How to obtain excellent response rates when surveying physicians

C Thorpe, B Ryan, SL McLean, A Burt, M Stewart, JB Brown, GJ Reid and S Harris


This paper outlines ways to maximize response rates to surveys by summarizing the most relevant literature to date and demonstrating how these techniques have resulted in consistently high rates of return in family practice research. We describe the methodology used in recent surveys of physicians conducted by the Centre for Studies in Family Medicine through its Thames Valley Family Practice Research Unit, located in London, Ontario, Canada and funded by the Ontario Ministry of Health and Long-Term Care. The identification and implementation of these techniques to maximize response rates is critical, as primary health care researchers often rely on information gathered through questionnaires to study physicians’ practice profiles, experiences and attitudes. Four separate and distinct mailed surveys of physicians using a modified Dillman approach were conducted from 2001 to 2004. The sampling strategies, topics, types of questions and response formats of these surveys varied. The first survey did not use any incentives or recorded delivery/registered mail and received a response rate of 48%. In sharp contrast, the other three surveys obtained responses rates of 76%, 74%, 74%, respectively, achieved through the use of gift certificates and recorded delivery/registered mail. Sending a survey by recorded delivery/registered mail tends to result in the survey package being given priority in the physicians’ incoming mail at the practice. Gift certificates partially compensate physicians for time spent completing the survey and recognition of the time required is appreciated. The response rates achieved provide strong evidence to support the use of monetary incentives and recorded delivery/registered mail (along with the Dillman approach) in survey research. It is anticipated that this evidence will be used by other researchers to justify requests for funding to cover the costs associated with incentives and recorded delivery/registered mail. We recommend the use of these strategies to maximize response rates and improve the quality of this type of primary health care research.

**Keywords.** Response rates, surveys, physicians.

**Introduction**

In survey research, physicians have long been recognized as a professional group from which it is difficult to obtain high responses. Non-response to mailed surveys reduces sample size and can introduce bias and uncertainty in the results. Conversely, high response rates can reduce the risk of selection bias and enhance a survey’s usefulness. Survey implementation techniques and questionnaire design are both important in achieving high response rates. This paper focuses on implementation techniques to maximize response rates from physicians by summarizing the relevant literature and demonstrating the success of these techniques in our family practice survey research. We describe the methodology used in recent surveys of physicians conducted by the Centre for Studies in Family Medicine through its Thames Valley Family Practice Research Unit (TVFPRU), located in London, Ontario, Canada and funded by the Ontario Ministry of Health and Long-Term Care. The identification and implementation of successful techniques to maximize response rates is critical as primary health care researchers often rely on information gathered through questionnaires to study physicians’ practice profiles, experiences and attitudes.

**Relevant literature**

With regard to the relevant literature on survey research methods, a 2002 Cochrane Systematic Review...
of randomized controlled trials by Edwards et al.\(^1\) of 292 studies offered a number of effective strategies for increasing response rates to postal questionnaires (Table 1). According to the review, the odds of response were more than doubled using monetary incentives, recorded delivery/registered mail and a more interesting questionnaire topic. As well, odds of response were substantially higher with contacting participants before sending questionnaires, follow-up contact, unconditional incentives, shorter questionnaires and providing non-respondents with a second copy of the questionnaire. The odds of response were also increased, but to a lesser extent, with non-monetary incentives, personalized letters and questionnaires, use of coloured ink, stamped return envelopes, first-class mailing and having university sponsorship. In 2007, this Cochrane Systematic Review by Edwards et al.\(^2\) was updated and included a total of 372 randomized controlled studies. The above strategies remained effective, with the addition of a teaser on the envelope, mentioning an obligation to respond and an assurance of confidentiality. It is important to point out that this Cochrane review on methods to increase response rates to postal questionnaires is not restricted to health care studies; indeed, only a small proportion (less than 10\%) of the studies reviewed involved surveys of physicians.

The Dillman approach, also known today as the tailored design method (TDM), is often regarded as the standard for mail surveys. The current version of the TDM involves five elements for achieving high response rates: (i) a respondent-friendly questionnaire; (ii) use of four contacts by first-class mail, with an additional ‘special’ contact (e.g. certified mail, telephone call); (iii) use of return envelopes with real first-class stamps; (iv) personalized correspondence and (v) a token financial incentive that is sent with the survey request. The TDM reflects changes made to the original Dillman approach\(^3\), including the addition of financial incentives and a change in the number and type of contacts. The revisions were based on documented research evidence of how these changes increased response rates.\(^4\) Not surprisingly, many of the strategies identified in the Cochrane Review are integrated into the most recent version of Dillman’s TDM.

In 2002, Field et al.\(^5\) conducted a systematic review of randomized trials to determine the extent to which the components of the Dillman approach have been effective in increasing response rates in surveys of physicians. The authors point out that there have been few randomized trials examining methods of enhancing responses from physicians. Their findings were based on 10 studies and mirror those of the Cochrane Review, including the enhancement of response rates through the use of prepaid financial incentives, personalization and multiple contacts, as well as the use of first-class stamps on return envelopes. This systematic review provides evidence that the Dillman approach increases response rates of physicians to postal surveys.

From the relevant research literature on response rates, it is clear that both survey implementation techniques and questionnaire design are important components of successful survey research.\(^4,6\) However, ‘no matter how well constructed or easy to complete, it [the questionnaire] is not the main determinant of response to mail or other self-administered surveys. Implementation procedures have a much greater influence on response rates’\(^4\) (pp. 149), and it is our experience with implementing postal surveys of physicians which we now examine.

### Table 1

**Strategies to enhance response rates—Cochrane systematic review\(^1\), 2002**

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Odds ratio</th>
<th>95% confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interesting questionnaire topic</td>
<td>2.44</td>
<td>1.99–3.01</td>
</tr>
<tr>
<td>Recorded delivery/registered mail</td>
<td>2.21</td>
<td>1.51–3.25</td>
</tr>
<tr>
<td>Monetary incentives</td>
<td>2.02</td>
<td>1.79–2.27</td>
</tr>
<tr>
<td>Shorter questionnaires</td>
<td>1.86</td>
<td>1.55–2.24</td>
</tr>
<tr>
<td>Unconditional incentives</td>
<td>1.71</td>
<td>1.29–2.26</td>
</tr>
<tr>
<td>Contacting participants</td>
<td>1.54</td>
<td>1.24–1.92</td>
</tr>
<tr>
<td>before sending questionnaires</td>
<td>1.44</td>
<td>1.22–1.70</td>
</tr>
<tr>
<td>Follow-up contact</td>
<td>1.41</td>
<td>1.02–1.94</td>
</tr>
<tr>
<td>Second copy of the questionnaire</td>
<td>1.39</td>
<td>1.16–1.67</td>
</tr>
<tr>
<td>Coloured ink</td>
<td>1.31</td>
<td>1.11–1.54</td>
</tr>
<tr>
<td>University sponsorship</td>
<td>1.26</td>
<td>1.13–1.41</td>
</tr>
<tr>
<td>Stamped return envelopes</td>
<td>1.19</td>
<td>1.11–1.28</td>
</tr>
<tr>
<td>Non-monetary incentives</td>
<td>1.16</td>
<td>1.06–1.28</td>
</tr>
<tr>
<td>Personalized letters and questionnaires</td>
<td>1.12</td>
<td>1.02–1.23</td>
</tr>
<tr>
<td>First-class mailing</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Our methods and survey response rates

Four surveys of physicians were conducted from 2001 to 2004. The surveys varied by sampling strategy, topic, length, type of questions and response format. The response rates for all four surveys were calculated using the same method. Specifically, the population of interest was identified and the sampling frame was generated (i.e. all physicians initially considered for inclusion). Survey packages were mailed out to these potential respondents and ineligible respondents were identified. The ineligible respondents were based on specific study criteria, such as those physicians who had retired, those who no longer practised in the region, and, with respect to the study regarding new physicians, if they had been practising for longer than 3 years. We excluded individuals from the sample if they could not be located. All ineligible respondents were deleted from the sampling frame, thus producing our final sample of eligible respondents. The response rate for each study, then, was calculated by taking the
How to obtain excellent response rates when surveying physicians

number of completed surveys divided by the number of eligible respondents. Ethics approval from The University of Western Ontario’s Office of Research Services was received for all four surveys.

In 2001, the first survey was sent to a random sample of 320 family physicians in the TVFPRU’s database. At that time, this database included about 900 family physicians in the 10 counties surrounding and including London, Ontario. This survey for family physicians was designed and based on the minimal clinical management functional requirements for computer systems set out by the Ontario Ministry of Health and Long-Term Care. This first survey was relatively short and contained mainly closed-ended questions regarding information technology (IT). The Dillman3 approach was used, which at the time involved a questionnaire mailing (including an information letter and a self-addressed stamped envelope), followed by a 1-week postcard as a thank you/reminder, a replacement questionnaire sent after 2 additional weeks and a final replacement questionnaire sent by registered mail after 3 more weeks had passed. We modified this approach by increasing the time frame between mailings, and we did not use recorded delivery/registered mail.

For this first survey, the use of the modified Dillman approach resulted in a response rate of 48% (n = 154). This rate of return has been historically accepted in surveys of professionals, especially physicians. However, results from our studies inform Ontario Ministry of Health and Long-Term Care’s policies, and, as a result, it is essential that our data be as representative as possible.

In order to better understand how we might increase survey response rates, we conducted a literature search to investigate what was known about successful techniques, including the use of incentives. We identified and examined the Cochrane Systematic Review by Edwards et al., which offered a number of effective strategies. Armed with the evidence regarding these strategies, we decided to modify our implementation by using unconditional monetary incentives and recorded delivery/registered mail for all future surveys. The second, third and fourth surveys described below used this enhanced approach. Specifically, all three surveys followed a modified Dillman approach, with reminder postcards and multiple mailings. In addition, packages were sent by recorded delivery/registered mail and included $25 gift certificates from a bookstore chain to partially compensate physicians for their time.

The second survey was conducted in 2002 in order to create a profile of low users of IT and targeted a purposeful sample of all low users of IT from the first survey. Non-responders to the first survey were hypothesized to be low users of IT and were targeted as well for a total sample of 239. The second survey’s topic, length, type of questions and response format were similar to that of the first survey. For the second survey, we were successful in obtaining an overall response rate of 76% (n = 182). It is interesting to point out that response rates did vary, with 88.5% for the low users and 69.5% for the non-responders to the first survey.

The third survey was conducted in 2003 and focused on ‘new’ family physicians, that is, those that began practising in the last 3 years. The survey was sent to a sample of physicians in southwestern Ontario who had been added to the TVFPRU database from 2001 to 2002 (n = 98). This third survey was similar to the previous two in length, but contained both open- and closed-ended questions. As well, the topic of this third survey was different than the previous two surveys; we were interested in understanding the recruitment and retention of new family physicians. For the third survey, we obtained a response rate of 74% (n = 72).

The fourth survey sent in 2004 was a census and was sent by mail to all family physicians (n = 1044) and specialists (n = 1196) in southwestern Ontario. This survey was designed to examine the practice profiles and activities of family physicians and specialists, and hence, its topic was different than those of the three previous surveys. This fourth survey was more detailed than the first three and, as a result, was significantly longer. Similar to the third survey, the fourth survey contained both open- and closed-ended questions. This fourth survey had a response rate of 74% (n = 1647). It should be noted that response rates for the two groups did vary, with 70% (731/1044) for the family physicians and 77% (916/1196) for the specialists.

By incorporating monetary incentives and recorded delivery/registered mail into our implementation approach, we were successful in consistently achieving higher response rates to surveys of physicians.

Discussion

All four surveys were mailed using a modified Dillman approach. The first survey of the random sample of physicians did not use any incentives or recorded delivery/registered mail and received a response rate of 48%. In sharp contrast, the other three surveys obtained response rates of 76%, 74%, 74%, respectively, achieved through the use of gift certificates and recorded delivery/registered mail. Why does using recorded delivery and incentives result in such high response rates? Physicians often rely on their receptionists and nurses to serve as the gatekeepers of information and to prioritize incoming requests to the practice. Sending a survey by recorded delivery/registered mail appears to result in the survey package being placed in the more important pile of mail in the physician’s office. Also, gift certificates partially compensate physicians for time spent completing the survey and are appreciated. Noteworthy is the fact that inclusion of these gift certificates relays respect for physicians’ time. Indeed, a number of respondents have taken the time to write us a note,
thanking us for compensating them for the time they spent completing our survey. Overall, our survey research experience demonstrates that using incentives and recorded delivery/registered mail, along with a modified Dillman approach, are effective strategies to obtain excellent response rates when surveying physicians. Moreover, these results hold for surveys using different sampling strategies, questionnaire formats and topics. It is also notable that the majority of non-responders to the first survey regarding IT filled out and returned the second survey, reflecting the success of these strategies to improve response rates to postal surveys.

Conclusion

The response rates achieved in our four surveys provide evidence to support the use of monetary incentives and recorded delivery/registered mail (along with a modified Dillman approach) in survey research with physicians. Our success in achieving consistently high response rates from physicians when using different sampling strategies, at different times, and on a range of topics substantiates the importance of utilizing the strategies identified to enhance response rates. It is anticipated that this evidence will be used by other researchers conducting similar studies to justify requests for funding to cover the costs associated with recorded delivery/registered mail and providing incentives. We recommend the use of these strategies to maximize response rates and improve the quality of this type of primary health care research.

Acknowledgements

The authors acknowledge the support of the Ontario Ministry of Health and Long-Term Care in providing funding. As well, Dr MS is funded by the Dr W. Brian Gilbert Canada Research Chair in Primary Health Care. The views expressed in this paper are the views of the TVFPRU and do not necessarily reflect those of the Ministry. We want to recognize Dr Ruth Wilson (of the Ontario Family Health Network) for providing us with the additional funds to purchase $25 gift certificates for the second survey. Her support paved the way for us to obtain funds to purchase incentives for subsequent surveys. We also extend our thanks to Dr Amanda Terry and Ms Leslie Meredith for their insightful comments. The authors would like to gratefully acknowledge the significant contribution made by family physicians and specialists in southwestern Ontario who completed our surveys.

Declaration

Funding: Ontario Ministry of Health and Long-term Care; the Dr Brian W. Gilbert Canada Research Chair in Primary Health Care.

Ethical approval: None.

Conflicts of interest: None.

References