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Promoting uptake of influenza vaccination among health care workers: a randomized controlled trial

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Summary

In a randomized controlled trial, an intensive promotional campaign failed to increase the uptake of vaccination against influenza among health care workers. The uptake of vaccination was low.

Keywords: influenza, vaccination, health care workers, health promotion, workplace, randomized controlled trial

Introduction

Vaccination of health care workers (HCW) against influenza reduces absenteeism, and, on long-term care wards, a high uptake of vaccination by HCW has been followed by a significant reduction in patient mortality.[1–3] In the United States, the Centers for Disease Control and Prevention advocate routine vaccination of HCW, but, in the United Kingdom, the Joint Committee for Vaccination and Immunization believes there is currently insufficient evidence on which to base a clear recommendation.[4,5] In 2000, however, employers were encouraged to offer vaccination to National Health Service (NHS) and social care staff as part of winter planning initiatives.[6] In a randomized controlled trial, we evaluated the effectiveness of an intervention designed to promote uptake of influenza vaccination in HCW in nursing homes and in primary care.

Methods

As part of an influenza vaccination campaign launched on 1 October 1999, all HCW in primary health care teams (PHCT) and nursing homes (NH) in Bury and Rochdale Health Authority (HA) were offered free vaccination from their general practitioner (GP). The offer was made in a letter from the Consultant in Communicable Disease Control, which set out the benefits of vaccination in reducing illness and staff absenteeism; posters were used to reinforce this message. Worksites were then stratified into PHCT and NH, and randomized within strata: those worksites allocated to the intervention group were visited by a public health nurse, who raised awareness of the campaign, emphasized the efficacy and safety of vaccination, outlined the possible side effects and contraindications, discussed the impact of influenza on absenteeism, and attempted to allay anxiety and to correct misconceptions. The public health nurse also disseminated promotional materials and informed staff where they could obtain vaccination free of charge. PHCT and NH in the control group did not receive a visit. All GPs were informed by the Health Authority that they would be reimbursed for vaccinating any HCW and claim forms were subsequently used to identify HCW vaccinated in October and November. We attempted to maximize ascertainment of vaccinated HCW by contacting GPs, practice nurses and practice managers on two occasions to remind them that reimbursement could be claimed for HCW vaccinated by their practice and advising them on how this could be secured. When practices informed us that they had vaccinated HCW but no claim forms had been received, these practices were given a further reminder.

The rate of uptake of vaccination was compared between study groups using a χ^2 statistic adjusted for the cluster randomized design.[7,8] The trial was approved by the local research ethics committee.

Results

For both PHCT and NH, staff mix was similar in the intervention and control groups (Table). The participant flow is shown in the Figure. A total of 457 HCW in 30 PHCT were allocated to the intervention group and 395 HCW in 32 PHCT to the control

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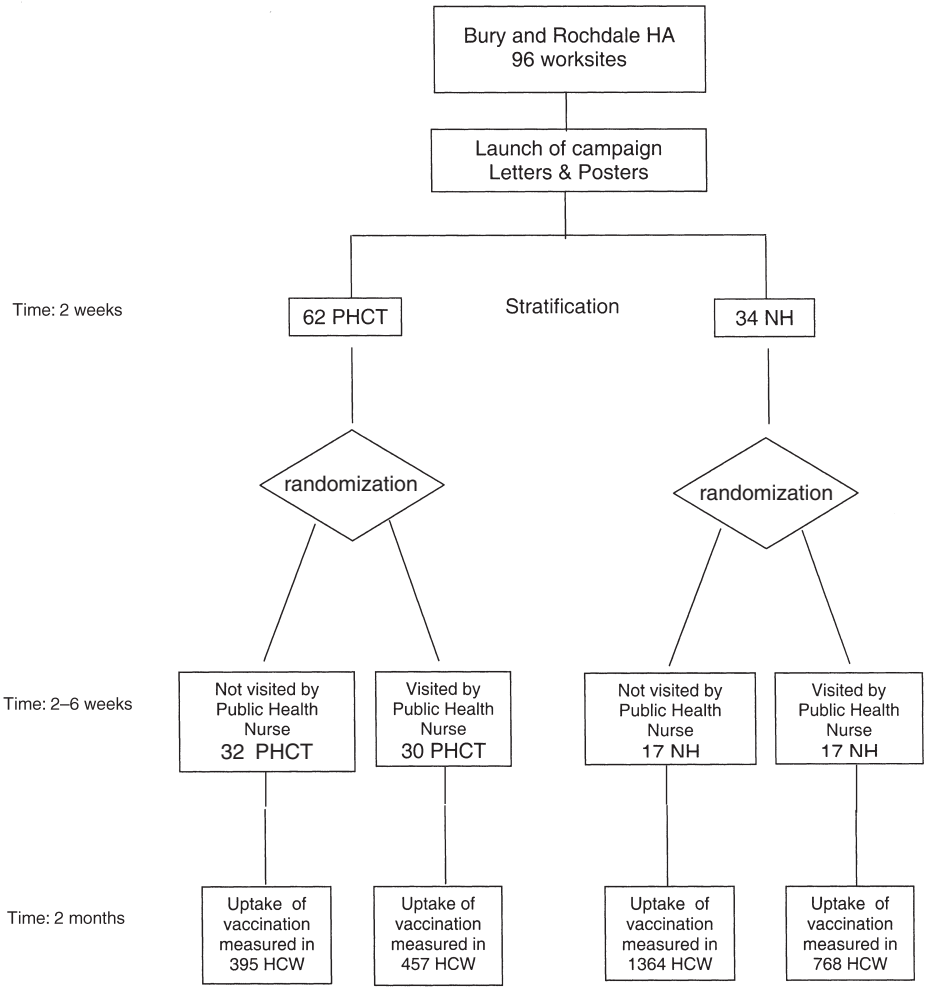

Figure Participant flow.

group. One hundred (21.9 per cent) HCW in the intervention group were vaccinated compared with 83 (21.0 per cent) in the control group; this difference was not significant [$\chi^2 = 0.01$; 1 df; $p = 0.91$; 95 per cent confidence interval (CI) for difference in proportion –13.7 to 15.5; intra-cluster correlation coefficient = 0.364]. A total of 768 HCW in 17 NH were allocated to the intervention group and 1364 HCW in 17 NH to the control group. Seventy-eight (10.2 per cent) HCW in the intervention group were vaccinated compared with 77 (5.6 per cent) in the control group; this difference was not significant ($\chi^2 = 0.90$; 1 df; $p = 0.34$; 95 per cent CI for difference in proportion –4.8 to 13.8; intra-cluster correlation coefficient = 0.155). This study had 80 per cent power at the 5 per cent two-sided significance level to detect a difference of at least 20 per cent between the intervention and control groups in each community setting.

Discussion

Although vaccination was free, uptake rates were poor and the more intensive promotional campaign had little effect. However, even lower uptake rates have been reported for two acute NHS Trusts in this health authority and in other settings in the United Kingdom.[9,10] Similar rates have been reported in the United States, where concern over litigation following nosocomial infection provides an additional incentive for vaccination.[11,12] High uptake rates in the United Kingdom have been achieved only in experimental settings when frontline staff working in high-risk departments have been offered vaccination by dedicated vaccine nurses sited in clinical areas.[3]

The low uptake of vaccination in this trial prompted an appraisal of attitudes to and knowledge of vaccination among HCW. A survey of a random sample of 375 HCW in PHCT undertaken 6 months after the trial had a response rate of 74 per cent. Over 90 per cent of those responding were aware that flu was a serious illness, that they were at risk and that vaccination was safe. Eighty-eight per cent understood that vaccination was not totally effective.

Influenza is usually a self-limiting illness in healthy adults. In the United Kingdom, HCW are offered vaccination not because they are at increased risk of the serious sequelae of influenza but

Table Baseline characteristics and uptake of influenza vaccination among health care workers (HCW) in primary health care teams (PHCT) and nursing homes (NH); numbers, with percentages given in parentheses

	Control		Intervention	
HCW employed in PHCT	395		457	
Category of staff				
Doctor	100	(25.3)	112	(24.6)
Nurse	50	(12.7)	59	(13.0)
Admin/ancillary	245	(62.0)	284	(62.4)
Not known	0		2	
Uptake of vaccination	83	(21.0)	100	(21.9)
HCW employed in NH	1364		768	
Category of staff				
Nurse	861	(68.7)	561	(73.0)
Admin/ancillary	393	(31.3)	207	(27.0)
Not known*	110		0	
Uptake of vaccination	77	(5.6)	78	(10.2)

*Details of category of staff were not disclosed by two NH.

because of the need to maintain the operational efficiency of the NHS during the winter, when it is under most pressure. It is unlikely, then, that simple educational campaigns based on the health belief model will be sufficient to change HCW behaviour. Strategies that address both the individual and organizational influences on health behaviour may be more successful, but these need to be evaluated.[13]

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