Evaluating Methods for Increasing Physician Survey Cooperation

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Discuss results of two methodological experiments designed to increase physician survey cooperation/participation

Explore the usefulness of cost-effectiveness analyses

Point toward possible future research
Problem Statement

- Conducting surveys with physicians is different from conducting surveys with the general population (Sudman, 1985)
  - Frequently approached about participating in research
  - Demanding work schedules
  - “Gatekeepers” typically restrict access
  - Survey are not seen as a priority
  - Many will refuse, while others will agree only after multiple contacts
- What can be done to improve physician survey participation?
Related Work: Reminder Contact Methods

- Multiple contacts have been shown to increase physician participation in surveys (Worthern and Valcarce, 1985; Fox and Kim, 1988; Kasprzyk, et.al., 2001, Flanigan, 2002)
  - Contacts serve as reminders to participate
  - A wide variety of different approaches are currently used

- Most popular reminder contacts used in self-administered mail surveys are postcards and 1st class letters (Dillman 1978, 2000; Fowler, 1993)
  - Postcards are low in cost, somewhat novel, but can easily be mistaken as “junk mail”
  - 1st class letters are more likely to be seen as “important” mail (i.e., opened and read), but involve higher costs

- Since there is no definitive answer, most researchers use what they believe will be effective
Related Work: Survey Length

- Previous studies have demonstrated that survey length has an impact on participation
  - Reviews of the literature all indicate that longer surveys elicit lower levels of physicians participation (Thran & Hixson, 2000; Asch, Christakis, & Ubel, 1998; Thran & Berk, 1993)
    - Results occur independent of other efforts to increase participation
    - General recommendation is keep surveys as short as possible
Related Work: Cost-Effectiveness Analysis

- Popular technique used to evaluate the relative advantage/disadvantage of using different methods to achieve a desired result
  - Introduced by French engineer Jules Dupuit (1848, 1852) to evaluate the value of public works projects
  - For detailed instructions see guides by Mishan (1988) and Thompson (1980)
- The basic formula:
  - Benefits/Costs = Cost-effectiveness ratio
- For survey research, we can substitute response rates for benefits to evaluate the relative advantage/disadvantage of methodological improvements (Del Valle, et.al., 1997)
  - Response Rate/Costs = Cost-effectiveness ratio
Since 1993, *U.S. News & World Report* has published rankings that identify hospitals of exceptional capability in the United States

- Utilizes a Donabedian (1966, 1968) paradigm with measures of 3 factors: structure, process, and outcome
- Beginning with the 2005 rankings, RTI performs the data collection and analyses for the report

The process component of the rankings is a physician survey which collects nominations of the “best hospitals” in 17 medical specialties

- Stratified random sample of 3,400 board certified physicians
- Physicians are surveyed and asked to nominate up to 5 hospitals that provide “the best care...” associated with their medical specialty
Methods: Survey

- Physician survey utilizes a multiple contact approach
  - Survey (cover letter, survey, business reply envelope, and $2 bill)
  - Reminder postcard or 1st class letter
  - Second survey (cover letter, survey, and business reply envelope) sent via Express mail
  - Third survey (cover letter, survey, and business reply envelope) sent via FedEx

- 2005 survey achieved an overall response rate of 47.3% (AAPOR Response Rate 2)
Methods: Experimental Conditions

- Reminder methods
  - Participants randomly assigned to postcard (50%) or 1st class letter (50%) reminder conditions
  - Reminders sent to non-respondents 14 days after the survey package
  - Hypothesis
    - Those who receive a 1st class letter reminder will be more likely to respond than those who receive the postcard reminder

- Length of Survey
  - Participants randomly assigned to receive a “short” (75%) or “long” form of the survey (25%)
    - The short and long forms were 1 and 2 pages, respectively
    - The long form was estimated to take only 2 minutes longer to complete
  - Hypothesis
    - Those who receive the short form of the survey will be more likely to respond than those who receive the long form
Methods: Survey Forms

Short form

Front

Back

Thank you again for your participation.

Long form

Front

Back

Thank you again for your participation.

Please indicate how much you strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree that each of the following has an important influence in choosing the hospital you normally use:

1. Your own direct knowledge of the hospital
2. Expectations of your doctor's patients
3. Recommendations of your colleagues, family, or friends
4. Trust that the hospital's professional staff will care for your family
5. Size of the hospital
6. If the hospital is owned or managed by another company
7. Location
8. Specialization or expertise of the hospital
9. The hospital's reputation for innovation
10. The hospital's reputation for medical leadership

If you find your choice of how to respond to this survey, how would you have preferred to answer the survey? (Please select all that apply)

- In-Person
- By Phone
- By Email
- Online

www.rti.org
Results: Reminder Contact Methods

- All surveys received 6 days after mailing the reminder were counted as part of the experiment.

- A small, but non-significant difference was found in the response rates between the postcard and 1st class letter reminders.
  - $\chi^2 (1, N = 2,584) = 1.24, p = .27$

<table>
<thead>
<tr>
<th>Condition</th>
<th>Formula $^1$</th>
<th>Response Rate $^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postcard</td>
<td>$\frac{413}{413+871+0}$</td>
<td>32.2%</td>
</tr>
<tr>
<td>Letter</td>
<td>$\frac{447}{447+853+0}$</td>
<td>34.4%</td>
</tr>
</tbody>
</table>

Notes:
1. AAPOR standard response rate formula #2
2. Response rates above only represent incoming survey received 20 days after the survey packages were mailed (i.e., 14 days after the initial mailing, plus 6 days after the reminder mailing).
Results: Survey Length

- All surveys received during data collection with at least 1 item answered were counted as a partial/complete in this experiment.

- A significant difference was found in the response rates between the short and long versions of the survey.
  - \( \chi^2 (1, N = 3,369) = 17.20, p = .0001 \)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Formula</th>
<th>Response Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short</td>
<td>( \frac{1,246}{1,246 + 1,281 + 0} )</td>
<td>49.3%</td>
</tr>
<tr>
<td>Long</td>
<td>( \frac{346}{346 + 496 + 0} )</td>
<td>41.1%</td>
</tr>
</tbody>
</table>

Notes:
1. AAPOR standard response rate formula #2
Results: Cost-effectiveness Analyses

- The cost-effectiveness analyses (i.e., response rate/costs) indicates that the postcards offer more of a relative benefit than 1st class letters as a reminder
  - Costs in the equation involved labor, materials, printing, and postage
  - Cost-effectiveness ratios
    - Postcard (34.4/675) = .51
    - 1st class letter (32.2/1,305) = .25

- Since the costs for producing and mailing both short and long forms of the survey were the same the the cost-effectiveness ratio was not calculated as it would not yield any new information
Summary and Conclusions

- There was no difference in response rates between postcard and 1st class letters as reminder.
- In contrast, the cost-effectiveness ratio indicated that the postcards offered more relative advantage to cost when compared to 1st class letter reminders.
- As with previous surveys, physicians were more likely to participate when receiving the short version of the survey.
  - Even the relatively small difference of 1 page appears to have an impact on participation in the survey.
Limitations

- Cost-effectiveness analysis shown focused on outbound costs and did not include handling, analytic, or return-mail costs
- No standards for what is a “significant” difference in cost-effectiveness ratios when making comparisons
Future Directions

- Use cost-effectiveness analyses to help guide methodological decision-making when traditional statistical results do not give clear direction
- Evaluate the limits of impact of form length on physician survey participation
- Conduct research on the response process to determine the critical factors in physician nomination decisions
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References

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