PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (**http://bmjopen.bmj.com/site/about/resources/checklist.pdf**) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

TITLE (PROVISIONAL)	How do health care professionals working in Accountable Care Organizations understand patient activation and engagement? Qualitative interviews across two time points.
AUTHORS	Elwyn, Glyn; Mishra, Manish; Saunders, Catherine; Rodriguez, Hector; Shortell, Steve; Fisher, Elliott

VERSION 1 – REVIEW

REVIEWER	Sofia Georgopoulou University of East London, United Kingdom
REVIEW RETURNED	15-Apr-2018

GENERAL COMMENTS	**Article Title:** "How do health care professionals working in Accountable Care Organizations understand the concept of patient activation and engagement? Qualitative interviews across two time points" **General Comment:** This is an extremely interesting and timely article focusing on health care professionals' understanding of the concept of patient activation and engagement. While the manuscript is well–written and informative, there are a few shortcomings that would need to be addressed before publication. **Comments:** **Abstract** 1. *Participants:* You state you interviewed 68 clinicians but do not mention how many managers. Could you please add the number of managers interviewed to clarify? I assume it is 35 since the total is 103 but given that most of them were interviewed twice, this needs to be spelt out.

2. *Approach:* Here you state you interviewed 35 participants twice and 33 once. How many were clinicians and how many managers?
3. *Conclusions:* I think you need a stronger message in your conclusion. Yes, clinical teams must better understand the principles of patient activation and engagement but how? It would be helpful if you could propose a concrete way of doing it.
4. *Strengths and limitations of this study:* **Point no. 1:** what specialty were these health professionals? You make significant reference to diabetes management in your results section. Is the focus on that or were health care professional across specialties interviewed? **Point no. 3:** Please spell out fully any abbreviations before using them e.g. ACOs and PAE.
5. Unless I missed it, were all your participants from primary care sites or were tertiary care sites included?

Introduction

1. If your main focus is on diabetes care, then your introduction should include aspects and literature for that as well and highlight why diabetes is particularly suited for implementation of Motivational Interviewing approaches.
2. *Paragraph 1 line 8:* You mention that these approaches have influenced recent changes in health care policy. Could you please provide some examples?
3. It would be helpful to see whether staff that had been trained in Motivational Interviewing had different views to the ones who had not. A lot of people assume they know what MI is from the title but they do not in reality.

Recruitment and Approach

1. When was the 39-item survey instruments administered? How many days before the interviews? Or was it on the same day? Was it re-administered a year later before the second round of interviews? If not, please elaborate on the reasons.
2. Although you have stated Ethics Approvals at the end of the article, it would be good to make reference to it in the recruitment sections as well.

Results

1. I would like to have seen the results of the 39-item survey instrument as well. What did they show? How could those results be linked to the qualitative findings? I do not see the point in explaining that you administered an instrument but do not provide any information of the date collected. Please include them.

	2. Do you have any demographic data for your participants? For example, age, gender, years of experience in their profession etc.? If you do, please include. If you do not, please add it as a limitation. **Strengths and limitations** 1. Please add to your limitations that the research was conducted in the US and therefore, results may not be generalizable to other country that operate different health care systems. **Implications** 1. As mentioned in the abstract, I believe your message should be more concrete and focused. You did identify a gap in the status quo but I would also like to see a more critical approach to your results and implications providing examples and ways of improving the situation.

REVIEWER	Anna R Gagliardi University Health Network, Canada
REVIEW RETURNED	24-Apr-2018

GENERAL COMMENTS	Many thanks for the opportunity to review this manuscript. The issue of patient engagement is a world-wide priority and knowledge is needed on how to achieve that. This study, based on a considerable number of interviews at multiple sites, reveals that we are far from this goal. Overall, well done. A few additional details would help readers to further understand, interpret and apply the findings. METHODS - with respect to patient and public involvement, the authors state none were involved but later state that the advisory committee included two patient participants - cite what qualitative research reporting standards were used, for example, COREQ, which specifies several details must be reported that are not reported here, for example, how many were invited to participate - what qualitative approach was employed and why? related to this, why was no theory employed or generated? - what was the purpose of the survey and why are no survey results reported? - it is not entirely clear why two interview cycles were used and how they differed; in the abstract it is noted that the two cycles involved some of the same participants - clarify these details - why were participants specifically asked about the three PAE approaches and not others? - it does appear in the interview guide that participants were asked about other PAE tools; however, those details are absent in the Results, but would be worth reporting because participants may not use the three PAE approaches in favour of others - authors note that they did assess theme-contradicting data, which is an important part of qualitative research and, in Results, note that that there were no thematic differences between the two cycles of interviews; they specify not having compared responses across specialties but it would be important to compare findings between managers, physicians and nurses, between the two

	geographic locales, and between types of organizations, for example, academic and community/rural RESULTS - some suggestions are offered above for additional information that could be reported - anonymized identifiers should include more detail, for example a number, to distinguish between respondents, otherwise readers do not know if all included quotes are from the same one or two participants - given the large number of interviews, there was little actual data (quotes) reported; a reader would benefit from seeing more data; this can be challenging to report in a qualitative manuscript; suggest you include an exemplar quote for each theme in Appendix 3 - A few commonly cited barriers were reported; did the interview guide specifically prompt for barriers? if so that should be included in Methods, and barriers should be reported more robustly in the Results DISCUSSION - elaborate on how lack of independent coding could have influenced the findings, and why it was not done - additional limitations to recognize include lack of relevance or transferrability of the findings to other settings, either type of health care organizations or countries with other health care systems; and lack of use of theory by which to analyze or report the findings, which could have characterized the types/activities of PAE in a more detailed way rather than focusing on only three specific PAE approaches - rather than stating "Future approaches should prioritize engagement..." offer some suggestions for how this could be done

VERSION 1 – AUTHOR RESPONSE

Reviewer: 1
Comments to the Author

Overall
This is an extremely interesting and timely article focusing on health care professionals' understanding of the concept of patient activation and engagement. While the manuscript is well–written and informative, there are a few shortcomings that would need to be addressed before publication.

Abstract
Reviewer comment:
Participants: You state you interviewed 68 clinicians but do not mention how many managers. Could you please add the number of managers interviewed to clarify? I assume it is 35 since the total is 103 but given that most of them were interviewed twice, this needs to be spelt out.

Author response:
The language we used to describe the participants was confusing, as the 68 was intended to include both clinicians and managers. Your comment asks for clarity regarding the participants and that was addressed in the text as follows:

Design
Qualitative study; 103 in-depth, semi-structured interviews.

Participants
Sixty-eight clinicians and 8 managers were interviewed at two established accountable care organizations.

Reviewer comment:
Approach: Here you state you interviewed 35 participants twice and 33 once. How many were clinicians and how many managers?

Author response:
In an attempt to be concise, the language we used lead to confusion describing the interview sample. We collectively described all of the interviews for both clinicians and managers. For clarity, we added the following text to the Abstract under the Approach subheading to separate the number of interviewees from each category.

Of the 60 clinicians, 33 were interviewed twice leading to 93 clinician interviews. Of the 8 managers, 2 were interviewed twice leading to 10 manager interviews. We used a thematic analysis approach to the data.

Reviewer comment:
Conclusions: I think you need a stronger message in your conclusion. Yes, clinical teams must better understand the principles of patient activation and engagement but how? It would be helpful if you could propose a concrete way of doing it.

Author response:
Thank you for this invitation to propose solutions to the gap in practice that we identified. We initially omitted the suggestions, as they are beyond the scope of the data we collected. However, in response to the call for concrete steps forward, we recommend a focus on understanding definitions that would include measurement and possible incentivization. It is an evidence-based notion we included in the text and referenced as below.

Clinical teams in the ACO model would benefit from specificity defining key terms pertaining to the principles of patient activation and engagement. Measuring the degree of understanding and behavior change - and adding better-aligned incentives would minimize the notion that these techniques are already being used. This will help realize the potential of patient-centered care.

Reviewer comment:
Strengths and limitations of this study: Point no. 1: what specialty were these health professionals? You make significant reference to diabetes management in your results section. Is the focus on that or were health care professional across specialties interviewed? Point no. 3: Please spell out fully any abbreviations before using them e.g. ACOs and PAE.

Author response:
Point number 1 asked for clarity on the health professional specialties. All of the physicians were primary care physicians and all of the other clinicians worked in primary care as well. Point number 2 inquired about the focus on diabetes management. Diabetes care was one of the common conditions managed in primary care settings that we used as a prompt in the interview guide. The frequent referencing of diabetes is a function of the prompt, however it was not the only condition that was offered as a probe to understand care delivery patterns. Other conditions that we used as prompts

included cardiovascular disease and end of life care. Point number 3 requested a copy edit in the abstract which was completed. The following changes were made to the manuscript to address these three points.

Strengths and limitations of this study

● Significant quantity of interviews (n=103) with primary care health professionals who reported on common conditions such as diabetes mellitus type II and cardiovascular disease.
● Interviews were conducted with the same teams, often the same individuals, on two separate occasions.
● Accountable Care Organizations were selected to represent settings that were likely to be at the cutting edge of implementing Patient Activation and Engagement.

Reviewer comment:
Unless I missed it, were all your participants from primary care sites or were tertiary care sites included?

Author response:
All of our participants were from primary care sites and tertiary care sites were included in the study. We addressed this issue in combination with the previous comment for clarity.

● Significant quantity of interviews (n=103) with primary care health professionals who reported on common conditions such as diabetes mellitus type II and cardiovascular disease.

Introduction
Reviewer comment:
If your main focus is on diabetes care, then your introduction should include aspects and literature for that as well and highlight why diabetes is particularly suited for implementation of Motivational Interviewing approaches.

Author response:
Thank you for drawing attention to this unintended lean in the manuscript. Although the data presented in the results seems to focus specifically on diabetes care, it was just one of the prompts used in the interview guide. The interview guide prompted participants regarding diabetes type II, cardiovascular disease, and less so, end of life care. This was addressed by adding the following clause to the penultimate sentence in the Methods section under the Data Collection subheading.

Based on the literature, prior experience, and the advice of a scientific advisory committee (two patient participants, five PAE experts), we developed a semi-structured interview guide focused on PAE activities with question prompts that focused on diabetes mellitus type II and cardiovascular disease.

Reviewer comment:
Paragraph 1 line 8: You mention that these approaches have influenced recent changes in health care policy. Could you please provide some examples?
Author response:
The footnote at the end of the sentence cited a paper that link the influence of patient-focused care in ACOs and the development of Merit-Based Incentive Payment Systems (MIPS)- a hallmark feature of the MACRA legislation. We added a phrase to strengthen the claim as requested.

These approaches have influenced recent changes in health care policy, perhaps most notably the MACRA legislation.12

Reviewer comment:
It would be helpful to see whether staff that had been trained in Motivational Interviewing had different views to the ones who had not. A lot of people assume they know what MI is from the title, but they do not in reality.

Author response:
This is an important point. There is potential for a significant variance in training for MI that could range from attending a lecture to receiving certification. Verifying if clinician participants were trained as stated, would be beyond the capabilities of this study. What we can take from the data is that the term MI was introduced to the interviewees and it was recognized universally. We acknowledge this point in the Discussion under the Strengths and Limitations sub-heading.

Other limitations include the difficulty to account for the variation in training for the PAE techniques that we focused on.

Recruitment and Approach

Reviewer comment:
When was the 39-item survey instruments administered? How many days before the interviews? Or was it on the same day? Was it re-administered a year later before the second round of interviews? If not, please elaborate on the reasons.

Author response:
The 39-item survey instrument was administered and completed within the six-month time period prior to each cycle of site visits. It was not administered on the same day. The survey instrument was re-administered one year later – again in the six months leading up to the second cycle of site visits. These details were added to the manuscript in Methods section under the Recruitment and Approach sub-heading. We did not add more detail regarding the survey data, as they are the main topics of other manuscripts under preparation.

Recruitment and Approach
Within each ACO, we assessed levels of PAE in the 71 primary care sites of the two ACOs using a 39-item survey instrument (see Appendix 1) that was administered in the six-month period prior to each cycle of site visits.
Reviewer comment:
Although you have stated Ethics Approvals at the end of the article, it would be good to make reference to it in the recruitment sections as well.

Author response:
The Ethics Approvals were added to the end of the Recruitment and Approach section, per suggestion.

We obtained Institutional Review Board approval from The University of California, Berkeley School of Public Health and the Dartmouth Institute for Health Policy and Clinical Practice.

Results

Reviewer comment:

I would like to have seen the results of the 39-item survey instrument as well. What did they show? How could those results be linked to the qualitative findings? I do not see the point in explaining that you administered an instrument but do not provide any information of the date collected. Please include them.

Author response:
The results of the 39-item survey instrument were not included as they did not contribute to the central thesis of our aims. The instrument was used to stratify clinical sites into high and low performing locations. The focus of our work with the data generated was to study the three aspects of PAE and see how clinical teams in ACOs understood and implemented those approaches.

We recognize that although the outcomes of the survey instrument are not critical to our message, they may be of interest to readers. The data has been collected and tabulated for a manuscript under preparation by UC Berkeley investigators. We have included the results below for the sake of this Review and ask that it not be circulated as it is not publicly available. Upon publication of the UC Berkeley investigators' manuscript, any inquiries will be directed to that citation.

From UC Berkeley draft of tentative title:

Linking Patient Engagement and Relational Coordination to Patient-Reported Outcomes in Primary Care Practices of Accountable Care Organizations

Table removed by Editor

Reviewer comment:
Do you have any demographic data for your participants? For example, age, gender, years of experience in their profession etc.? If you do, please include. If you do not, please add it as a limitation.

Author response:
Key characteristics of the two participating ACOs were collected. In addition, descriptive characteristics of the 16 practice sites were also collected. However, demographic information was not collected for the individual participants. The participants were identified in a short period of time, in the months prior to the site visits. The interview guides did not ask for information beyond the clinical role of the interviewee and the number of years they have worked at the clinic. Probing into personal demographics could have lead to limited comfort in answering candidly given the small staff sizes in some of the locations. This was added to the manuscript in the Discussion section under the Strengths and Limitations subheading.

Specific details about the age of those interviewed, and their level of experience in practice was not collected.

Strengths and Limitations

Reviewer comment:
Please add to your limitations that the research was conducted in the US and therefore, results may not be generalizable to other country that operate different health care systems.

Author response:

The following sentence was added to the Discussion section under the Strengths and Limitations sub-heading.

Also, the study was conducted in the United States and results may not directly be generalizable to other health care contexts.

Implications

Reviewer comment:
As mentioned in the abstract, I believe your message should be more concrete and focused. You did identify a gap in the status quo, but I would also like to see a more critical approach to your results and implications providing examples and ways of improving the situation.

Author response:
Once again, thank you for this invitation to propose solutions to the gaps we identified. Suggestions were omitted for the reasons cited in response to Comment #3. However, we are grateful for the opportunity to articulate some of our opinions on the possible solutions. The following text was added to the Discussion section below the Implications sub-heading.

We have also shown, there is a relationship between understanding and implementing PAE into clinical care. One approach we suggest is to measure the degree of implementation of PAE techniques, as a surrogate for understanding, and reward clinicians who score high on metrics such as Patient Reported Health Outcome Measures. If the incentives are better aligned with desirable behavior change, it may be more likely that the PAE model will achieve its full potential.

Reviewer: 2
Comments to the Author

Overall
Many thanks for the opportunity to review this manuscript. The issue of patient engagement is a world-wide priority and knowledge is needed on how to achieve that. This study, based on a considerable number of interviews at multiple sites, reveals that we are far from this goal. Overall, well done. A few additional details would help readers to further understand, interpret and apply the findings.

Methods
Reviewer comment:
with respect to patient and public involvement, the authors state none were involved but later state that the advisory committee included two patient participants

Author response:
Thank you for drawing attention to this inconsistency. Two patients were involved in the advisory committee. In addition, patients also participated in a Patient Reported Health Outcome Measure survey that was sent out prior to each wave of site visits over two years. This survey was not described in depth, as it was not significant to the focus of our study. We aimed to characterize clinician and manager perceptions of PAE. The manuscript was changed to acknowledge these events.

Patient and Public Involvement
Two patients participated in an advisory committee interview. In addition, a random sample of patients

from each ACO participated in a survey that was administered twice over two years.

Reviewer comment:
cite what qualitative research reporting standards were used, for example, COREQ, which specifies several details must be reported that are not reported here, for example, how many were invited to participate

Author response:
We used the COREQ qualitative research reporting standards to guide the preparation of this manuscript. It will be attached as Appendix 5. We were able to account for 31 of the 32 elements on the checklist. The one item we could not address was how many participants were in the study, as that data was not pursued. The participants were selected by regional staff managers and we were not privy to their recruitment process.

COREQ CHECKLIST
No Item Guide questions/description Page in document
Domain 1: Research team and reflexivity
Personal Characteristics
1. Interviewer/facilitator Which author/s conducted the interview or focus group? 7
2. Credentials What were the researcher's credentials? E.g. PhD, MD 7
3. Occupation What was their occupation at the time of the study? 7
4. Gender Was the researcher male or female? 7
5. Experience and training What experience or training did the researcher have? 7
Relationship with participants
6. Relationship established Was a relationship established prior to study commencement? 7
7. Participant knowledge of the interviewer What did the participants know about the researcher? e.g. personal goals, reasons for doing the research 7
8. Interviewer characteristics What characteristics were reported about the interviewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic 7
Domain 2: study design
Theoretical framework
9. Methodological orientation and Theory What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis 6
Participant selection
10. Sampling How were participants selected? e.g. purposive, convenience, consecutive, snowball 5
11. Method of approach How were participants approached? e.g. face-to-face, telephone, mail, email 5
12. Sample size How many participants were in the study? 8
13. Non-participation How many people refused to participate or dropped out? Reasons? NA
Setting
14. Setting of data collection Where was the data collected? e.g. home, clinic, workplace 5
15. Presence of non-participants Was anyone else present besides the participants and researchers? 5
16. Description of sample What are the important characteristics of the sample? e.g. demographic data, date 8
Data collection
17. Interview guide Were questions, prompts, guides provided by the authors? Was it pilot tested? 6
18. Repeat interviews Were repeat interviews carried out? If yes, how many? 5
19. Audio/visual recording Did the research use audio or visual recording to collect the data? 6
20. Field notes Were field notes made during and/or after the interview or focus group? 7
21. Duration What was the duration of the interviews or focus group? 6

22. Data saturation Was data saturation discussed? 18
23. Transcripts returned Were transcripts returned to participants for comment and/or correction? 6
Domain 3: analysis and findings
Data analysis
24. Number of data coders How many data coders coded the data? 7
25. Description of the coding tree Did authors provide a description of the coding tree? Appendix 2
26. Derivation of themes Were themes identified in advance or derived from the data? 7
27. Software What software, if applicable, was used to manage the data? 7
28. Participant checking Did participants provide feedback on the findings? 6
Reporting
29. Quotations presented Were participant quotations presented to illustrate the themes / findings? Was each quotation identified? e.g. participant number Yes
30. Data and findings consistent Was there consistency between the data presented and the findings? Yes
31. Clarity of major themes Were major themes clearly presented in the findings? Yes
32. Clarity of minor themes Is there a description of diverse cases or discussion of minor themes? Yes

Reviewer comment:
what qualitative approach was employed and why? related to this, why was no theory employed or generated?

Author response:
We used a thematic analysis approach to this qualitative research. After the event, we followed the six phases described in the thematic analysis method and generated themes from the data using codes that characterized our targets of interest. We did not try to impose a theory, nor did we attempt to generate one. Although it is not a formal theory, it is noteworthy to draw attention to our Figure 2. We described a phenomenon using boxes that indicated how the rudiments of awareness were present, yet without understanding, implementation was negligible. This mirrors the work of Donald Kirkpatrick and the Kirkpatrick Four Level Model of Evaluation – 1. Reaction 2. Learning 3. Behavior 4. Results. Using the Kirkpatrick Model, it would be difficult to generate a theory, as the results of our thematic analysis indicated that the process did not move beyond Reaction and progress to Learning or the later stages. Hence, it was omitted in the manuscript.

Reviewer comment:
what was the purpose of the survey and why are no survey results reported?

Author response:
The purpose of the survey was to assess the level of PAE that was occurring in the 16 practice sites that were included in the study. The study collected data by stratifying the clinical sites into quartiles of high and low levels of PAE performance. This was not the focus of study and we decided not to draw attention to that aspect of the data. For similar reasons, we initially decided to omit the results of the 39-item survey instrument in the manuscript submission. However, we recognize that although the outcomes of the survey instrument are not critical to the message we wish to communicate, they may be of interest to readers. The data is currently a key element in a manuscript under preparation by the UC Berkeley Team. We include it here confidentially for the sake of review, however we ask that it not be circulated as the data has not been published yet.

Linking Patient Engagement and Relational Coordination to Patient-Reported Outcomes in Primary Care Practices of Accountable Care Organizations
Table 1. Patient Engagement Strategies Used by ACO-Affiliated Practices, High vs. Low Practices
All Practices High Use of Patient Engagement Low Use of Patient Engagement

n=16 n=8 n=8
Patient Engagement Strategy Time 1 Mean Time 2 Mean Time 1 Mean Time 2 Mean Time 1 Mean Time 2 Mean
39-item PAE Survey Score (Mean, SD) 54.9 (27.7) 64.5 (21.1) 79.1 (11.9) 76.2 (15.5) 30.6 (12.5) 52.7 (19.9)**
Patient Care Outreach Strategies:
1. Conducts a Health Risk Assessment (HRA) Survey with patients 75.0 81.3 91.8 95.9 58.3 66.6
2. Provides patients feedback on their HRA results 72.9 79.2 95.9 95.9 50.0 62.5
3. Provides ongoing monitor of HRA results (assessing over time changes) 64.6 79.2 95.9 95.9 33.3 62.5
4. Refers patients to a disease prevention or health promotion program as a result of the HRA 62.4 72.9 95.9 95.9 29.0 50.0
5. Encourages relevant patients to participate in a Healthy Eating Program 81.3 87.5 100.0 95.9 62.6 79.1
6. Encourages relevant patients to participate in a Physical Activity Program 83.4 85.4 95.9 95.9 71.0 75.0
7. Encourages relevant patients to participate in an Employee Health Promotion/Prevention/Wellness Program 72.9 70.9 100.0 87.6 45.9 54.1
8. Sponsors or participates in School Health Clinic interventions 33.4 41.7 66.8 70.9 0.0 12.5

Patient Communication, Motivational Interviewing, and Involvement in Treatment Care Plans:
9. Health Risk Assessment results are available electronically to care team members (through the electronic medical record) at the point of care 62.5 79.3 95.9 91.8 29.1 66.8
10. Clinicians are trained in motivational interviewing techniques 60.4 72.9 91.8 83.4 29.1 62.5*
11. Clinicians consistently use motivational interviewing techniques in communicating with patients (e.g. encourage patients to ask questions) 60.4 79.2 91.8 83.4 29.1 75.0*
12. Clinicians consistently encourage patients to discuss their work, home life, and social situation 79.3 79.3 91.8 91.8 66.8 66.8
13. Staff are trained in motivational interviewing techniques 39.6 60.4 70.9 66.8 8.4 54.1*
14. Staff consistently use motivational interviewing techniques in communicating with patients (e.g., encourage patients to ask questions) 41.7 66.7* 70.9 70.9 12.5 62.5***
15. Staff note patient preferences for treatment in the patient's record 62.6 70.9 75.1 75.1 50.0 66.8
16. Select staff serve as "health coaches" for patients seeking to modify their lifestyle 47.9 56.3 70.9 62.6 25.0 50.0
17. Patients can routinely provide information on their care and their health via patient portal (not just access) 72.9 81.3 91.8 91.8 54.1 70.9
18. Telehealth is consistently made available to patients with diabetes 37.5 58.4 70.9 62.5 4.1 54.3*
19. Telehealth is consistently made available to patients with cardiovascular disease 43.7 56.3 75.0 62.5 12.4 50.0*
Shared Decision-Making:
20. Clinicians consistently involve patients in developing treatment goals 75.0 85.5 95.9 91.8 54.1 79.3
21. Clinicians or staff review goal-setting for behavioral changes with patients as a result of their HRA 58.3 77.1 95.9 91.8 20.8 62.5*
22. Practice provides eligible patients with shared decision making videos 20.9 25.0 41.8 29.1 0.0 20.9
23. Physicians consistently have follow up discussions with patients regarding their treatment options and preferences 68.8 81.4 95.9 91.8 41.6 71.0*
24. There is a formal evaluation of the impact of shared decision making on patient care choices, outcomes of care, and patient experience with their care 54.2 56.3 87.6 70.9 20.8 41.8
25. There exists an organized follow up program to assist patients in managing their medications at home, e.g., pharmacist-led medication management 62.5 62.5 95.9 83.4 29.1 41.6

26. Shared medical appointments (group visits) are available for patients with diabetes 41.6 66.7* 79.1 87.5 4.1 45.9*
27. Shared medical appointments (group visits) are available for patients with cardiovascular disease 29.2 35.4 58.4 58.4 0.0 12.5
28. Peer to Peer (Patient to Patient) programs are available for patients with diabetes 41.6 56.3 70.9 70.9 12.4 41.8
29. Peer to Peer (Patient to Patient) programs are available for patients with cardiovascular disease 29.1 33.3 45.9 45.9 12.4 20.8
30. Programs exist to improve family participation and support for patients with diabetes 58.3 68.8 87.5 87.6 29.1 50.0*
31. Programs exist to improve family participation and support for patients with cardiovascular disease 41.6 54.3 58.3 62.6 25.0 45.9
Patient Self-Management:
32. At home monitoring devices and/or tools to assess medication management, blood pressure, blood sugar, and lipids 70.9 70.8 87.6 75.0 54.1 66.6
End of Life/Advanced Serious Illness Care Patient Engagement and Family Involvement:
33. Clinicians consistently discuss the importance of patient advanced directives 79.3 79.3 87.6 87.6 71.0 71.0
34. Clinicians consistently discuss hospice care options with patients 75.1 79.3 79.3 91.8 71.0 66.8
35. Clinicians consistently discuss the availability of both hospital based and community based palliative care with patients 77.1 81.3 87.5 91.8 66.8 70.9
Patient Involvement in Design of Care and Organization-wide Efforts to Improve Quality of Care:
36. Patient advisory councils exist for patients with diabetes 22.9 33.4 45.9 37.5 0.0 29.3*
37. Patient advisory councils exist for patients with cardiovascular disease 16.7 29.2 33.4 37.5 0.0 20.9
38. Patients consistently participate in quality improvement teams 31.3 39.7 62.5 54.3 0.0 25.1
39. Patients are involved in helping to govern the clinic/practice 31.2 39.6 50.0 50.1 12.4 29.1
* p<0.05, ** p<0.01, *** p<0.001. Numbers in bold and followed by asterisks show mean scores change statistically significantly from Time 1 (2015) to Time 2 (2016).

Reviewer comment:
it is not entirely clear why two interview cycles were used and how they differed; in the abstract it is noted that the two cycles involved some of the same participants - clarify these details

Author response:
The study design included two cycles of interviews to enhance our understanding of changes over time across several domains. Those domains included organizational culture, leadership, team effectiveness, relational coordination, and patient centeredness. These domains were assessed using validated instruments over the two-year period of the study.
The purpose of the study was to see what two ACOs were doing to activate and engage their patients to participate in their own care. Participants were interviewed twice when possible to understand the culture and any culture changes when possible. The following sentence was added to the Methods section under the Data Collection sub-heading.

There were two cycles of interviews to enhance our understanding of organizational culture and changes over time.

To clarify the participants roles over the two cycles we changed to manuscript to include the following in the Abstract:

Design
Qualitative study; 103 in-depth, semi-structured interviews.

Participants
Sixty-eight clinicians and 8 managers were interviewed at two established accountable care organizations.

Of the 60 clinicians, 33 were interviewed twice leading to 93 clinician interviews. Of the 8 managers, 2 were interviewed twice leading to 10 manager interviews.

Reviewer comment:
why were participants specifically asked about the three PAE approaches and not others?

Author response:
The focus of this report was to look at the three PAE approaches: goal-setting, motivational interviewing, and SDM. Our research team found these three approaches to be critical to the innovation of PAE and decided to code for this subset of the data. Participants were asked about other approaches to PAE, however our intention was to specifically attend to what we deemed as the three central categories.

Reviewer comment:
it does appear in the interview guide that participants were asked about other PAE tools; however, those details are absent in the Results, but would be worth reporting because participants may not use the three PAE approaches in favour of others

Author response:
Thank you for that observation, as it does seem to be an obvious step. The interview guide formally addressed topics such electronic health records, patient portals online, telemedicine, etc. And there were multiple probing questions that went beyond the interview guide exploring other tools to enhance PAE.
As tempting as it is to comment on the synergies and crossovers that may exist with the tools, our research team had to maintain discipline and stay focused on searching for the three central topics we initially identified as targets for this study.

As the point you raise will likely be on the mind of many readers, we addressed the topic of our selected scope in the last paragraph of the Introduction section.

To address this gap we conducted a two-phase, cross-sectional qualitative study to assess the use and understanding of PAE approaches among frontline clinicians and managers at ACO-affiliated practices. Many techniques to enhancing PAE exist. Our focus was to assess the extent that interviewed members of clinical teams and their managers were aware of, understood, and implemented three critical PAE skills: goal-setting, motivational interviewing, and SDM.

Reviewer comment:
authors note that they did assess theme-contradicting data, which is an important part of qualitative research and, in Results, note that that there were no thematic differences between the two cycles of interviews; they specify not having compared responses across specialties, but it would be important to compare findings between managers, physicians and nurses, between the two geographic locales, and between types of organizations, for example, academic and community/rural

Author response:
We collected interview data for this study that spanned a wide variety of topics regarding PAE. We designed our study to focus on a small part of the data and analyze any themes that emerged regarding three specific PAE techniques. Based on our analysis, there did not seem to be any themes

that contradicted our findings, which lead to our led to the model of: Recognition /Appraisal /Understanding /Implementation (Figure 2).

We appreciate that the comparisons of data within the specialties and contexts is an important sub-analysis, so much so that we have started a second study using our coded data looking at that very topic. We recognize the value of your observation in the data analysis and concluded that it would be beyond the scope of this study. The message for this manuscript looks at the data in aggregate. Subsequent analyses in future manuscripts will divide the data, as you suggest.

Results
Reviewer comment:
some suggestions are offered above for additional information that could be reported

Author response:
We have taken the suggestions and have made the adjustments as recommended as described above.

Reviewer comment:
anonymized identifiers should include more detail, for example a number, to distinguish between respondents, otherwise readers do not know if all included quotes are from the same one or two participants

Author response:
This is an important observation that was overlooked in preparing the manuscript. We developed an anonymized coding system and used to link individuals and their quotations. This has been added to the text per this recommendation.

Reviewer comment:
given the large number of interviews, there was little actual data (quotes) reported; a reader would benefit from seeing more data; this can be challenging to report in a qualitative manuscript; suggest you include an exemplar quote for each theme in Appendix 3

Author response:
Indeed, we did generate a lot of data that totaled approximately 2500 pages of interview transcripts. Every interview was read and then coded for the target content of our study. In the Results section, we used 26 different quotations to support the hypothesis we generated. Many of the quotations were embedded in the paragraphs of the section. The exemplar quotes were taken out of the paragraph and given their own space with the intention to draw attention to them. The entire interview transcript can be made available to others for secondary analysis upon request.

Reviewer comment:
A few commonly cited barriers were reported; did the interview guide specifically prompt for barriers? if so that should be included in Methods, and barriers should be reported more robustly in the Results

Author response:
The interview guide did prompt the participant to explore barriers for several different aspects of PAE. We focused our coding of the data on the three approaches of interest [goal-setting, motivational interviewing, and shared decision making]. The suggestion is well-taken, as barriers for implementation is a critical part of our hypothesis. The data showed that these two were the only barriers that were cited with repetition and perhaps more notably, never in the data were understanding or training cited as a limitation to implementation. Thank you for prompting this clarity.

We have adjusted the Methods and the Results to reflect your suggestions.

Methods:
Based on the literature, prior experience, and the advice of a scientific advisory committee (two patient participants, five PAE experts), we developed a semi-structured interview guide focused on PAE activities with question prompts that focused in diabetes mellitus type II and cardiovascular disease. Understanding of PAE and barriers to implementation were among the topics included in the guide.
Results:
Commonly cited barriers to PAE were the low levels of administrative support and lack of sufficient time. Of note, there was no mention of lack of understanding or training in PAE techniques as a barrier.

Discussion
Reviewer comment:
elaborate on how lack of independent coding could have influenced the findings, and why it was not done

Author response:
As described in Coding In-depth Semistructured Interviews: Problems of Unitization and Intercoder Reliability and Agreement (Sociological Methods & Research 42(3) 294-320), https://sociology.dartmouth.edu/sites/sociology.dartmouth.edu/files/coding_in_depth_semi.pdf

John Campbell et al. describes the challenges of having two independent coders working through a large data set, such as ours, and the difficulty in establishing intercoder reliability under these conditions. The approach suggested and what we followed was to have frequent meetings to check in on interpretations of the data as nuanced understanding develops. In the first interview cycle 10% of the interviews were coded independently by two researchers on the team. The sample was randomized, and the coding was compared, and discussion took place regarding agreement. The same process was repeated for the second cycle of interviews. Notably, almost all of the same text segments were coded and the discussion was primarily about the interpretation of which codes would apply for the selected text. Based on the frequent discussion of the data and weekly meetings over most of 2 years, the lack of independent coding likely did not influence the findings significantly. That acknowledged, it was recognized in the Discussion under the Strengths and Limitations sub-heading.

Data analysis followed established qualitative methods, using a coding process that two researchers developed collaboratively. We acknowledge that the absence of double-independent coding is a potential weakness of our approach; a second researcher coded 10 percent of the transcripts for validation.

Reviewer comment:
additional limitations to recognize include lack of relevance or transferability of the findings to other settings, either type of healthcare organizations or countries with other health care systems; and lack of use of theory by which to analyze or report the findings, which could have characterized the types/activities of PAE in a more detailed way rather than focusing on only three specific PAE approaches

Author response:
The limitations you identify are all valid and have been added the Discussion under the Strengths and Limitations subheading.

Other limitations include the difficulty to account for the variation in training for the PAE techniques

that we focused on. Additionally, formal theory was not used in the data analysis and the demographic data for the interviewees was omitted. Also, the study was conducted in the United States and results may not directly be generalizable to other health care contexts.

Reviewer comment:
rather than stating "Future approaches should prioritize engagement..." offer some suggestions for how this could be done

Author response:
Once again, thank you for this invitation to propose solutions to the gaps we identified. The suggestions were omitted, as they are beyond the scope of the data we collected. However, we are grateful for the opportunity to articulate some of our opinions on the possible solutions. The following text was added to the Discussion section below the Implications sub-heading.

We have also shown, there is a relationship between understanding and implementing PAE into clinical care. One approach we suggest is to measure the degree of implementation of PAE techniques, as a surrogate for understanding, and reward clinicians who score high on metrics such as Patient Reported Health Outcome Measures. If the incentives are better aligned with desirable behavior change, we will likely see the PAE model achieve its full potential.

Formatting Amendments
Reviewer comment:
Please re-upload your "Appendix file" under file designation supplementary files in PDF format.

Author response:
The Appendix File has been re-uploaded in PDF format as requested.

Reviewer comment:
The author (Stephen M. Shortell) in your main document is written as (Shortell, Steve) in Scholar One. Please ensure that the author has same registered name.

Author response:
The author publishes under the name Stephen M. Shortell. The Scholar One name was registered automatically (as Shortell, Steve) in error and will be corrected.

VERSION 2 – REVIEW

REVIEWER	Sofia Georgopoulou University of East London, United Kingdom
REVIEW RETURNED	11-Jul-2018

GENERAL COMMENTS	Happy with the amendments made upon first review.