening (using % population coverage 1 versus 2 = 8.0 pct pt (< .0001)(we calculated using Epi-Info; M-H adjusted)

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.

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.

Document last updated September 24, 2013