Author's response to reviews

Title: Cost and Surgical Impact of Telephonic Care Support of Populations at Risk for Musculoskeletal Preference-Sensitive Surgeries in a Randomized Quality Study of Interactive Voice Response with a Transfer to Health Coaching

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Author's response to reviews: see over
Dear Mr. Aldcroft,

I would like to thank your reviewers for the careful read of our manuscript and the insightful comments. We have strived to address the reviewers’ comments in a revised manuscript and believe the end product is stronger as a result. Below are detailed responses to each comment.

We appreciate the interest that both reviewers had in the topic. We believe the manuscript adds important evidence in several topic areas including the use of technology for patient outreach, the effect of health coaching, and the potential of shared decision making.

We greatly appreciate BMC Medical Informatics and Decision Making’s interest in this topic and look forward to next steps.

Sincerely,

David Veroff
Detailed Response to Comments

Referee 1’s summary highlighted the following issues:

1. The title is too long and should be shortened to be about the focus of the study and study design but remove outcomes.

We have shortened the title as recommended.

2. The background section in the abstract is confusing and needs to clarify that measured variation is in preference sensitive surgery rates.

We have completely rewritten the background section to explain more clearly the connection with the problems of unwarranted variation in surgery rates and past work on measuring the impact of shared decision making.

3. There is a need to more clearly distinguish between informed decision making and shared decision making if both terms are going to be used.

We agree that these are different conceptually. The focus of this work was on shared decision making and we have, therefore, removed references to informed decision making.

4. There is a need to add a purpose to the abstract.

We have added a clear and concise statement of the study purpose to the abstract.

5. There is a need to describe the intervention so it more clearly indicates that AutoDialog could link patients directly to a health coach.

We added material in the Abstract’s methods section to make this more clear.

6. The reviewer suggested that the term “AutoDialog” was over-used and was overly promotional. She suggested that we replace “AutoDialog” with “intervention” when describing the intervention and control groups.

We have removed most of the references to “AutoDialog” and have used the term “intervention” in many cases.

7. Description of the chronic condition exclusion needed to be clarified since several of the studied conditions are chronic in nature.

We have made clear that the exclusion was for 5 common chronic conditions and have listed them out in appropriate places throughout the manuscript.
8. There needs to be greater clarity about the control group; in particular, it is important to make clear when comparisons are separate for the group that did not receive mail and the group that did receive mail.

All of the control group comparisons are to the control group as a whole. No analysis is presented that separated the mail group from the no-mail group. We have clarified the text to ensure the control population is better understood.

9. The conclusion of the abstract calls the total cost impact significant (it was not; the significant impact was in “actionable costs”) and also has an unsupported conclusion about more informed and engaged decision making.

We have clarified that the significant impact was on actionable medical costs and have indicated that the conclusion about more informed and engaged decision making is an opinion rather than one supported by evidence in this study.

10. In the background section, shared decision making is described as a ‘set of strategies’. The reviewer asked us to elaborate on what these strategies include and the evidence to support their use.

We have added material to describe the strategies. The evidence supporting their use is strongest for decision aids, but we have also added reference to evidence on educational meetings.

10. The statement, “1% to 3% of mailed individuals respond to mailed…” needs a reference to support it

We have made clear this is based on Health Dialog’s experience.

11. The reviewer felt that more information about the details of the study design was needed. This was referenced in several ways in her comments, including needing more information about study procedures, about randomization processes, and about the campaigns.

We have added important details about the study design to address these concerns. We have also clarified the language where appropriate.

12. The reviewer asked us to move the statement about analysis of the baseline characteristics from the methods section to the results section.

The results section already referenced this analysis, so we removed the reference to the same analysis that was in the methods section.

13. The reviewer asked us to include an image of the postcard used if possible.
Because there were several versions of postcards, in the interest of keeping the material relatively concise we have not included copies of the postcards.

14. The reviewer had concern that because the health coaches were not blinded that there was risk of contamination and that this was not addressed as a major limitation of the study’s findings.

The health coaching training and oversight focused on treating patients in two study arms in the same way. Further, the prospective design’s outcome measure was health coaching contact rates (not the effect of health coaching which was only measured after the large impact on contact rates was found) which had negligible potential for biased reporting by the health coach participants. As a result, we do not believe that the lack of blinding is a major limitation. Nonetheless, we have directly addressed this potential bias in our limitations section.

15. The reviewer asked if patients were followed for 6 months.

All of the claims analysis focused on 6 months as was made clear in the text. The intervention was not a six month intervention (it was a one-time outreach effort that had variable follow-up depending on patient needs and interests); we have added material to clarify the intervention.

16. The reviewer asked how the need for materials was determined.

Materials were mailed to patients if they reported definitive diagnosis and agreed to receive materials. This is clarified in the manuscript.

17. The reviewer asked several questions about the analysis. In particular, she asked whether we analyzed preference-sensitive surgery or all elective surgeries. She also asked for examples of the parsimonious factors used in our analysis of medical costs.

We have clarified in the text that the analysis was focused on preference-sensitive surgeries. We have listed examples of the factors used in assessing medical costs.

18. There were a number of comments about the results section including the need to add the control group to the first statement in the results section, making clear that $p=0.055$ is not significant, moving qualitative/interpretation to the discussion section, clarifying the cost result for individuals with back surgery risks, and a suggestion about how to present n’s and %’s.

The result section was adjusted to account for all of the above suggestions. We have also done some minor editing to clarify the language.

19. The following comments were made about the discussion section:
• It is hard to conclude that “cost reduction likely resulted from improvements in a range of self-care skills…” since it was not measured.

We have softened these statements to make clear they are hypothetical explanations for the cost reductions.

• **Statements about exposure to health coaches need to be clarified since the intervention was intended to increase health coaching rates, not “exposure to health coaches”**.

We have clarified that the effect of the intervention was on health coaching rates (not exposure).

• **Given that changes in surgical rates depend on base rates in the population, how high were base rates and therefore the changes of making a change?**.

We have added language that makes clear that the control group rate of surgery was relatively low and therefore difficult to measure impact upon.

20. **The following comment was made about the conclusions section:**
• **“these types of risks” – this needs to be expanded to be a stand alone conclusion.**

We have added some clarification about the types of risks and discussed the generalizability to other risks.

21. **The reference to the Cochrane Collaborative needs to be updated.**

We have updated the reference.

22. **A number of editorial suggestions were made with respect to the tables.**

We agree with these suggestions and have made changes in the tables.

23. **A request was made to better describe the training for health coaches in the appendix and to discuss how the health coaching was tailored for this study.**

We have added some material, but it is important to note that there was not specialized training for health coaches for this study.

Referee 2’s summary highlighted the following issues:

24. **The reviewer raised a similar concern to #9 above.**

As noted above, we have clarified that the significant impact was on actionable medical costs.
24. The reviewer raised the following concern: the statement "direct telephonic communication with a health coach is highly scalable and effective mechanism to support shared decision making", besides including the necessary "a" should either be supported by data or reworded to make it more clearly a mere opinion/belief of the authors.

We have removed the statement from its prior place in the study measures section and instead raised a related topic in the discussion section. Here we describe the remote telephonic support as more easily distributed than on-site support. We have in general taken care to remove or revise language that could appear overly promotional.