

Interventions to Increase Cervical Cancer Screening Rates

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The Cochrane Abstract on the next page is a summary of a review from the Cochrane Library. It is accompanied by an interpretation that will help clinicians put evidence into practice. Drs. Hitzeman and Xavier present a clinical scenario and question based on the Cochrane Abstract, followed by an evidence-based answer and a critique of the review. The practice recommendations in this activity are available at <http://www2.cochrane.org/reviews/en/ab002834.html>.



This clinical content conforms to AAFP criteria for evidence-based continuing medical education (EB CME). See CME Quiz on page 440.

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A collection of Cochrane for Clinicians published in *AFP* is available at <http://www.aafp.org/afp/cochrane>.

Clinical Scenario

A community health clinic receives a grant to improve cervical cancer screening rates in the area. Various outreach interventions are proposed to encourage women to be screened.

Clinical Question

Which intervention methods are effective at encouraging women to undergo cervical cancer screening?

Evidence-Based Answer

Invitation letters are the most studied method of encouraging cervical cancer screening, and they are effective (relative risk [RR] = 1.44; 95% confidence interval [CI], 1.24 to 1.52).¹⁻³ Invitation letters may be more cost-effective than more intensive recruitment efforts (e.g., telephone interviews, promotional campaigns). Other educational interventions (e.g., other types of invitations, reminders, counseling) also increase screening rates, but it is unclear which interventions are most effective.¹ (Strength of Recommendation: B, based on inconsistent or limited-quality patient-oriented evidence.)

Practice Pointers

Cervical cancer is diagnosed in more than 500,000 women worldwide each year, and is the fourth leading cause of cancer-related death in women.⁴ It is the second most commonly diagnosed cancer in developing countries and the 10th most commonly diagnosed cancer in developed countries.⁴ After cervical dysplasia becomes cancer, the five-year survival rate is between 60 and 72 percent.¹

Based on long-term epidemiologic data from the United Kingdom, screening 80 women for cervical cancer throughout their lifetimes (every three to five years) will prevent one death.⁵ On average, about 6 percent

of Papanicolaou (Pap) smears are abnormal and require follow-up.⁶ Easy-to-use algorithms for follow-up are available through the American Society for Colposcopy and Cervical Pathology at <http://www.asccp.org/ConsensusGuidelines/tabid/7436/Default.aspx>.

According to a 2009 update of American College of Obstetricians and Gynecologists guidelines, cervical cancer screening should not be initiated until a woman is 21 years of age, regardless of age at first sexual activity.⁷ Screening should be performed every other year until a woman is 30 years of age. Low-risk women may then continue screening every three years thereafter until 65 to 70 years of age. Human papillomavirus (HPV) vaccination status does not affect these recommendations.⁷

Although newer liquid cytology methods reduce the incidence of unsatisfactory samples, improve laboratory efficiency, and allow for optional HPV testing (thus foregoing a second collection), they have not been shown to improve detection of cervical precancerous lesions compared with traditional Pap smears.⁸ Traditional Pap smears or liquid cytology remain acceptable screening options.

Possible barriers to regular cervical cancer screening include access to care, cost, anxiety, embarrassment, and fear. Women who are ethnic minorities or in underserved populations seem to be most affected. Even in developed countries, screening rates could be improved. In a 2003 health survey, 83 percent of U.S. women between 20 and 69 years of age reported being screened in the past three years.⁹

The authors of this Cochrane review examined which outreach interventions are most likely to increase cervical cancer

Cochrane Abstract

Background: Worldwide, cervical cancer is the second most common cancer in women. Increasing the uptake of screening, along with increasing informed choice, is of great importance in controlling this disease through prevention and early detection.

Objectives: To assess the effectiveness of interventions aimed at women, and to increase the uptake, including informed uptake, of cervical cancer screening.

Search Strategy: The authors searched the Cochrane Gynaecological Cancer Group Trials Register, Cochrane Central Register of Controlled Trials (CENTRAL; Issue 1, 2009), Medline, EMBASE, and LILACS databases up to March 2009. The authors also searched registers of clinical trials, abstracts of scientific meetings, and reference lists of included studies, and contacted experts in the field.

Selection Criteria: Randomized controlled trials of interventions to increase uptake/informed uptake of cervical cancer screening.

Data Collection and Analysis: Two review authors independently abstracted data and assessed risk of bias. Where possible, the data were synthesized in a meta-analysis.

Main Results: Thirty-eight trials met the authors' inclusion criteria. These trials assessed the effectiveness of invitational and educational interventions, counseling, risk factor assessment, and procedural interventions. Heterogeneity between trials limited statistical pooling of data. Overall, however, invitations appear to be effective methods of increasing uptake. In addition, there is limited evidence to support the use of educational materials. Secondary outcomes including cost data were incompletely documented, so evidence is limited. Most trials were at moderate risk of bias. Informed uptake of cervical cancer screening was not reported in any trials.

Authors' Conclusions: There is evidence to support the use of invitation letters to increase the uptake of cervical cancer screening. There is limited evidence to support educational interventions, but it is unclear what format is most effective. The majority of the studies are from developed countries, so the relevance to developing countries is unclear.



These summaries have been derived from Cochrane reviews published in the Cochrane Database of Systematic Reviews in the Cochrane Library. Their content has, as far as possible, been checked with the authors of the original reviews, but the summaries should not be regarded as an official product of the Cochrane Collaboration; minor editing changes have been made to the text (<http://www.cochrane.org>).

screening rates. Of the 38 studies analyzed (most of them in developed countries), invitation letters for screening were sent to nearly 100,000 patients and were effective compared with the control group (RR = 1.44; 95% CI, 1.24 to 1.52).¹ Face-to-face education (RR = 2.33; 95% CI, 1.04 to 5.23) and group education (RR = 1.92; 95% CI, 1.24 to 2.97) were also found to be effective.¹ Two studies demonstrated that layperson outreach to Chinese American and Vietnamese American populations was effective. However, it remains difficult to draw general conclusions from studies in different populations and countries with different health care delivery systems. Previous meta-analyses addressing cervical cancer screening have shown reminder letters to be useful, especially when coupled with a fixed appointment.^{2,3}

Only one study in this review was conducted in a developing country (South Africa).¹ The authors recommend conducting more cost-effectiveness analyses and more studies examining women's decision-making process and informed consent for screening.¹ Also, the potential for electronic health records and patient registries to increase cervical cancer screening rates has not been adequately studied.

The Patient Protection and Affordable Care Act of 2010 requires first-dollar coverage for all U.S. Preventive Services Task Force "A" and "B" recommended services, which include cervical cancer screening for women younger than 65 years. The Institute of Medicine released a report on clinical preventive services for

women, which includes a focus on improving cervical cancer screening rates. The report also recommends coverage for HPV testing in addition to cytology in women 30 years and older with a normal Pap smear result.¹⁰

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Cochrane Briefs

Antiretroviral Therapy to Prevent Transmission in HIV-Discordant Couples

Clinical Question

Does providing antiretroviral therapy to a person with human immunodeficiency virus (HIV) infection prevent transmission of HIV to a sex partner without infection?

Evidence-Based Answer

Rates of HIV transmission are at least three times lower in HIV-discordant couples in which the partner with infection is receiving antiretroviral therapy, compared with HIV-discordant couples in which the partner with infection is not receiving therapy. Among HIV-discordant couples in which the infected partner has a CD4 cell count of 350 to 550 per mm³ (0.35 to 0.55 × 10⁹ per L), evidence suggests that treating the infected partner with antiretroviral drugs confers a statistically significant decrease in the risk of transmission to the uninfected partner. (Strength of Recommendation: A, based on consistent, good-quality patient-oriented evidence.)

Practice Pointers

The World Health Organization recommends antiretroviral therapy for persons with HIV infection and a CD4 cell count of 350 per mm³ or less.¹ Higher HIV viral loads are associated with increased risk of transmission. Providing antiretroviral therapy in pregnancy has been shown to reduce the risk of mother-to-child transmission.² Observational data, ecologic studies, and ecologic models suggest that providing antiretroviral therapy to persons with HIV infection whose sex partner is not infected might decrease the risk of

transmission to the uninfected partner. Because antiretroviral therapy is recommended for those with a CD4 cell count of 350 per mm³ or less, this Cochrane review examined whether providing antiretroviral therapy to those with a CD4 cell count greater than 350 per mm³ could reduce the risk of HIV transmission among HIV-discordant couples.

The review included one randomized controlled trial and seven observational cohort studies. These studies included heterosexual and homosexual male HIV-discordant couples. Only studies that included a treatment group and a control group were included.

The randomized controlled, multicenter trial enrolled 1,763 HIV-discordant heterosexual and male homosexual couples in sub-Saharan Africa, Asia, Latin America, and the United States.³ All patients with HIV infection had a CD4 cell count of 350 to 550 per mm³ at baseline. In this trial, antiretroviral treatment of the HIV-infected partner substantially decreased transmission rates, yielding a hazard ratio of 0.04 (95% confidence interval, 0.01 to 0.27).³ In a subgroup analysis of two observational studies from the Cochrane review that included persons with a CD4 cell count of 350 per mm³ or greater, HIV transmission occurred in 61 untreated couples compared with none of the treated couples.

Antiretroviral therapy reduces transmission among HIV-discordant couples, and this randomized controlled trial confirms that this benefit also occurs in couples in which the partner with HIV infection has a CD4 cell count of 350 to 550 per mm³.

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