The Costs of Using Pre-Paid Incentives in a Physician Survey

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Introduction

Cash incentives are a common feature in survey research; yet, their utility and the ethics surrounding use of incentives is in controversy. Some literature has explored the ethical and practical implications of using incentives in survey research as it relates to response rates (James & Bolstein 1992[i]; Armstrong, 1975[ii]; Sheatsley & Loft 1981[iii]; and Singer et al. 1999[iv]). The effects of incentive use have been measured by the quality of responses and representativeness of the final data set (Tambor et al. 1993[v]) and the promptness with which respondents complete a survey (Berry and Kanouse 1987[vi]). What is less widely discussed in the literature is the practical cost implications of using incentives in survey research. This is a significant gap in knowledge for managers of research projects who hope that a cash incentive will stimulate response. This paper discusses two things. First is a discussion of who accepts pre-paid monetary incentive and the second is the cost implications associated with using pre-paid cash incentive in a federally-sponsored survey of physicians. These discussions have practical value. Survey managers need to anticipate the financial risk they accept when considering the use of pre-paid incentives. In addition, analysis of this sort provides useful insights for identifying which medical specialties are most inclined to respond favorably toward financial incentive.

To examine issues related to the use of incentives, results of a federally-funded survey of physicians is used. Sponsored by the Centers for Medicare & Medicaid Services, the Physician Assessment of Hospital Quality Reports survey was administered during the first quarter of 2006. Respondents were a stratified, random sample of 1728 office-based physicians in the United States. A 62% response rate was achieved among eligible sample members. The survey was self-administered by mail, or through a password-protected web site. A few physicians responded to the survey by

telephone. More than half (56 percent) of the $25 incentive checks that were mailed went without being cashed. Some non-respondents cashed checks, while most did not. This case suggests that pre-paid incentives place a survey project at minimal risk of having incentive checks cashed by non-participants and ineligible participants. Rather, the failure of many respondents to cash checks more than offset the expenses associated with non-respondents and ineligible respondents who received funds.

Background

Incentives have been considered from at least three broad perspectives. One, incentives have been justified from a scientific perspective. Research has attempted to measure the effects of various incentive strategies on response rates and data quality. For example Dillman (1978), Gunn & Rhodes (1981[vii]), and Kellerman & Herold (2001) suggest that incentives improve responsiveness. Others have found that incentives have a negligible effect on survey response rates (for example Cycyota and Harrison 2002[viii]; and Cantor et al. 1997[ix]). Experimental designs indicate that response rates tend to increase with the value of the incentive. Gunn & Rhodes (1981) tested the effects of $0, $25 and $50 incentives to a sample of primary-care physicians and found that responsiveness increased with the payments. They noted that response rates varied across subspecialties, with pediatricians being responsive regardless of the value of an incentive and the level of cooperation from family physicians responding to the value of the payment. Similarly Mizes et al. tested $0, $1 and $5 gifts on a survey of 200 physicians (1984[x]). They too concluded that the responsiveness increased with the value of incentives.

Second, the ethical implications of incentives have been considered as either a form of reciprocity (Gendall et al. 1998[xi]) and acknowledgement of the psychological and time burdens placed on respondents (Kulka 1999[xii]). The discussion over the ethics and efficacy of incentives affects current understanding of best practices in surveys of general populations (Edwards 1999[xiii]) and surveys of experts in their career fields as well (for example DeNelvo et al. 2004[xiv], Doody et al. 2003[xv]). The discussion over the use of incentives seems to be turning on the issue of the positive effects on response

rates, and finding that incentives have only a negligible effect on the quality of responses (see for example Singer et al 1999). A related concern is the civic duty of respondents, especially professionals, to participate in policy-oriented research when asked to do so (Kulka).

A third point of view is the consideration of the costs of either paying an incentive or conducting time-consuming follow through to raise responsiveness. A 1993 General Services Administration (GSA) symposium on federal survey research indicated wide belief that in many situations the application of cash incentives can reduce overall production costs (GSA 1993[xvi]). At the same time, it was acknowledged that there is little empirical research to support the claim. This symposium may have inspired some discussion of the costs and benefits of incentive timing and value. Recent work in this area seems to conclude that pre-payment does improve responsiveness and helps reduce overall survey administration costs by reducing the need for mail and telephone follow-up contact.

In one of the few studies of this kind, Berry & Kanouse (1987) suggest that pre-paid incentives improve early responsiveness of physicians and resulted in a cost savings of just more than $1.50 per completed interview. The cost savings were associated with reduced postage and printing needed for follow-up with later respondents. This savings came despite the fact that a small portion of non-respondents cashed the pre-paid incentive checks. In a study of radiology technologists, Doody et al. (2003) concluded that cash incentives reduce overall survey administration costs and improved response rates. Berry & Kanouse said they did not find significant differences in the extent to which various medical specialists accepted checks, or the rate of completion. So the optimal level of incentive payment is not firmly established.

Berry and Kanouse (1987) examined the effects of timing incentive payments to physician respondents. Using a split-sample design, about half of the 2147 physicians sampled were randomly assigned to a group that was offered a $20 incentive upon completion while the balance was assigned to a group whose members would be paid

upfront. They found that response rates were about 12 percent higher among those given payment upfront versus those promised payment upon completion. While recording changes in response rates for a broad category of physicians, they did not report which specialties ultimately cashed their incentive checks. Similarly, Mizes et al. did not report level of check cashing, or which groups of physicians were most apt to cash an incentive check.

Methods

Sampling*:* A stratified random sample of 1728 physicians practicing in offices from all 50 of the United States was selected for this study. Physicians were stratified by specialty, urban and non-urban practice setting and Census region of the United States. The sampled medical specialties included family and general practice, internal medicine, and cardiology, so that we began with equal numbers (576) of each. Urbanicity was defined by whether the sampled physician's office ZIP code is in a metropolitan statistical area or non-metropolitan statistical area. The Census regions used are East, Midwest, South and West. This stratification yielded a total of 24 cells populated by 72 sampled physicians per cell. The SK&A Information Office Based Physician file was used to draw the sample for this study.

During contact we learned that several sampled physicians were outside the scope of the study because they had retired, left office-based practice (i.e. assumed exclusively administrative or research roles), could not be reached or were away during the study period (i.e. medical leave or military activation). Consequently, we worked with a sample of 1630. The response rate among eligible sample members was 63.3 percent.

Data collection*:* Data for this study were collected by RTI-International on behalf of the Centers for Medicare and Medicaid Services, a division of the U.S. Department of Health and Human Services. Data were acquired through the internet, by mail, over the telephone and by fax. This included a five wave mailing, telephone prompting and a final round of out-bound contact made by facsimile. All mailings were made using

agency stationery and bore the signature of the agency's chief medical officer. The first wave mailing was sent at the end of the first week of January 2006. It was a personally addressed advance letter. It informed the respondent of the sponsorship and purpose of the study; it mentioned that the study had been endorsed by three medical societies (American Academy of Family Physicians, the American College of Cardiology or the American College of Physicians); it mentioned that an incentive would be offered and assured the respondent of confidentiality.

The second wave mailing was sent three business days later, with the survey materials and a $25 check. The packages included a cover letter, instructions for using the on-line version of the questionnaire, a copy of an endorsement letter from a relevant medical society, inserts to orient the physician to certain items on the survey, and an 8-page survey. These same materials were sent again during the sixth, tenth and twelfth weeks of data collection. A reminder post card was sent during the third week of data collection.

Prompting calls were made during the fourth and fifth weeks of data collection. Up to four calls were placed to the offices of those sampled physicians who had not responded. Messages were left with receptionists, nurses and voice mail systems if the physician was unable to come to the phone at the time of our call. If asked, we completed the survey over the phone.

Both the mail and phone contacts turned up instances where a phone number or address was obsolete. Wherever possible these contacts were used to learn new forwarding mail addresses or the whereabouts or practice status of a sample member. The data set was updated and appropriate follow up was undertaken.

Results

Of the original 1727 sampled physicians, 78 (4.5 percent) were found to be ineligible. This level of ineligibility is commensurate with recent studies of this kind (see for example Hershey et al. 2003[xvii]; and Szilagyi et al. 2005[xviii]) and much lower than

others (see Klabunde et al. 2003[xix] and DeNelvo et al., 2004). A total of 1027 complete surveys and 17 incomplete surveys were returned, for a total of 1044 or 63%. Another 27 cases were returned without tracking numbers and could not be analyzed for this paper.

A total 753 (44%) of the 1728 incentives distributed were cashed. Table 1 displays who cashed the check by their cooperation. This table indicates that the lion's share of checks was cashed by respondents. Meanwhile, only minorities of non-respondents and ineligibles cashed their checks.

Table 1: Check cashing activity of respondents & non respondents.

Sample Members	Cashed	Not cashed	% cashing
Respondents (including partial)	673	371	64%
Non-respondents	69	537	11.4%
Ineligibles	11	67	14%

Another way of looking at this issue is to examine those who cashed and did not cash to see if they responded, did not respond, refused or were ineligible. Table 2 indicates that almost 90% of those who cashed a check also responded. Less than 9% of the checks cashed were cashed by non-respondents and less than 2% of the checks cashed were cashed on behalf of ineligible respondents. Of those who did not cash a check, more than half (57%) did not respond to the survey. Interestingly, a large minority (35%) of those who did not cash a check did participate in the survey.

Table 2: Check cashing activity by survey participation

Sample members	Responded	Non-respondent	Refused	Ineligible
Cashed (% of those cashing)	673 (89.5%)	66 (8.8%)	1 (0.1%)	13 (1.7%)
Did not cash (% of those not cashing)	344 (35.2%)	554 (56.8%)	17 (1.7%)	61 (6.3%)

Family physicians were most cooperative, with 70% responding. Internists were next, with 69% and cardiologists were least cooperative with 52% response rates. Table 3 summarizes check cashing activity by medical specialty.

Table 3: Check cashing activity by medical specialty

Specialty	Cashed	Not cashed
Family practitioners	281 (48.8%)	295 (51.2)
Internists	278 (48.3%)	298 (51.7%)
Cardiologists	193 (33.5%)	383 (66.5%)

Discussion

The data collected in this survey allow us a glimpse into who accepts incentives and how much financial risk a survey project accepts by offering pre-paid honoraria. More than half of each medical stratum did not cash checks, but response rates exceeded 50 percent in each category and reached as high as 70 percent. Cardiologists are least inclined to cash the incentive check and family practitioners were most inclined to cash checks.

While about 2/3 of the respondents to this survey cashed their checks, virtually all (89%) of the 753 checks that were cashed were cashed by physicians who also responded to the survey. Meanwhile only 11% of the checks cashed were cashed by ineligible or non-responding sample members. In other words, those who do not respond also tend not to cash checks. This suggests that there is a small financial risk to a survey of deploying a pre-paid incentive as part of the strategy. A total of 66 (3.8% of all) checks were cashed, but did not have an associated survey returned with it. The total value of these misdirected checks is $1650. In addition, checks for 13 of the ineligible sample members were cashed, with a value of $325. Combined the misdirected checks are worth $1975. Advance payment of cash incentives, placed a total of 4.6% of the incentive budget at risk of being cashed by non-participants.

This can be balanced against the checks of eligible participants who did not cash the checks. A total of 371 participating respondents chose to forgo the incentive. This

resulted in $9275 in unspent incentive funds. It is important to consider this perspective since a survey manager may consider paying the incentive only after completion. When one subtracts the $1975 value of the checks cashed by non-respondents from the $9275 in unspent incentive money, the project realized a surplus of $7300 in incentive funds.

Berry and Kanouse (1987) indicate that survey administration costs are lower when incentives are used, because less follow-up contact is needed to acquire sufficient response rates. Coupled with this study, one may infer that survey managers can realize additional cost benefits by employing pre-paid cash incentives in a survey of physicians. Rather than placing the project at financial risk, it appears that the use of pre-paid financial incentives yield a cost-savings equal to about 17% of the total budget set aside for monetary incentives.

Conclusion

Pre-paid financial incentives can be a cost-efficient measure in survey research. Though a small number of non-respondents will cash checks, this misdirection of incentive funds can be more than offset by respondents who forgo the cash incentive. There are differences in the medical specialties of physicians who cash checks. Cardiologists seem least inclined to cash incentive checks and family physicians had the highest rate of cashing checks. Meanwhile, family physicians were most inclined to complete the surveys, while cardiologists were least disposed to cooperate. Still, fewer than half of each stratum cashed checks, and more than half completed the surveys.

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