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

Community Preventive Services Task Force

Summary: The Community Preventive Services Task Force (Task Force) recommends increasing screening for breast cancer through use of group education, one-on-one education, client reminders, reducing client out-of-pocket costs, and provider assessment and feedback; increasing screening for cervical cancer through use of one-on-one education, client reminders, and provider assessment and feedback; and increasing screening for colorectal cancer through use of one-on-one education, client reminders, reducing structural barriers to screening, and provider assessment and feedback. The Task Force found insufficient evidence to determine the effectiveness of increasing screening for breast cancer through use of client incentives, mass media, or provider incentives; for cervical cancer screening through use of group education, client incentives, mass media, reducing client out-of-pocket costs, reducing structural barriers, or provider incentives; and for colorectal cancer screening through use of group education, client incentives, mass media, reducing client out-of-pocket costs, or provider incentives. Details of these findings, and some considerations for use, are provided in this article.

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Introduction

In 2008, the Community Preventive Services Task Force (Task Force) published recommendations for ten interventions to increase screening for breast, cervical, and colorectal cancer.[1] Interventions were in three primary strategic objective areas[2]: increasing community demand for cancer screening services, increasing community access to screening services, and increasing screening service delivery by healthcare providers. The Task Force recently updated its recommendations in this critical area, based on an expanded review of the literature (through October 2008) and systematic reviews of all evidence.

These updated recommendations cover nine interventions to increase screening for breast, cervical, and colorectal cancer. These fall into two strategic areas: client-oriented interventions (combining increasing community demand for screening and increasing community access to screening services) and provider-oriented interventions. Seven client-oriented intervention reviews were updated: group education, one-on-one education, client incentives, client reminders, mass media, reducing out-of-pocket costs, and reducing structural barriers. Two intervention reviews to increase provider delivery of cancer screening services were updated: provider assessment and feedback, and provider incentives.

Overall, the new data changed findings for three interventions: group education to increase breast cancer screening is now recommended on the basis of sufficient evidence of effectiveness (previously, insufficient evidence to determine effectiveness had been found); one-on-one education to increase colorectal cancer screening is now recommended on the basis of sufficient evidence of effectiveness (previously, insufficient evidence to determine effectiveness had been found); and client reminders to increase colorectal cancer screening are now recommended on the basis of strong evidence of effectiveness (previously, this intervention was recommended on the basis of sufficient evidence of effectiveness). Findings, by intervention and cancer site, are presented below, and the evidence on which these findings are based is provided in the accompanying article in this issue of the *American Journal of Preventive Medicine*.[3]

Names and affiliations of the Task Force members can be found at www.thecommunityguide.org/about/task-force-members.html.

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An updated review for small media interventions is underway. An initial review of provider reminders recently was published.[4] The current updated recommendations represent the work of the independent, nonfederal Community Preventive Services Task Force (Task Force). The Task Force is developing the *Guide to Community Preventive Services* (the *Community Guide*) with the support of DHHS 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 for conducting *Community Guide* evidence reviews, and specific methods for conducting cancer screening reviews, have been published elsewhere.[5,6]

The selected community and healthcare system interventions on which this report is based were developed, in part, to help meet goals of lowering cancer mortality set by *Healthy People 2020* (www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=5). The cancer objectives for *Healthy People 2020* reflect the importance of increasing screening for breast, cervical, and colorectal cancer by measuring use of effective screening tests identified in the U.S. Preventive Services Task Force (USPSTF) recommendations (see below).

Information from Other Advisory Groups

The U.S. Preventive Services Task Force issues recommendations for screening of breast, cervical, and colorectal cancer. USPSTF recommendations for breast cancer screening were updated in December 2009 (www.uspreventiveservicestaskforce.org/uspstf/uspsbrca.htm). USPSTF recommendations for cervical cancer screening were updated in March 2012 (www.uspreventiveservicestaskforce.org/uspstf/uspscerv.htm). The USPSTF made its most recent recommendations on colorectal cancer screening (www.uspreventiveservicestaskforce.org/uspstf/uspscolo.htm) in 2008.

Intervention Recommendations

A Community Preventive Services Task Force recommendation is based primarily on effectiveness of the intervention as determined by the systematic literature 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.

Here, the Task Force presents the recommendations from updated reviews on interventions designed to increase community demand for and access to breast, cervical, and colorectal cancer screening services and to increase provider referral for and delivery of cancer screening. Effectiveness of client-oriented 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 (FOBT), flexible sigmoidoscopy, or colonoscopy; effectiveness of provider-oriented interventions was studied across all three cancer sites.

Client-Oriented Interventions

Group education. Group education conveys information on indications for, benefits of, and ways to overcome barriers to screening with the goal of informing, encouraging, and motivating participants to seek recommended screening. Group education usually is conducted by health professionals or by trained lay people who use presentations or other teaching aids in a lecture or interactive format, and often incorporate role-modeling or other methods. Group education can be given to a variety of groups, in various settings, and by various types of educators with various backgrounds and styles.

The Task Force recommends group education (www.thecommunityguide.org/cancer/screening/client-oriented/RRgroupeducation_a.html) on the basis of sufficient evidence that these interventions are effective in increasing screening for breast cancer. There was insufficient evidence, however, to determine the effectiveness of group education in increasing screening for cervical cancer and colorectal cancer, based on small numbers of studies with methodologic limitations and inconsistent findings.

One-on-one education. One-on-one education conveys information by telephone or in person on indications for, benefits of, and ways to overcome barriers to screening with the goal of informing, encouraging, and motivating people to seek recommended screening. These messages are delivered by healthcare workers or other health professionals, lay health advisors, or volunteers and are conducted by telephone or in person in medical, community, worksite, or household settings. Interventions can be untailored to address the overall target population or tailored, based on individual assessments to address the recipient's individual characteristics, beliefs, or perceived barriers to screening. As defined by this review, one-on-one education may be accompanied by a small media or client reminder component.

The Task Force recommends the use of one-on-one education (www.thecommunityguide.org/cancer/screening/client-oriented/RROneonOneEducation_a.html) to increase screening for breast and cervical cancers on the basis of strong evidence of effectiveness. The Task Force also recommends the use of one-on-one education

to increase colorectal cancer screening with FOBT based on sufficient evidence of effectiveness. Evidence is insufficient, however, to determine the effectiveness of one-on-one education in increasing colorectal cancer screening with other tests, because only two studies assessed colonoscopy, with inconsistent results, and one study for flexible sigmoidoscopy found no effect.

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 client out-of-pocket costs). The Task Force finds insufficient evidence to determine the effectiveness of using client incentives (www.thecommunityguide.org/cancer/screening/client-oriented/RRincentives_a.html) to increase screening for breast, cervical, or colorectal cancers because only one study for breast cancer and no studies for cervical and colorectal cancers were identified.

Client reminders. Client reminders are textual (letter, postcard, e-mail) or telephone messages advising people that they are due (reminder) or overdue (recall) for screening. Client reminders may be enhanced by one or more of the following: follow-up printed or telephone reminders; additional text or discussion with information about indications for, benefits of, and ways to overcome barriers to screening; and/or assistance in scheduling appointments. Interventions can be untailored to address the overall target population or tailored with the intent to reach one specific person, based on characteristics unique to that person, related to the outcome of interest, and derived from an individual assessment.

The Task Force recommends the use of client reminders (www.thecommunityguide.org/cancer/screening/client-oriented/RRreminders_a.html) to increase screening for breast and cervical cancers on the basis of strong evidence of effectiveness. The Task Force also recommends the use of client reminders to increase colorectal cancer screening with FOBT based on strong evidence of effectiveness. Evidence is insufficient, however, to determine effectiveness of client reminders in increasing colorectal cancer screening with other tests (colonoscopy, flexible sigmoidoscopy) because of inconsistent evidence.

Mass media. Mass media—including TV, radio, newspapers, magazines, and billboards—are used to communicate educational and motivational information in community or larger-scale intervention campaigns. Mass media interventions, however, almost always include other components or attempt to capitalize on existing interventions and infrastructure. The updated review[3] evaluated the effectiveness of mass media used alone, or its individual contribution to the effectiveness of multicomponent interventions.

The Task Force finds insufficient evidence to determine the effectiveness of mass media interventions (www.thecommunityguide.org/cancer/screening/client-oriented/RRmassmedia_a.html) in increasing screening for breast, cervical, or colorectal cancers. Although additional studies were found during the updated review,[3] there continue to be too few studies to determine effectiveness for breast, cervical, or colorectal cancer screening.

Reducing out-of-pocket costs. 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 client out-of-pocket costs (www.thecommunityguide.org/cancer/screening/client-oriented/RRoutofpocket_a.html) to increase screening for breast cancer on the basis of sufficient evidence of effectiveness. There is insufficient evidence to determine the effectiveness of reducing out-of-pocket costs in increasing screening for cervical or colorectal cancer because too few (cervical cancer) or no (colorectal cancer) studies were identified. Nonetheless, the consistent, favorable results for interventions that reduce costs for breast cancer screening and several other preventive services suggest that such interventions are likely to be effective for increasing cervical and colorectal cancer screening as well.

Reducing structural barriers. Structural barriers are non-economic burdens or obstacles that impede access to screening. Interventions designed to reduce these barriers may facilitate access by reducing time or distance between service delivery settings and target populations; modifying hours of service to meet client needs; offering services in alternative or nonclinical settings (e.g., mobile mammography vans at worksites or in residential communities); and eliminating or simplifying administrative procedures and other obstacles (e.g., scheduling assistance or patient navigators, transportation, dependent care, translation services, limiting the number of clinic visits). Such interventions often include one or more secondary supporting measures, such as printed or telephone reminders; education about cancer screening; information about cancer screening availability (e.g., group

education, pamphlets, or brochures); or measures to reduce client out-of-pocket costs. Interventions principally designed to reduce client costs are considered to be a separate class of approaches.

The Task Force recommends reducing structural barriers to increase screening (www.thecommunityguide.org/cancer/screening/client-oriented/RRreducingstructualbarriers_a.html) 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 or colonoscopy because only one study using these screening procedures was identified. Evidence is also insufficient to determine the effectiveness of the intervention in increasing screening for cervical cancer because only three relevant studies were identified, and these had methodologic limitations.

Increasing Provider Delivery

Provider assessment and feedback. Provider assessment and feedback interventions both evaluate provider performance in offering and/or delivering screening to clients (assessment) and present providers with information about their performance in providing screening services (feedback). Feedback may describe the performance of a group of providers (e.g., mean performance for a practice) or individual providers, and may be compared with a goal or standard.

The Task Force recommends provider assessment and feedback interventions (www.thecommunityguide.org/cancer/screening/provider-oriented/RRpaf_a.html) on the basis of sufficient evidence of effectiveness in increasing screening for breast cancer (mammography); cervical cancer (Pap); and colorectal cancer (FOBT). Evidence remains insufficient, however, to determine effectiveness of this intervention in increasing colorectal cancer screening using methods other than FOBT.

Provider incentives. Provider incentives are direct or indirect rewards 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 include nonmonetary incentives also (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 finds insufficient evidence to determine the effectiveness of provider incentives (www.thecommunityguide.org/cancer/screening/provider-oriented/RRincentives_a.html) in increasing screening for breast, cervical, or colorectal cancers. Evidence is insufficient because of a small magnitude of effect across studies and because data from healthcare systems that include provider incentives as part of their strategies for administration and provider compensation have not been published.

Using the Recommendations and Findings

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. 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 implemented effectively—is essential to the process of identifying appropriate strategies and selecting feasible intervention approaches for a specific setting or population.

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 understood clearly, the recommendations presented here and the evidence on applicability in the accompanying evidence review[3] can be used to help select appropriate interventions. Some key considerations in using recommended interventions are noted below.

Choosing Interventions to Meet Community Needs

It is important to consider the characteristics of the target population carefully when considering implementing any intervention, and this need is particularly strong for interventions intended to educate and increase awareness about cancer screening (e.g., one-on-one education, group education, mass media). For example, when baseline screening rates are high, group education or mass media campaigns directed at the general population may not be the most appropriate intervention. Such interventions may be most appropriate when directed at populations or subpopulations with relatively low screening rates, and when their messages are directed at the most relevant issues for the specific group or individual addressed.

Considering the specific characteristics of the target population is also important for implementing appropriate interventions to increase cancer screening by reducing structural barriers. Many options for reducing structural barriers are available, and questions remain about whether some of these approaches are more or less effec-

tive or appropriate for use within specific settings or with specific populations—such as with people who have never been screened or who may be hard to reach for screening. In the absence of such research, specific intervention approaches should be selected and implemented only after careful consideration of the most important barriers to screening for the target population.

Implementing Multiple Interventions

In many situations, it may be appropriate to implement two or more interventions, because a single intervention might not address adequately multiple barriers that contribute to low screening rates within a community or that prevent people from adhering to screening recommendations.

The updated reviews found some evidence that implementing an intervention such as one-on-one education as part of a multicomponent intervention that includes other approaches to increasing cancer screening can provide incremental benefits. Decisions about when to use such a multicomponent approach, and which specific combinations of interventions to implement, should be based not only on the characteristics of the target population and the most important barriers to screening but also on whether adequate resources and infrastructure exist to deliver all components with fidelity.

Considering the Healthcare System Context

Recent changes in healthcare systems are making it increasingly necessary to consider single-component interventions, such as provider assessment and feedback, within a broader context of how care is delivered in a given healthcare system. Some changes, such as increased integration of computerized medical records into practice, may make it easier to implement and sustain such interventions. Further, it is appropriate to consider the role that provider assessment and feedback can play to improve the delivery of recommended cancer screenings in relationship to other elements of the specific healthcare system, such as provider compensation policies.

Although the Task Force found insufficient evidence to determine the effectiveness of provider incentives in increasing cancer screening, many healthcare systems include provider incentives as part of a comprehensive strategy for administration and provider compensation. However, studies of the effects of such strategies were not available for evaluation and thus could not contribute to Task Force findings on their effectiveness.

Additional Information and Assistance

Additional information and assistance in selecting and implementing appropriate interventions to increase cancer screening are available through online tools, such as those available at Cancer Control P.L.A.N.E.T. (cancercontrolplanet.cancer.gov/). Its links provide helpful sources of information for determining cancer control program priorities, identifying potential partners, exploring various intervention approaches, finding research-tested intervention programs and products, and planning and evaluating the intervention program. 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.

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