

Recommendations for Client- and Provider-Directed Interventions to Increase Breast, Cervical, and Colorectal Cancer Screening

Task Force on Community Preventive Services

Introduction

Cancer is the leading cause of death for all people in the U.S. under the age of 65 and the second leading cause of death for people of all ages.¹ Effective screening tests for breast, colorectal, and cervical cancers can prevent cancer-related mortality.²⁻⁵ Yet, despite many years of past improvement,⁶ colorectal cancer screening rates remain below expected levels,⁷ breast cancer screening may be on the decline,⁸ and cervical cancer screening rates are prematurely stable.⁷ Recent estimates⁹ suggest that 4475 deaths from breast cancer, 3644 deaths from cervical cancer, and 9632 deaths from colorectal cancer could be prevented each year if all eligible Americans received the appropriate cancer screening services. Preventing these deaths will, in large measure, require closing gaps created by social and economic disparities which play a major role in underutilization of current cancer screening services.^{6,7} This report makes recommendations on the evidence of effectiveness of selected community and healthcare system interventions to increase breast, cervical, and colorectal cancer screening rates so that goals of lower cancer mortality set by *Healthy People 2010* (Table 1),¹⁰ the nation's prevention agenda, can be more easily achieved.

These recommendations represent the work of the independent, nonfederal Task Force on Community Preventive Services (Task Force). The Task Force is developing the *Guide to Community Preventive Services* (the *Community Guide*) with the support of U.S. Department of Health and Human Services (USDHHS) in collaboration with public and private partners. The CDC provides staff support to the Task Force for development of the *Community Guide*, but the opinions and recommendations resulting from the reviews are those of the Task Force. General methods used by the *Community Guide* to conduct evidence reviews have been

published elsewhere¹¹ and specific methods used to conduct cancer screening intervention reviews can be found in an accompanying article.¹²

Recommendations in this report address the three primary strategic objectives¹³ for increasing cancer screening rates: increasing community demand for cancer screening services, increasing community access to screening services, and increasing screening service delivery by healthcare providers. The evidence on which these recommendations are based appears in accompanying articles.¹⁴⁻¹⁶ These recommendations are intended to provide guidance and appropriate options to be considered by communities and healthcare systems engaged in cancer control programs.

Information from Other Advisory Groups

The U.S. Preventive Services Task Force (USPSTF) makes the following recommendations for cancer screening: screening mammography, with or without clinical breast exam, is recommended every 1-2 years for women aged ≥ 40 ³; screening for cervical cancer is strongly recommended for women who have been sexually active and still have a cervix⁴; and screening for colorectal cancer is strongly recommended for men and women aged ≥ 50 years.⁵

Intervention Recommendations

A Task Force recommendation is based primarily on the effectiveness of the intervention as determined by the systematic review process. In making a recommendation, however, the Task Force balances information on effectiveness with information on other potential benefits or harms of the intervention. The Task Force also considers the applicability of effective interventions to various settings and populations in determining the scope of the intervention. Finally, analyses of economic efficiency of effective interventions are provided in the accompanying reviews to assist the intended audience with decision making and to bring attention to research needs in this area. Economic information, however, does not influence Task Force recommendations. Here, we present our recommendations on interventions designed to increase community

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Table 1. *Healthy People 2010*¹⁰ goals for reducing deaths from breast, cervical, and colorectal cancers

Goal (objective #)	Population	1998 baseline ^a	2010 target ^a
Reduce the breast cancer death rate (3-3)	Females	27.9	21.3
Reduce the death rate from cancer of the uterine cervix (3-4)	Females	3.0	2.0
Reduce the colorectal cancer death rate (3-5)	Total population	21.2	13.7

^aPer 100,000 population

demand for and access to breast, cervical, and colorectal cancer screening services, and to increase provider referral for and delivery of cancer screening. For reasons discussed in accompanying articles,¹³⁻¹⁵ effectiveness of client-directed interventions was studied separately for increasing breast cancer screening by mammography, cervical cancer screening by Pap test, and colorectal cancer screening by fecal occult blood test (unless otherwise noted). Effectiveness of provider-directed interventions was studied across all three cancer sites.¹⁶ The recommendations are summarized in Table 2.

An explanation of how these interventions were selected is presented in an accompanying article.¹³ Detailed reviews of the evidence on effectiveness for increasing community demand and community access appears in two additional articles in this supplement,^{14,15} and evidence on effectiveness for increasing provider delivery of screening services in a third article.¹⁶

Increasing Community Demand

Client reminders. Client reminders or recalls (client reminders) are printed (letter or postcard) or telephone messages advising people that they are due (reminder) or late (recall) for screening. Client reminders may be enhanced by one or more of the following: a follow-up printed or telephone reminder; additional text or discussion with information about indications for, benefits of, and ways to overcome barriers to screening; or assistance in scheduling appointments. Tailored reminders (printed or verbal) addresses the individual's risk profile or other relevant characteristics, such as what keeps a specific client from seeking screening and what would encourage the client to be screened.

The Task Force recommends the use of client reminders to increase screening for breast and cervical cancer (by mammography and Pap test, respectively) on the basis of sufficient evidence of effectiveness. The

Table 2. Increasing cancer screening: summary of findings by cancer site and screening method

Intervention	Breast cancer/mammography	Cervical cancer/Pap test	Colorectal cancer/FOBT
Increasing community demand			
Client reminders	Recommended (strong evidence)	Recommended (strong evidence)	Recommended (sufficient evidence)
Client incentives alone	Insufficient evidence to determine effectiveness	Insufficient evidence to determine effectiveness	Insufficient evidence to determine effectiveness
Mass media alone	Insufficient evidence to determine effectiveness	Insufficient evidence to determine effectiveness	Insufficient evidence to determine effectiveness
Small media	Recommended (strong evidence)	Recommended (strong evidence)	Recommended (strong evidence)
Group education	Insufficient evidence to determine effectiveness	Insufficient evidence to determine effectiveness	Insufficient evidence to determine effectiveness
One-on-one education	Recommended (strong evidence)	Recommended (strong evidence)	Insufficient evidence to determine effectiveness
Increasing community access			
Reducing structural barriers	Recommended (strong evidence)	Insufficient evidence to determine effectiveness	Recommended (strong evidence)
Reducing out-of-pocket costs	Recommended (sufficient evidence)	Insufficient evidence to determine effectiveness	Insufficient evidence to determine effectiveness
Increasing provider delivery and referral			
Provider assessment and feedback	Recommended (sufficient evidence)		
Provider incentives	Insufficient evidence to determine effectiveness		

FOBT, fecal occult blood test

Task Force recommends the use of client reminders to increase screening for colorectal cancer by fecal occult blood test (FOBT) on the basis of sufficient evidence of effectiveness. Evidence is insufficient, however, to determine whether client reminders are effective in increasing colorectal cancer screening by flexible sigmoidoscopy, colonoscopy, or double contrast barium enema, because no studies evaluating these screening procedures were identified.

Client incentives. Client incentives are small, noncoercive rewards (e.g., cash or coupons) to motivate people to seek cancer screening for themselves or to encourage others (e.g., family members, close friends) to seek screening. Incentives are distinct from interventions designed to improve access to services (e.g., transportation, child care, reducing out-of-pocket client costs), which are considered separately.

A review of available scientific evidence identified no studies evaluating the use of incentives alone. Therefore, the Task Force finds insufficient evidence to determine the effectiveness of client incentives alone in increasing screening for breast, cervical, or colorectal cancers.

Mass media. Mass media—including television, radio, newspapers, magazines, and billboards—are used to communicate educational and motivational information in community or larger scale intervention campaigns.

A review of available scientific evidence identified only two studies of adequate quality that evaluated the use of mass media alone to promote cervical cancer screening. These studies reported positive findings but had some methodologic limitations. No studies were found evaluating its use to promote breast or colorectal cancer screening. Therefore, the Task Force finds insufficient evidence to determine the effectiveness of mass media alone in increasing screening for breast, cervical, or colorectal cancer.

Small media. Small media include videos and printed materials such as letters, brochures, pamphlets, flyers, or newsletters, which convey educational and motivational information on indications for, benefits of, and ways to overcome barriers to screening. The messages contained in these materials may or may not be tailored to specific people based on unique psychological and behavioral characteristics as derived from individual assessments. These materials can be distributed through community settings or healthcare systems.

The Task Force recommends the use of small media to increase screening for breast cancer, cervical cancer, and colorectal cancer (by FOBT) on the basis of strong evidence of effectiveness. Evidence is insufficient, however, to determine whether small media are effective in increasing colorectal cancer screening by flexible sigmoidoscopy, colonoscopy, or double contrast barium

enema because no studies evaluating these screening procedures were identified.

Group education. Group education sessions to inform and motivate people to seek recommended screenings are usually conducted by health professionals or trained laypeople, using slide presentations or other teaching aids in a lecture or interactive setting.

The Task Force finds insufficient evidence to determine the effectiveness of group education in increasing screening for breast cancer (based on inconclusive findings), cervical cancer (based on a small number of studies with inconsistent findings and methodologic limitations), and colorectal cancer (based on a single study with mixed results).

One-on-one education. One-on-one education delivers educational and motivational messages in person or by telephone. Sessions can be held in medical, community, worksite, or home settings and information can be conveyed by healthcare workers or other health professionals, lay health advisors, or volunteers. As with small media (see above), interventions can be untailed to address a general target population or tailored to reach specific individuals based on unique psychological and behavioral characteristics as derived from individual assessments. As defined for these reviews, one-on-one education may include an accompanying small media or client reminder component.

The Task Force recommends the use of one-on-one education to increase screening for breast and cervical cancers on the basis of strong evidence of effectiveness. There is insufficient evidence to determine the effectiveness of this intervention in increasing screening for colorectal cancer because only two studies (each with some methodologic limitations) were found.

Increasing Community Access

Reducing structural barriers. Structural barriers are nonmonetary obstacles that impede access to screening, such as inconvenient hours or locations for screening, complex administrative procedures, the need for multiple clinic visits, or lack of needed translation services. Efforts to reduce structural barriers may be combined with measures to provide client education, information about program availability, or measures to reduce out-of-pocket costs.

The Task Force recommends reducing structural barriers to increase screening for breast and colorectal cancers (by mammography and FOBT, respectively) on the basis of strong evidence of effectiveness. Evidence is insufficient, however, to determine whether reducing structural barriers is effective in increasing colorectal cancer screening by flexible sigmoidoscopy, colonoscopy, or double contrast barium enema, because no studies using these screening procedures were identified. Evidence was also insufficient to determine the

effectiveness of the intervention in increasing screening for cervical cancer because only two relevant studies were identified, and these had some methodologic limitations.

Reducing out-of-pocket costs to clients. 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.

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.

Increasing Provider Delivery

Provider assessment and feedback. Provider assessment and feedback interventions are intended to evaluate provider performance in delivering or offering screening to clients (assessment) and then present providers with information about their performance in providing screening (feedback). Feedback can address the performance of a group of providers or an individual provider, and can include a comparison of that performance with a goal or standard.

On the basis of sufficient evidence of effectiveness in increasing screening for breast cancer (mammography), cervical cancer (Pap test), and colorectal cancer (FOBT), the Task Force recommends the use of provider assessment and feedback interventions. Evidence was insufficient, however, to determine the effectiveness of this intervention in increasing colorectal cancer screening using methods other than FOBT.

Provider incentives. 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.

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.

Interpreting and Using the Recommendations

Increasing community demand, increasing community access, and increasing provider delivery or referral are primary strategic objectives to be addressed when considering options for promoting adherence to breast, cervical, and colorectal cancer screening at recommended intervals. The Task Force recommendations described in this article are based on systematic reviews of evidence from studies of community- and systems-based interventions designed to meet these objectives.

These recommendations are intended to highlight effective interventions, which should be considered over alternatives without documented effectiveness when deciding among possible approaches to increasing cancer screening. At the same time, these recommendations are neither intended nor expected to be applicable in all situations. Decision makers and implementers should bear in mind that an understanding of local context—including known barriers to screening in the target population(s), available resources, and what can be adapted to delivery—is essential to the process of identifying locally appropriate strategies and selecting feasible intervention approaches. The systematic collection of qualitative and quantitative data can be an extremely helpful tool for developing a more thorough understanding of the local context. Once that context is clearly understood, the recommendations presented here and the evidence on applicability in the accompanying evidence reviews^{14–16} can be used to help select appropriate interventions.

In many circumstances, it may be appropriate to implement two or more interventions. A single intervention might not adequately address multiple barriers that contribute to low screening rates within a community or that prevent individuals who are hard to reach from adhering to screening recommendations. For example, some target populations may require interventions that increase both access to services and the knowledge and motivation (demand) to seek them. Alternatively, when barriers to screening are primarily related to either access or demand, multiple intervention approaches may be required to overcome them. For instance, reducing both a structural barrier and out-of-pocket costs may be required to increase access substantially for some communities or individuals. Alternatively, client reminders may be adequate to increase demand within a subset of the community already motivated to be screened, but more direct or intense one-on-one education may be necessary for a subset that is less ready for screening.

It is beyond the scope of this report to provide detailed information on how to effectively select, implement, and sustain the interventions recommended here. Some information and assistance is available through online tools, such as those available at Cancer Control PLANET (<http://cancercontrolplanet.cancer>).

gov/). Although such tools can be invaluable resources, it is also helpful to draw on direct technical assistance and advice from people with experience in implementing the interventions of interest.

No financial disclosures were reported by the authors of this paper.

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