Author's response to reviews

Title: Alignment of patient and primary care practice member perspectives of chronic illness care: a cross-sectional analysis

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Author's response to reviews: see over
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Dr. Susan Smith
Associate Editor
BMC Health Services Research

Dear Dr. Smith:

Attached please find the revision of our manuscript “Alignment of patient and primary care practice member perspectives of chronic illness care: A cross-sectional analysis,” (#2075592463974658) which presents baseline data from our cluster-randomized controlled trial testing the effectiveness of a practice facilitation intervention to implement the Chronic Care Model in small community-based primary care practices. We appreciate the invitation to revise and resubmit the manuscript. The reviewers’ comments were extremely helpful and we very much appreciate their input, which we feel has strengthened the manuscript considerably. A point-by-point description of the changes made in response to the comments is provided on the following pages.

If you have any questions, please do not hesitate to ask.

Sincerely,

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REVIEWER 1:

Minor Essential Revisions

1. include p values in abstract
   p values have been added to the abstract.

2. Remove underlined words
   Underlined words have been removed as requested.

3. be consistent in terminology - is it 'practice members' or 'primary care providers'?
   The term “practice members” is used to refer to all personnel employed by the primary care practices, including physician providers, non-physician providers (e.g., nurse practitioners, physician assistants), direct care staff, and non-direct care staff. In instances in which we are referring to primary care providers (i.e., physicians, nurse practitioners, and physician assistants) only, we use that terminology. We have added additional emphasis to make this distinction clearer in the abstract and this information is also provided on Page 7 in the description of participants.

4. Practice Environment Checklist - is this a measure developed by the authors?
   This data collection tool, which is not a standardized scale, was adapted from an instrument utilized in studies of preventive service delivery in primary care practices to collect descriptive information on participating primary care practices in a structured format. This information and appropriate references have been added on Page 9.

5. Delete repetition in the first paragraph of the analysis plan
   The repetitious sentence has been deleted.

6. How were the practices selected?
   A total of 40 practices were recruited for participation in the study. Early recruits included 10 active members of a primary care Practice-Based Research Network (PBRN), all of whom agreed to participate. PBRN enrollees were asked to recommend colleagues whom they thought might be interested in study participation who also referred colleagues (n=25). These physicians were contacted directly by phone and in-person recruiting visits were scheduled at their offices resulting in 22 participants. In addition, 145 recruitment letters were sent to primary care physicians within the region identified from professional society membership guides. From these letters 15 practices responded, of those eight agreed to participate in the study, resulting in a total of 40 practices that were enrolled and randomized in the study. This information has been added to the Methods section on Page 11.
7. What was the response rate of the patient survey?
A total of 2,634 patients were approached regarding participation and 2,493 patients returned usable questionnaires (94.6%). This information has been added to the results section on Page 12.

8. There is a lot of repetition between the text and the information provided in Table 1. Repetition regarding patient characteristics has been reduced and is now replaced by a single sentence on Page 12 indicating “The majority of these individuals were female, of Hispanic or other racial/ethnic background, and had not graduated from college.”

9. What definition of chronic illness was used?
Chronic illnesses were self-reported by patients in the first nine clinics in response to the following question: “Has a doctor or other health professional had ever told you that you have diabetes (yes / no) or other chronic diseases such as high blood pressures, high cholesterol, depression, asthma, emphysema, etc. (yes / no).” In the remaining clinics, the response set to this question was subsequently refined to include a checklist of diabetes and 19 other common chronic illnesses. This information has been added to Methods on Page 9.

10. What were the three most prevalent chronic conditions?
Among the 1,866 patients with one or more chronic illnesses, 699 (37.5%) had diabetes. Because we altered the method of assessing self-reported chronic illnesses, however, we can only reliably report the prevalence of other chronic illnesses among the 1372 patients who completed the checklist with 20 chronic illnesses. Among these, the most highly prevalent conditions besides diabetes were: hypertension (56.6%) and low back pain (36.7%).

11. How many patients had more than one chronic illness?
1167 (61.9%) of the 1886 patients had two or more chronic illnesses.

12. Re-phrase ‘para professionals’
“Paraprofessionals” was the term utilized in the original cited study; this has been changed to “non-physicians” on Page 16.

13. Given the complexity of the US insurance system and the age of the participants - were any patients in receipt of Medicare and Medicaid? versus fee for service?
Yes. In order to keep the patient survey as short as possible, this was not assessed at the patient level, but instead was assessed at the practice level. Information regarding the average proportion of patients who received Medicare and Medicaid in the participating clinics has been added to Table 1.
14. Did you control for socio-economic status in the analysis? (see q13)
Although we did not assess for patients’ income, we did assess and control for level of education, which is correlated with socioeconomic status. We did assess the proportion of patients covered by Medicaid at each practice, but did not control for this at the practice level because prior multivariate analyses with our baseline data has indicated that this was not associated with ACIC scores. We have clarified this on Page 11 of the analytic plan.

15. How was self-reported health measured?
The first item from the Medical Outcomes Study Short-Form (SF) 36, commonly referred to as the SF1 and generally accepted as a valid measure of general health status, was used to assess self-reported health. This information has been added to Page 9.

16. The authors note the psychometric integrity of the two measures in the Discussion - provide the alpha scores for the sub scales of the measures used?
We have clarified on Page 17 that prior studies have found conflicting results about the factor structure of the PACIC. Alpha coefficients for the ACIC subscales ranged from .74 (Community Support) to .89 (CCM Integration), and was .94 for ACIC Summary Score. Alpha coefficients for the PACIC subscales ranged from .77 (Decision Support) to .89 (Problem Solving), and was .95 for PACIC Total score. This information is now reflected on Page 13 and in Table 2.

REVIEWER 2

Discretionary Revisions

1) The title is a somewhat long, I suggest dropping the “cross-sectional reference”.
The title has been changed to “Alignment of Patient and Primary Care Practice Member Perspectives of Chronic Illness Care: A Cross Sectional Analysis” as suggested by the Editor.

2) In the methods section, last sentence of the paragraph under Analytic Plan: Not sure what bivariate association the authors are referring to because later in the text, there is a reference to unadjusted regressions? This needs to be clarified or the sentence deleted.
Thank you for catching this, which was included by mistake. The sentence referring to bivariate associations in the Analytic Plan has been deleted.

Minor Essential Revisions

1) In the abstract, it would be useful if in the results section, the subscales that were significantly associated with PACIC summary scores were listed. The last sentence of the abstract is confusing and hard to follow. Please consider revising and maybe breaking up into two sentences. The underline also distracts and seems out of place in this long sentence.
The ACIC subscales that were significantly associated with PACIC summary scores and the majority of PACIC subscales have been added to the abstract. The last sentence of the abstract has also been revised and use of underlined words has been eliminated.

2) Is there a way to look to examine if utilization impacts the reported findings?
We did not ask about utilization on the patient survey and this cannot be ascertained through administrative data due to anonymous nature of this data. We have added an acknowledgement in the limitations section on Page 18 that patient utilization may be associated with their perceptions of the chronic illness care that they receive.

3) How many practices were recruited? I was unclear if this was 40.
The number of practices that were recruited (N=40) has been clarified on Page 11 of the manuscript, which also notes that one small practice withdrew prior to completion of baseline measures. Therefore, analyses were conducted with data from the 39 remaining practices.

4) What was the mean number of chronic conditions for the patients that responded to the survey? What was the insurance breakdown for the patients?
The mean number of chronic conditions for patients in the sample that responded to the survey who received the version with the checklist of chronic illnesses was 3.15 (SD=2.6). Because of the heterogeneity of insurance coverage among primary care patients, this was not assessed. As previously indicated in our response to comment #10 from Review 1, we did assess the proportion of patients covered by Medicaid and by Medicare in each practice, and have added this information to Table 1.

5) What happens to the reported adjusted association when you include a variable that accounts for physicians/PAs/NPs compared to front office staff? It would seem that the reference point for opinions or responses would differ by profession.
Clarification and reference has been added on Page 12 that prior multivariate analysis of our data using ACIC scores only indicates that professional staff role (e.g., NP/PA, direct care staff, non-direct care staff vs. physician) did not significantly predict ACIC scores.

Major Compulsory Revisions
1) How much data was missing from the primary variables? It is important to list this to determine if the data is sound. And what are the results if the missing for the scales were not imputed? It’s unclear to what scales the authors are referring to but in general it is preferred that outcome variables are not imputed.
Cases with scales or subscales that were completely missing were not included in the regression analyses. Multiple imputation was only performed for ACIC and PACIC subscale scores with missing values if participants responded to a majority of items that comprised the subscales. Rates of missing items for the ACIC subscales ranged from 0% to 6%, and for the PACIC ranged 0% to 5%. Multiple imputation is widely recommended to calculate missing items that comprise less than 50% of a scale or subscale (see Rubin 2009 and Van Ginkel et
al., 2007). These references have been cited in the manuscript and the rates of missing data for the PACIC and ACIC have been added on Page 10.

2) I’m not sure if I missed this but what is the reason for including information about the Practice Environment Checklist? I don’t see how this is included in the analysis. Plus, it’s not reported in detail in the results section or tables.

We apologize for the confusion. The Practice Environment Checklist (PEC) was used to capture basic information about the primary care practices, such as percentage of patients covered by Medicare or Medicaid. Relevant descriptive information from the PEC about the practices has been added to Table 1.

3) Given the heterogeneity of the practices, was there a sensitivity analysis done to explore if characteristics common in low-income practices or community clinics affected the results? For example, proportion on Medicaid, or proportion of patients that are minority as this information was collected as indicated in the manuscript.

In a prior multivariate analysis of our data, the only practice characteristic that was significantly associated with ACIC scores at baseline was the presence of an electronic medical record. We conducted a sensitivity analysis as suggested by the reviewer and found no differences in the regression coefficients for practices that had electronic medical records and those that did not. This information has been added to the Analytic Plan on Page 11 and to the Results on Page 14.

REVIEWER 3

Major Compulsory Revisions
1. The authors need to further elaborate for the reader the interpretation of their regression coefficients in table 3. Yes, some are statistically significant, but what about real world significance.? The co-efficients are all quite small, so even when statistically significant how much does this matter? Use the text description to make this real for the reader, especially those who are not well versed in regression models ie for a 1 point increase in the mean summary ACIC score the score on the PACIC summary/subscale score went up/down by xxx. Then in the discussion comment on whether this matters or not, or if (as it seems to me) there is really not a lot of overlap in what is being measured, making each stand on its own and both important for assessing interventions involving the CCM.

We thank the Reviewer for prompting us to more explicitly state what we had previously only implied. We agree with the Reviewer that one of the primary findings is that there is limited overlap in what is being measured by the ACIC and PACIC, and have added clarification and emphasis in the abstract and to the Discussion on Pages 14-15 and Conclusions on Pages 18-19 that although some of the coefficients are statistically significant, the level of association is relatively weak. As suggested by the Reviewer, we have also added an example of how to interpret the regression coefficients on Page 14.
2. Tell us a bit more about the practices ie. the degree of similarity vs differences among them as well as what is meant by “small” etc... Either adding a section to Table 1 describing the practices (number of practices, size in terms of professional staff, patients etc...) would be useful.

Clariication regarding practice size has been provided on Page 6 and Page 12, indicating that the practices had one to three physicians each, with the majority (N=32) being led by a single physician. Practice characteristics have been added to Table 1.

3. In the discussion section on the PACIC. Do they think that this degree of association is enough to consider this to be “validating” of this scale relative to the ACIC? (see comment 1) They cite evidence that the ACIC is related to outcomes and is therefore as useful tool for assessment of CCM interventions, what about the PACIC? Do they have literature they can cite about the relationship between it and clinical outcomes, or is the patient experience itself the outcome of interest?

As indicated above, we have modified language in the Discussion on Page 14-15 to emphasize the relatively weak associations between the ACIC and PACIC. On Page 17, we also briefly summarize recent studies that support the criterion validity of the PACIC, and reiterate that patient experience is increasingly recognized as an important outcome in and of itself.

Minor Essential Revisions
1. There are a number of results that are reported both in the text and in the tables. Try to eliminate duplication where it is not needed.

Duplication in Results and Table 1 has been reduced.

2. As they are using hierarchical modeling, they should mention the levels they are using ie. how are patients grouped to account for the clustering by practice, by physician, physician only, practice only?

This information is provided in the first sentence of the second paragraph of the Analytic plan on Page 10, which indicates that practice members and patients were nested within practices.

Discretionary Revisions
They might consider reformatting table 3. If there is another way to separate the adjusted from unadjusted results without using bold it would be easier to read.

In order to avoid additional columns which we feel would be even more confusing, we have simply added clarification to Table 3 that the coefficients in the first row of each cell are unadjusted, while those on the second row of each cell in bold are adjusted.

EDITORIAL COMMENTS
Please leave the study design in the title - title could be shortened to Alignment of Patient and Primary Care Practice Member Perspectives of chronic Illness Care: A Cross Sectional Analysis.

The title has been modified as suggested.

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