Author's response to reviews

Title: Healthcare Provider Attitudes Towards the Problem List in an Electronic Health Record: A Mixed-Methods Qualitative Study

Authors:

Holmes Holmes (cholmes4@partners.org)
Brown Michael (mbrown@uhs.harvard.edu)
Wright Adam (awright5@partners.org)

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Author's response to reviews: see over
Dear Drs Hanauer and Galanter:

Thank you for the insightful comments and feedback on our paper, “Healthcare Provider Attitudes Towards the Problem List in an Electronic Health Record: A Mixed-Methods Qualitative Study.” We have revised the paper in accordance with reviewer recommendations. Our point-by-point response to your review is included below. We feel confident that the revisions have addressed all major concerns, appreciate your further consideration of our manuscript, and look forward to hearing from you.

Cordially,
Casey Holmes

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Bill L. Galanter Comments

Reviewer: Bill L Galanter

Major Compulsory Revisions

1) The sample was a convenience sample from a prior study on problem lists. In addition, the response was somewhat low without any mention of PCP's vs. specialists responses. This process produces a sample that may be highly non-representative. To remedy this partially, more information about the convenience sample as well as differential response rates based on important clinician factors studied should be shown, i.e. Discipline, Role, Training status etc... As an example, I would like to know if the response rate was very different for PCP's than specialists for instance. This should be added to the response rate section of the Results as well as an explanation in the "Demographics of Respondents."

Another odd unexplained part of the convenience sample was that in the survey, PCP’s were 9:1 over specialists, but in the interview 1:4. It must have been deliberate, why was this done?

All these convenience sample issues should be listed in the limitations section. Yes, the sample was not designed to be representative and the respondents came from sources within the healthcare centers that were opportunistic rather than representative in order to ensure an appropriate level of participation. Additional information on the details of this convenience sample has been added to the methods and results section. For instance, that there is a disproportionate representation of PCPs in the online questionnaire respondent pool due to the types of departments that we were able to gain permission to participate in our study.
Unfortunately, demographic data is not available for non-respondents of the questionnaire since data was only collected on the specific individuals who agreed to participate in the study. These convenience sample issues have been added to the limitations section.

We feel this paper is most valuable as a look at the aggregate responses. There is obvious value in exploring how opinions can differ by various demographic factors, but believe that study would require a larger, more representative sample size than is provided currently.

Overall, details have been added to the methods and results sections to further describe our sample, and convenience sample issues have been added to the limitations section.

2) The survey instructions seem to be based on a model of a PCP driven problem list. The instructions ask the PCP what the PCP should do and asks the specialist what the PCP should do? This excludes the notion of the problem list being updated by a specialist which is a part of meaningful use and the Joint Commission standards. I am not sure why these instructions were given in this manner. In addition, these instructions were not consistent with the vignettes. Some of the vignettes asked about a specialist adding a problem, which makes no sense in the context of ”answer each question based on what you would want a PCP to do in order to create a problem list.” If I was a specialist, I would find these instructions contradictory to some of the vignettes. This issue needs to be explained further as clearly it is too late to change the instructions.

We agree that this could have been confusing to subjects answering the survey. One of the intentions of the in-person interviews was to identify changes to further improve the effectiveness of the survey as a data collection tool before implementing the online questionnaire. During these interviews, none of the subjects expressed confusion with the given instructions. Overall, subjects were able to understand that the goal of the survey was to consider different clinical perspectives. Based on issues identified during the in-person interviews, necessary changes were made to the survey prior to administering the questionnaire. Details have been added to the limitations section to further explain the inconsistency between the survey instructions and wording of certain vignettes.

3) In deciding which question had a majority of yes or no, 75% is somewhat arbitrary. Using a statistical test of the distribution being different than random (50% yes/50% no) seems less arbitrary. Based on this criteria, question #3 shows a majority answered yes (P=.001), as does question #6 (P<0.05), but these are listed as non-majority due to the a priori 75% cutoff. I think that a statistical test of yes or no being greater than by chance, or 1 SD or 2 SD is better than an arbitrary 75%.

I do not think that this arbitrariness is trivial as the number of contentious questions goes up or down based on an arbitrary definition of ”majority”. The discussion of Analysis of Majority Measures is based on this arbitrary decision as is table 7 with its statistical analysis and a significant amount of the discussion.

Our goal with the majority measure was to identify questions that received a clinically significant agreement in responses (more than 75% of respondents’ selected one answer). While using a statistical test to show the relation to the mean in terms of SD would be useful in identifying
statistical significance, the goal of this measure was to identify a clinically meaningful majority. Under the definition of majority currently used, for every one physician that said no, three physicians said yes, and we chose to this clinically significant measure over a statistical analysis.

Clarification of the clinically meaningful majority measure has been added to the data analysis section (to further clarify the definition of “majority measure” in this study), and results section.

**Minor Essential Revisions**

1) Table 3 is very confusing. It appears that "Role" has something to do with "Problem list Importance" as they are next to each other. There should be some type of thick line between the issues on the left and right to show that they are not related.
   We agree. Table 3 has been modified to address this issue. Also, Table 3 and Table 7 have been combined into one table (the current Table 3 in these revisions) to address another reviewer’s comment.

2) Introduction, Paragraph #1: "The problem list is a key part of the medical record that is used by clinicians in nearly every patient appointment" I don't personally think that this is true, but I do not think that it should be stated without a reference.
   The sentence has been edited to read: “The problem list is a key part of the medical record that is used across the medical community.”

**Discretionary Revisions**

1) "non-transitive diseases" Would just use chronic diseases or chronic diagnoses
   “Non-transitive diseases” has been changed to chronic diseases.

2) Background, Paragraph #4: "Unfortunately, as discussed below, the medical", "as discussed below", is not necessary.
   “as discussed below” has been deleted.

3) Survey Instrument, Paragraph #1: "highly debatable across practitioners" Would use variable instead of debatable
   Corrected

4) Validation, Paragraph #1: "medical" should be medically.
   Corrected

David Hanauer Comments

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Reviewer: David Hanauer

Major Compulsory Revisions

Reviewer's report:

This article focuses in the problem list in the electronic health record, specifically related to the thoughts clinicians have towards the list, how it should be curated, etc. It is very timely and is still a very important issue given that the problem list is so central to clinical care and still so contentious in terms of a lack of agreement about many facets of it. I do believe this paper should be published, and I also think it can be improved with some additional edit and details.

Major Compulsory Revisions

[1] Page 9. Regarding the vignette asking about a family history of cancer being added, I imagine the response will be influenced by what the EHR offers. For example, is there a family history section in the EHR? Is it used by clinicians? If not, why not? Among your respondents, did they have access to a family history section? I would think that such context would influence their answer.
Yes, there is a family history section that is partially integrated to the problem list in the EHR that is used at both study sites (BWH and MGH). Use of the feature varies considerably from clinician to clinician. The questionnaire and vignettes for this study did not require use of the Partner’s Longitudinal Medical Record, but our respondents would have been accustomed to using this EHR and aware of the family history section available to them.

[2] Page 11. The respondent pool was based on access to departmental e-mail lists. Did any departments not provide the lists? If so, which ones.
One specialist division at BWH was asked to participate, but we received no response from the director. This information has been added to the appropriate section on page 11.

[3] Page 12. I am a bit unclear about how to interpret the "completeness measure" and the "majority measure". What is the advantage of reporting this as opposed to just the total number who agree versus disagree?
Analyzing the responses under these two measures allowed us to further explain the depth of variance of the data we collected through the survey tool. These measurements allowed us to perform a quantitative analysis of the broad view clinicians have on documentation in the problem list. Also, this analysis provided the opportunity to not only identify who agreed vs. disagreed, but also understand how individuals agreed vs. disagreed and to what extent the individual opinions diverged from the mean.

[4] Page 20. It is stated that "78% answered that the specialist should put a problem they diagnose in the problem list". Is there any breakdown available by specialty (any difference, for example between PCP and specialists?)
Yes, the findings between PCP and specialty responses to the vignette related to whether the specialist should add a diagnosed problem to the problem list are as follows:
Of note, respondents who defined themselves as PCPs or Specialists largely answered with the same high percentage that the pulmonologist should add the diagnosis to the problem list. Granted the total number of specialists responding was very low at 6 respondents for this question.

Of interest, those who defined themselves as “other” to the question of “Are you a PCP or Specialist” appeared to answer as a group differently than those who defined themselves as specialists and PCPs. We do not have much information on this group that defined themselves as “Other.” All had clinical experience as all these respondents answered that they were either an MD, PA, RN, or NP. Unfortunately, there is not enough data to successfully determine why this group felt differently on the ownership question compared to those who defined themselves as PCPs and Specialists. Further, the sample size is low that it would be difficult to reach statistical significance.

[5] Page 20. "a medical resident reported that nurses and doctors do not currently add new diagnoses to the problem list during inpatient care." Really? How do inpatient diagnoses ever get on the problem list? This was the response of the study subject. At BWH and MGH, clinicians do have the option to add to the problem list during inpatient care. This issue requires more research and a larger sample size to explore the entirety of inpatient care attitudes towards the problem list and the viewpoints on inpatient nurses adding to the list. This clarification has been made on page 21 and mentioned in the limitations section as well.

[6] Page 21, "Non-residents answers with more 'yes' responses." Yes to which questions? This is referring to the 13 vignette styled questions with strictly ‘yes’ or ‘no’ responses. The appropriate clarification has been made to this section of the paper [page12-13] and Table 3.

[7] Page 25. I am very perplexed about the HIPAA comments, and the concerns that adding some problems might be a HIPAA violation. You really have clinicians that are concerned about adding to the problem list because it might be a HIPAA violation? Perhaps it is me who doesn't understand HIPAA well enough, but as far as I know a clinician can add anything clinically relevant and true to the medical record without worrying about HIPAA. HIPAA allows very unrestricted use for patient care.
issues would come up if the decision was made to share data outside of a 'covered entity'. But for patient care within the confines of a single health system I would have thought this would be a non-issue. This may be worth addressing further because if it really turns out that many clinicians are concerned about this, then I think some major education is in order.

Yes, the comment from the subject does express concern about adding to the problem list because of confusion surrounding HIPAA violations. Yes, this subject’s concern is misplaced since this type of communication within the confines of a single health system would be a non-issue. We agree that this represents a misunderstanding of HIPAA by the interviewee and represents an opportunity to increase HIPAA training and education. This represents another weakness created by a small sample size, and the limits of the small sample size has been included in the limitations section on page 27-29.

[8] Table 3. It is somewhat unclear why "problem list importance" is listed with the other 'demographics' measures. The table might be organized a little differently, and it might help to have tables 3 and 7 at least be formatted in a similar manner. Also, in terms of "Experience", Experience since when? residency? Medical school? years working at the institution? self-defined for each participant?

In recognition that the importance measure was not a true demographics measure, we changed the language to reference these criteria as provider “characteristics.” Table 3 and 7 were combined as well. In the questionnaire we asked them how many years the subjects have been practicing medicine. Therefore, “experience” is self-defined for each participant.

[9] Table 5. Will this be included in the manuscript itself or referred to in an appendix? It is not clear from how it is included in the paper. "see additional files"

This table has been included in the paper.

[10] I would like to refer you to a recent paper of ours that I think would be of great interest to you and which seems to have a lot of overlap in terms of the concepts covered regarding the problem list. It is not listed in PubMed as far as I know:


We would be happy to send it to you if you are unable to find it online.

We were able to find a copy of the above mentioned paper online. We appreciate the referral and have included a relevant citation in the background section of our paper.

Minor Essential Revisions

[1] Page 10, change "medical accurate" to "medically accurate".

Corrected
[2] Multiple pages, change "two prong approach" to "two-pronged approach"
Corrected

[3] Page 11, for the sake of brevity, I don't think it's necessary to include that REDCap was hosted at Partners Healthcare
That detail has been deleted.

[4] Page 11, I would suggest re-wording the paragraph starting with "In formatting" to make it more clear.
Re-worded for clarity

[5] The word "data" is plural. Thus, for example, on page 12, it should read, "The data from the online surveys _were_ aggregated…"
Corrected

[6] Page 15, possibly change "This category covers if content" to "This category covers whether content"
Corrected

[7] Page 15, you can change "(No. 92%)" to simply "(92%)"
Corrected

[8] Page 23, change "questionnaire gave hard quantitative evidence" to "questionnaire provided quantitative evidence"
Corrected

[9] Page 23, "change "a decent sample size was that residents answered for less to be included" to "a decent sample size was that residents wanted for less to be included"
Corrected

[10] Page 24, Can delete the phrase "based on the study" and the sentence under recommendations will read just as well.
Corrected

[11] Page 26. change "include everything" to "all inclusive"
Corrected

[12] Page 27, remove the semicolon after "but in most situations"
Corrected

Discretionary Revisions

[1] Page 3. Regarding the clutter. One person's clutter may be another person's 'treasure', which is certainly related to the 'no common approach' problem. But it is possible that there are differing needs from various clinicians. Certainly in our general pediatrics clinics we do want to know how many ear infections a child has had, because this might help us
decide if tubes are necessary. Other clinicians think ear infections are temporary and minor and should not even be added to the problem list.
This is a valuable point. The idea of including separate problem lists within a patient health record, such as a “specialist list,” is a topic of recent discussion. This presents an opportunity for further research in order to better understand the potential benefits of segregating the patient record in such a way and how these separate problem lists would relate to each other in terms of reducing clutter. We feel that this research falls outside the scope of the current paper.

[2] Page 5 I also believe a problem list may be a Joint Commission requirement.
Yes, a problem list is a Joint Commission requirement. We briefly mention that The Joint Commission does have policies related to the problem list on page 7 under the “Current policies lack guidance for practitioners” section.

[3] Page 13: Top line. Was this about the importance of the problem list in general or specific aspects of the problem list (such as specific problem to be added)?
In the questionnaire, this specific question is worded as, “...how important is the problem list to your everyday practice of medicine.” The text has been edited to include this description for clarification.

[4] Page 13: "It was found that some non-clinicians were included in department mailing lists..." Any idea how many "some" represents?
This statement has been removed from the results section and included in the limitations section. The non-clinicians that would have been included in the department mailing lists consist of administrative staff. Although small, the number of administrative staff differs from department to department, but it is not a 1:1 ratio of non-clinicians to clinicians. While non-clinician recipients may have brought the response rate down, it would not have been reduced significantly. Further, the questionnaire was designed to ensure only persons with clinical backgrounds responded to the demographics and vignettes so the actual responses to the vignettes were not affected by sending the questionnaire to administrative assistants as long as they answered the first question truthfully.

[5] Page 13: Any thoughts as to one one practitioner did not want to answer the vignettes? Was it a time constraint?
The one practitioner who chose not to answer the vignettes was an emergency room practitioner. This individual did not believe in the fundamental premise of the study, and did not feel he could adequately make assumptions as to what other people should do with the problem list, thus rendering all our vignettes ineffective. More detail as to why this individual did not answer the vignettes has been included in this section of the paper.

[6] Page 13: "across a variety of disciplines and experience levels". I think this should refer to table 3 or 7 where this is detailed further. Also, is any more detail available about what specialties were included? And what kind of PCP? Mostly internal medicine? pediatrics? family medicine?
We agree, and references to Table 3 (which now represents the combination of Tables 3 and 7 in response to reviewer comment #8) and 4 have been included. The research team did not collect
detailed information about the departments, specialties or types of PCPs included in the study in order to ensure anonymity of our respondents.

[7] Additionally, there are some redundancies between the text and the table. For example, the top of page 14 describes multiple breakdowns by experience. Since this is already described in the tables it probably does not need to be repeat unless there is something specific to highlight of importance. This section has been cleaned up to eliminate redundancies and focus on explaining study findings and identified correlations.

[8] Could tables 3 and 7 somehow be combined/? Table 3 and Table 7 have been combined into one table (the new Table 3).

[9] A point that might be made based on the findings is that some people may view the problem list more like an "actionable items" list, which may be why some family history may be worth including in certain circumstances. This is a valuable point, and presents an area for further research. However, we feel this falls outside the scope of our current paper.

[10] Page 17, I am unclear what is meant by "... they wished to include more detail in the language used on the problem list than less". I think it would benefit from being re-worded and explained a little more clearly. This sentence has been re-worded and further explained for clarification.

[11] Page 18, regarding the clinician that didn't want to add back pain because a patient may never ask about it again: what if the patient was hoping that the MD would bring it up again since it was already mentioned (i.e., "is your back pain any better")? but just dropped the issue when it seemed like the clinician was not taking an interest in the issue. Out of sight, out of mind? We agree that patient intentions and the patient-physician relationship as it relates to documentation on the problem list is something clinicians should be thinking about and also presents an area for further research. This is not a topic our research dived into.

[12] Related to 15, there is an interesting point to make: Most of the people who responded were PCPs, and the majority seems to feel that the specialists should add a problem to the problem list. Yet later on it is stated that "most specialists expressed that adding to the problem list... would be an incursion on an area of the medical record owned by the PCP." So it begs the question: Do specialists not add problems because they think they should not be doing it, or because they think that the PCP does not want them to do it (which is apparently not the case based on the data).

We better qualified the quote on page 21 now to “some specialists” vs. the original language of “most specialists. During the in person interviews, specialists either expressed that they did not find it relevant to their work or that they felt it was an incursion on the PCP’s territory. The data cannot provide a concrete answer to your specific question on where the specialists believe the
restriction lies as we did not ask that question. The data does point to the disconnect between the PCPs and Specialists on the ownership question and that a policy could bridge this gap in perceptions. More information on this topic has been added to the discussion section as an additional analysis of the data.

[13] Page 21. I am unclear about the value of the section called "Analysis of the Completeness and Majority Measures". It might be better just to highlight some key points and make the section smaller. The value of this section was to provide aggregate analysis of all the questions as it is difficult to take away overall summaries of the data as each vignette approached a different topic of the problem list. The intent was to provide a more quantitative and scientific analysis of the data in order to increase the depth of analysis of the data. We feel that the questions discuss different topics and are worthy of inclusion.

[14] Page 22. The discussion mentions the idea that practitioners differ in what should or should not be added to the problem list. But was it at all considered that one might simply change the 'view' of what can be seen? For example, maybe there could be a 'specialist only' view, so that they could add their problems which the PCP could choose to view or not. Yes, that is technology we have discussed in our own conversations about potential tools that could improve the value of the problem list for practitioners. However, a key concern about having different views of the problem list is that the filtered lists could block important information that would have otherwise been seen on the complete list. It is a tool that could have great value, but would need further research and testing to ensure high value. The hope is this paper will encourage others to build such tools to help practitioners gain more value from the problem list.

[15] Workflow issues do not seem to have been covered in this paper. However, they can be important in terms of how one might approach a problem list. For example, I think some EHRs allow users (at least on the ambulatory side) to add to the problem list based on their billing coding. This is a valuable point. There are different methods of updating the problem list, but analyzing the problem list from this angle was out of the scope of the paper.

[16] Page 24. The quote on this page is perplexing. This clinician is stating that they would comply if told to do so by administration, but isn't their thought to be a need for patient care itself? We agree. This comment represents the opinion of the interviewee, but clinicians should be considering the impacts of the problem list on the quality of patient care and only use administrative actions as an encouragement to encourage quality care.

[17] Page 25. "Some practitioners found the information irrelevant to how they would treat her. . .". I believe a lot of these issues may stem from potential limitations on where else such data can be stored. That context may be important in understanding the responses in this paper. If there was a logical place to put such information elsewhere that was easily
retrievable then that would be different if there was only a problem list for diagnoses and no other "lists" for other potentially clinically or socially relevant concepts. This is related to the sentence on page 26 which states "they want the option to include anything". Again, maybe more flexibility in EHRs would help solve the problem and reduce the conflict surrounding the problem list.

We agree, and it is possible that these issues stem from specific artifacts of the particular EMR we use. We do think there is a fine balance in flexibility in the record to standardization. Studying this balance certainly requires more research as it relates to the problem list and all sections of the record, particularly as the healthcare community is driving towards more standardized documentation with program such as Meaningful Use.

[18] Page 28: Any thoughts on what a policy should look like related to the problem list? And do we really need a common approach? Or could we support multiple approaches with additional views and ways to slice the data in an EHR

In conjunction to gathering information for this study, we also contacted CIOs at Stage 6 and Stage 7 healthcare centers as rated in HIMSS Analytics to ask if they had any problem list policies and were able to collect a handful. In a review of these policies combined with the knowledge gained from this study, we put together a framework of what questions would need to be answered to create a comprehensive policy on the problem list. We are hoping to also publish this information in the near future.

On the common approach, we do believe a standardized approach to the problem list needs to be developed in order to gain more benefits from the problem list such as use of clinical decision support and population management tools.

We do support finding better ways to sort and organize data within the EHR. For instance, at Partners a search tool of the EHR is under development which would enable practitioners to more easily grab information out of the EHR. Yet, a key concern with additional views is the likelihood of missing important information. We believe that there has to be a foundation or common guideline for the data that needs to be placed in the record and then tools can be built off this foundation to increase the quality of how practitioners can use and analyze that data to provide better care.

[19] I am somewhat lukewarm about Table 6. If there is an issue of space I think it could go.
We are agreed that Table 6 is the least relevant of all the tables, but think the spread of majority and completeness measure may be of interest. We will choose to keep the table in the paper currently.