Seasonal influenza vaccination campaigns for health care personnel: systematic review
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CRD summary
Campaigns that involved only education or promotion resulted in minimal changes in vaccination rate, gaps in the literature meant that further research was required. The authors’ conclusions cannot be considered wholly reliable because no synthesis of results was reported; recommendations for further research are justified by the variable quality of the evidence.

Authors’ objectives
To determine which influenza vaccination campaign or campaign components were associated with significantly higher rates of influenza vaccination in health care personnel.

Searching
CINAHL was searched to April 2008 and seven other databases searched until September 2009 (search terms were reported). No data or language restrictions were applied. Bibliographies of relevant reports were handsearched to locate further studies and infection control experts were consulted.

Study selection
Eligible studies were randomised controlled trials, controlled before-and-after studies or time series studies that evaluated influenza vaccination campaigns for health care personnel. To be included, studies had to report the number or percentage of personnel who received the influenza vaccine. Campaigns were defined as any organised efforts to promote increased vaccination coverage among health care personnel. Exclusion criteria included lack of description of the study population, lack of reporting for ascertainment of vaccination status, and involvement of other vaccines.

Participants included physicians, nurses, nursing assistants, technicians, housekeeping staff, administrators, medical residents, volunteers and other professionals. Campaign components varied greatly, and included educative materials and information sessions, promotional materials, improved access to the vaccine, and mandatory tasks (e.g., masks for unvaccinated workers). Some included studies did not report how vaccination status was ascertained.

The authors did not state how many reviewers were involved in study selection.

Assessment of study quality
Study quality was assessed using Cochrane criteria, according to study descriptions of allocation concealment, methods for ascertainment of vaccination status, baseline comparability of participant groups, and follow-up duration. Each study design had its own assessment criteria. Criteria were marked as done, not done or not clear.

Two reviewers independently performed the quality assessment; the authors did not state how discrepancies were resolved.

Data extraction
Numbers of staff members who received the influenza vaccine were extracted to calculate risk ratios with 95% confidence intervals (CIs).

Two reviewers independently extracted the data; discrepancies were resolved through discussion and consensus.

Methods of synthesis
The risk ratios for ten of the twelve included studies were presented in a forest plot, stratified by setting (hospital or non-hospital) and campaign components. The remaining two (interrupted time series) studies were descriptively summarised in the text. The studies were not statistically pooled in a meta-analysis, so statistical heterogeneity between studies was not reported.

Results of the review
Twelve studies were included in the review (exact number of participants unclear): four cluster RCTs; two RCTs; four before-and-after studies with controls; and two interrupted time series studies. Among the RCTs, five reported allocation concealment, four protected against contamination by using study sites as the unit of allocation, two compared measures between groups at baseline, one reported a reliable method of ascertaining vaccination status and none reported any follow-up with participants. Three before-and-after studies reported comparison of measures between groups at baseline, but none reported follow-up with participants or a reliable method of ascertaining vaccination status. The two time series studies reported few methodological details.

In non-hospital settings, the highest rate of influenza vaccine uptake was found in the second year of a cluster RCT's campaign that involved education, improved access to the vaccine, legislation and role models (RR 8.05, 95% CI 6.30 to 10.30). Other high vaccination rates were associated with a before-and-after study (RR 2.43, 95% CI 1.33 to 4.41) and a cluster RCT (RR 2.16, 95% CI 1.96 to 2.39), both conducting campaigns with education and improved access components.

In hospital settings, the three highest rates of vaccine uptake were reported by a RCT with education or promotional campaign components, administered by a letter (RR 2.71, 95% CI 1.53 to 4.81) or a phone call (RR 1.78, 95% CI 0.80 to 3.96), and a before-and-after study with education or promotion plus improved access campaign components (RR 1.64, 95% CI 1.49 to 1.80).

For the two interrupted series studies, campaign components included legislation or regulation components; these included a mandatory electronic declination form for one study (vaccine uptake rate rose to 55%; previous range in previous nine years had been 21% to 38%) and a mandatory requirement for all unvaccinated health care staff to wear masks in the other study (vaccine uptake rate rose from 33% to 52%).

Authors' conclusions
Campaigns that involved only education or promotion resulted in minimal changes in vaccination rate. Gaps in the literature meant that further research was required.

CRD commentary
The review question was clear and inclusion criteria seemed sufficient for replication. A large range of data sources were searched, which potentially reduced publication bias though this wasn't assessed. Efforts to minimise language bias were made. Attempts were made to reduce error and bias during data extraction and quality assessment; however it was not clear if this was also true for the selection of studies. The quality assessment tool seemed appropriate for the studies included, results were variable. Study characteristics were presented but no synthesis of results from individual studies was reported. Instead, the authors described the evidence without reaching a conclusion about the relative influence of different campaigns or campaign components on vaccine uptake. The authors' conclusions cannot be considered wholly reliable because no synthesis of results was reported; recommendations for further research are justified by the variable quality of the evidence.

Implications of the review for practice and research
Practice: The authors did not state any implications for further practice.

Research: The authors stated that rigorously designed studies were required to assess the effect of various campaign component designs on influenza vaccination of health care personnel.

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Bibliographic details

PubMedID
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.