Reviewer's report

Title: Online, paper or mixed? A randomised trial and economic evaluation of the effect of response mode on response rate, response bias, and item non-response in a survey of doctors

Version: 2 Date: 1 February 2011

Reviewer: Jonathan VanGeest

Reviewer's report:

General comments:
The article is timely and addresses important issues related to surveys of physicians, with implications for health care providers generally and other hard-to-reach populations. The questions posed by the authors are suitable and the methods unitized in their analyses are both appropriate and well defined. Discussion and conclusions are also appropriate given the acknowledged strengths and limitations.

Discretionary Revisions:
I would strongly recommend that the authors provide more definitions upfront to the concepts discussed. For example, on page five survey response bias and item response bias are both discussed without prior introduction or definition.

Background/Second Paragraph: I would recommend that the authors refer to the literature as a “growing body,” as there remains significant gaps in our understanding of how to best improve physician participation. Second sentence of the same paragraph (discussion of mode interventions) should include a reference to mixed mode or some combination of paper, internet or interview. Last sentence of the same paragraph should reference “perceived” relevance.

Minor Essential Revisions:
The first paragraph should be expanded to include appropriate definitions as well as implications for lower or declining survey response rates of physicians (compared to general population). In the first sentence, data should be referred to as plural.

Background/Third paragraph: Make explicit that the two studies examining web-based surveys are non-physician studies. There is also a body of literature on physicians’ use of the internet generally that may apply to this discussion.

Page 7/top paragraph: Last sentence is somewhat confusing, as it is not clear if it applies to each respondent mode or to one mode in particular.

Discussion: Would recommend that the authors re-order discussion to follow presentation of results (i.e., response rates first, cost last).

Major Compulsory Revisions:
The primary concern with the literature review is that the authors utilize a number of studies that are not physician surveys, without making this clear. Evidence already suggests that physicians differ from the general public in terms of survey demand, response behavior, and appropriate mechanisms to improve participation. There is also a small body of evidence indicating that there may even be differences among health care providers across each of these domains. Where evidence is not direct, it should be noted with explanation provided as necessary.

The authors do not cite the full body of literature on impact of survey mode on either response rates or data quality. Dillman has published extensively on this issue. Other authors include, but are not limited to, Beebe, de Leeuw, McGrath, and Johnson. This has implications for the introduction as well as the discussion/conclusion.

Page 11/top paragraph: This is the first time that a monetary incentive is mentioned. Would recommend that these cases be excluded from the analyses, as it is unclear whether it is mode or the incentive that is driving the likelihood of survey cooperation (which is the subject of that sentence).

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.