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BRIEF REPORTS

"Bird in the hand" cash was more effective than prize draws in increasing physician questionnaire response

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Abstract

Objective: To investigate the effects of two monetary incentives on response rates to postal questionnaires from primary care physicians (PCPs).

Study Design and Setting: The PCPs were randomized into three arms ($n = 550$ per arm), namely (1) €5 sent with the questionnaire (cash); (2) entry into a draw on return of completed questionnaire (prize); or (3) no incentive. Effects of incentives on response rates and item nonresponse were examined, as was cost-effectiveness.

Results: Response rates were significantly higher in the cash (66.1%; 95% confidence interval [CI]: 61.9, 70.4%) and prize arms (44.8%; 95% CI: 40.1, 49.3%) compared with the no-incentive arm (39.9%; 95% CI: 35.4, 44.3%). Adjusted relative risk of response was 1.17 (95% CI: 1.02, 1.35) and 1.68 (95% CI: 1.48, 1.91) in the prize and cash arms, respectively, compared with the no-incentive group. Costs per completed questionnaire were €9.85, €11.15, and €6.31 for the cash, prize, and no-incentive arms, respectively. Compared with the no-incentive arm, costs per additional questionnaire returned in the cash and prize arms were €14.72 and €37.20, respectively.

Conclusion: Both a modest cash incentive and entry into a prize draw were effective in increasing response rates. The cash incentive was most effective and the most cost-effective. Where it is important to maximize response, a modest cash incentive may be cost-effective.

Keywords: Monetary incentives; Cash; Draw; Physicians; Postal questionnaire; Primary care'

1. Introduction

Surveys of primary care physicians (PCPs) are used in many areas of health services and policy research. However, response rates to PCP surveys can be low [1] owing to lack of time, perceived importance of studies, concerns about confidentiality, biased questions, and increasing volume and length of surveys [2,3]. This may introduce bias and affect generalizability of the results. Dilman's Tailored Design Method (TDM) advises on questionnaire format and implementation [4] and recommends token financial incentives [5]. A range of incentives, both monetary (eg, cash or lottery tickets) and nonmonetary (eg, pens or pencils) incentives have been shown to be effective in increasing response rates to postal questionnaires in health settings (reviews and references therein Refs. [6–10]). However, little is known about the most effective interventions among PCP surveys, and optimum monetary incentives within this group remain unknown [7,8]. Furthermore, many of these studies involved a mix of health care professionals and were conducted in the United States with some exceptions in China, Australia, and Britain and may not be generalizable to other health care systems [6–10].

We conducted a randomized controlled trial to compare the effect on response to a PCP postal survey, and the cost, of the three scenarios, namely (1) a modest direct cash incentive, (2) a small monetary incentive through inclusion in a prize draw on receipt of completed questionnaires, and (3) no incentive.

2. Methods

2.1. Design

This trial was conducted within the context of a postal questionnaire of PCPs' practice and costs in relation to prostate-specific antigen (PSA) testing in Ireland,

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What is new?

Key findings

- Two modest monetary incentives, €5 cash sent with the questionnaire and entry into a draw on questionnaire completion, produced significantly higher response rates over the no-incentive arm; the cash incentive was the most effective and the most cost-effective—costing less per completed questionnaire received.

What this adds to what was known?

- Monetary incentives are known to increase the response rates of surveys to physicians. However, optimum use of monetary incentives remains unresolved. We directly compared two modest monetary incentives—an immediate cash incentive and possible financial gain through entry into a draw, and demonstrated that both significantly increased response rates from primary care physicians, with cash being the most effective and cost-effective option.

What is the implication and what should change now?

- Where maximum response is required, a cash incentive should be considered.

distributed during July–August 2012. This was a 20-item survey over two pages, seeking information on PCP demographics, training, practice size and mix (percentage of adults, males, and public and private patients), PSA testing policy, practice, and guidelines used to inform practice. Information was sought on costs (including consultation cost for PCPs and practice nurses, length of consultations, and costs of PSA tests). Ireland has a mixed public/private health system in which PCPs are self-employed. Private patients pay €50–60 per visit to PCPs. Patients with medical cards (~30% of population) receive free care and PCPs are reimbursed a flat fee per patient by the Health Service Executive.

The sampling frame used was a list of all PCPs thought to be practicing in Ireland, established in the National Cancer Registry, as previously described [11] and which has been updated periodically ($n = 3{,}903$). To ensure a representative spread of PCPs, a random sample of 1,650 PCPs was chosen, stratified by practice area. The PCPs were randomized into one of the trial arms. A total of 550 PCPs per arm was estimated to provide 80% power to detect an 8% difference in response between an incentive arm and the no-incentive arm, assuming 30% response in the no-incentive arm (two-sided test, $\alpha = 0.05$).

With their questionnaire, PCPs received (1) €5 and a cover letter stating that this was a token of appreciation (“cash” arm); (2) a cover letter stating that they would be entered into a draw for one of three €300 vouchers, with a 1-in-50 chance of winning, on return of completed questionnaire (“prize” arm); or (3) a cover letter (“no-incentive” arm; Fig. 1).

This trial was performed against a background of the TDM [4,5]; PCPs received personalized letters on University-headed paper and questionnaires were printed with colored ink on colored paper. Prepaid preaddressed envelopes for questionnaire return were included with each mailing. Up to two written reminders were sent to nonresponders at approximately two weekly intervals with another questionnaire in the second reminder. Both reminder letters to the “prize” arm mentioned the incentive. No reference to the €5 was made in reminder letters to the “cash” arm.

Approval was obtained from the Irish College of General Practitioners Ethics Committee.

2.2. Statistical analysis

The primary outcome was the cumulative proportion of completed questionnaires returned. Factors associated with response (graduation year, gender, health board area, and percentage of patients with medical cards) were investigated by poisson regression with robust error variance [12]. Response rates between arms were compared using univariate and multivariate poisson regression with robust error variance. Respondents for whom covariate information was missing were excluded from multivariate analyses. Covariates included in the final multivariable model were gender, graduation year, and health board.

Cost per completed questionnaire received was calculated by totalling costs of stationary (headed paper, printed envelopes, colored paper, and questionnaire printing), letter printing, postage, and incentive costs, but excluded staff costs for administration and data entry. Approximately 18.5% ($n = 102$) of the PCPs returned the €5 with their questionnaire, this was subtracted from the cost of the “cash” arm. Cost per additional questionnaire returned was calculated by dividing the difference in total cost between two incentive groups by the difference in response between the two groups.

After questionnaire dispatch, PCPs who died, retired, relocated (and no forwarding address was available), and those without male patients aged 40 years and older ($n = 223$) were deemed ineligible and removed from the denominator of the relevant arm. After dispatch of the reminders, six (0.4%) PCPs, two from each arm, reported that they had returned their questionnaire although these were not received; these were categorized as “missing” and excluded from the analysis (Fig. 1).

3. Results

The overall response rate was 50% (716/1,421). The PCPs who graduated post-1970, practiced outside the