Authors' objectives
To determine the effectiveness of community-based strategies to increase women's participation in cervical cancer screening.

Searching
MEDLINE, Current Contents, CINAHL, HealthSTAR, EMBASE, PsycINFO, Sociological Abstracts and the Cochrane Library were searched from 1989 to September 1999. Nine journals (named) were handsearched (1994 to 1999). The reference lists of included studies were screened and experts were contacted for further published studies. Studies published in English and French were included. Unpublished studies in English were retrieved through contact with experts, searches of theses in the Dissertation Abstracts database, and a search of the Public Health Effectiveness Database in the Hamilton-Wentworth Regional Social and Public Health Services’ PHRED (Public Health Research Education and Development) programme. Unpublished studies in French were identified through French-language websites and a manual search of DOCUMENSA (1990 to 1999). All search terms were reported.

Study selection
Study designs of evaluations included in the review
Controlled, prospective studies (including one group pre-test and post-test designs) were eligible for inclusion in the review.

Specific interventions included in the review
Studies of any intervention to increase the uptake of cervical screening (and applicable to current public health practice in Canada) including individual, group, or population strategies were eligible for inclusion. Interventions following up abnormal screening results were excluded. The interventions included (single component or combinations of) physician reminder systems, clinic attendance, public education, mass media campaigns, professional education, peer advocate/educator input and outreach work (delivered outside the clinic setting). Other complex interventions (incorporating both breast and cervical cancer screening) were also amongst the included studies. The intensity and duration of the interventions (where reported) ranged from a day up to 2 months annually for 3 years.

Participants included in the review
Studies of women (adolescent and older) and health professionals were eligible for inclusion. Some participants were from disadvantaged or minority groups, but many samples were poorly described. Where reported, the age range of the participants was 18 to 70 years. Intervention providers included research staff, lay peer educators and health professionals. The included studies originated in the USA, Australia, UK and Taiwan.

Outcomes assessed in the review
Studies measuring screening knowledge, attitudes, behaviours, satisfaction and cervical cancer incidence and prevalence were eligible for inclusion. Those measuring only process or health professional knowledge, attitudes or behaviour (other than screening rates) were excluded. The primary outcomes measured were Pap smear rates, knowledge, recall of campaign, intention to be screened, acceptability of the strategy, barriers, cervical and uterine cancer mortality, and ratio of in situ to invasive cancer rates. The outcome measures were not reported in full and their reliability was unclear in many cases. The duration of follow-up (where reported) ranged from 2 months to 3 years.

How were decisions on the relevance of primary studies made?
At least one pair of reviewers independently selected studies for inclusion in the review, using an established tool to make decisions. Any disagreements were resolved by discussion.

Assessment of study quality
An adapted tool designed by the Effective Public Health Practice Project (EPHPP) was used to assess the quality of the included studies, rating them as 'strong', 'moderate' or 'weak' (the criteria were reported). Two independent reviewers performed the quality assessment and resolved any disagreements by discussion, with a third reviewer if necessary. To ensure consistency, one of the reviewers assessed all the included studies.

Data extraction
Two independent reviewers extracted the data, using a tool designed by the EPHPP (details were provided). Any disagreements were resolved by discussion.

Methods of synthesis
How were the studies combined?
The studies were combined in a narrative, according to the primary outcomes listed earlier.

How were differences between studies investigated?
Differences between the studies were discussed in the text and were identifiable in the tables.

Results of the review
Forty-two studies were included in the review. It was not possible to determine the total number of participants, as some studies were population-based. The sample sizes of individual studies ranged from 200 to 400 participants per study group. There were 2 randomised controlled trials, 10 controlled clinical trials, 11 (two group pre and post) cohort studies, 13 (one group pre and post) cohort studies and 6 interrupted time series.

Quality.
Of the 42 included studies, one was rated as 'strong', 18 as 'moderate' and 23 as 'weak'. The authors reported only the results from 19 studies classed as 'strong' or 'moderate' quality. Five of these reported a theory-base (details of the models were reported). The intensity and duration of the interventions was not always clear and participant characteristics were not described in all studies. The influence of secular trends and control group contamination were noted as threats to intervention integrity.

Pap smear rates.
Twelve of the 17 studies measuring Pap smear rates found statistically significant improvements. Those highlighted included one study (rated 'strong') comparing reminder letters, clinic attendance and personalised letters from a family physician (FP), in which the latter produced a significantly higher rate (net difference 12%) than the other groups (p=0.012). Other studies reported significant improvements using an education video (p<0.001); a TV advertisement combined with FP education (p<0.0001); a mass media campaign combined with FP education (p<0.05); individual education plus media, FP education and clinics (significance not reported); and an outreach/inreach programme delivered over 4 years (p=0.004).

Other outcomes.
Three studies of media-based interventions claimed significant improvements in knowledge, (in 1 study, the odds ratio was 1.54, 95% confidence interval: 1.08, 2.20). Campaign recall ranged from 27 to 78% in 8 studies evaluating mass media campaigns, and the extent of effectiveness was linked to complexity of the assessment method. One study using inreach and outreach methods found a statistically significant decrease in perceived barriers compared with a no-intervention control group (55% versus 29%, p<0.05). A significant improvement for in situ to invasive cancer rates was found in a study focusing on a community campaign and free clinics (p=0.05), although causal mechanisms were unclear and sustainability of the programme was deemed vital to continued success. Results on the acceptability of strategies were not reported, and other outcomes were either not statistically significant or unclear.

Authors' conclusions
Programmes that were theory-based, combining mass media campaigns with direct tailored interventions to women and providers, whilst being sensitive to system and cultural factors, were likely to be most effective in increasing participation in cervical screening.

CRD commentary
The review question was well-defined and supported by clear inclusion criteria for the participants, interventions, outcomes and study design. The search strategy was comprehensive and efforts to reduce bias were evident from the inclusion of both published and unpublished studies in a second language. Quality was assessed using an appropriate tool and the results of this assessment were used to structure the review findings. Good attempts were made to extract relevant data from the primary studies. The entire review process was conducted in a reliable and transparent manner. The authors acknowledged the impact of various methodological and reporting weaknesses in the included studies on the review findings. The conclusions reflect the evidence presented and are likely to be reliable. The authors’ recommendations for future research appear appropriate.

Implications of the review for practice and research
Practice: The authors stated that the combined use of mass media campaigns and provider education with personal reminder letters within the target population should be considered. In addition, future initiatives should explore the use of lay health educators to work with minority or new immigrant groups. Support and ongoing training for the provider, along with an evaluation of effectiveness and adequate resources for implementation, are also necessary.

Research: The authors stated that the provincial centralised cytology database should be used in future to determine baseline measures of screening rates. In addition, more methodologically rigorous, theory-based evaluation, including qualitative research to explore non-response to interventions, is needed.

Funding
Ontario Ministry of Health, Public Health Branch, PHRED Program.

Bibliographic details

Original Paper URL
http://old.hamilton.ca/phcs/ephpp/Research/Full-Reviews/CXCA-Review.pdf

Other publications of related interest

Indexing Status
Subject indexing assigned by CRD

MeSH
Female; Mass Screening; Uterine Cervical Neoplasms /diagnosis /prevention & control

AccessionNumber
12003008485
Date bibliographic record published
31/01/2008

Date abstract record published
31/01/2008

Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.