Reviewer's report

Title: Multiple perspectives on clinical decision support: a qualitative study of fifteen clinical and vendor organizations

Version: 4 Date: 18 November 2014

Reviewer: Benjamin Brown

Reviewer's report:

This is a qualitative study, so I have used the COREQ checklist to guide my review.

The authors should be commended for studying an important research question and for collecting an impressive amount of data. Understanding how clinical stakeholders, CDS and EHR vendors differ and share thoughts on CDS is essential to progress the field. The research methods used are appropriate to answer the research question, but in my opinion 2 things are needed before the paper is published: 1) the quality of reporting should be substantially improved; 2) either a more conceptual analysis is needed to support the conclusions as they currently stand, or different conclusions need to be drawn based on the current analysis.

Major compulsory revisions:

• Authors state that a “grounded theory analytical approach” or “grounded theory content analysis” approach was used, though it is unclear what this means exactly. My understanding of Grounded Theory is that it explicitly attempts to build theory, that coding goes through 3 stages (open, axial, selective), that there is an iterative approach to data analysis and data collection guided by theoretical sampling and thematic saturation, and that deviant cases are actively sought to test the developing theory, amongst other things. Those things do not appear to have happened, and the analysis as it currently stands may be more accurately described as a thematic analysis that used an inductive approach to synthesis. A “constant comparative” approach was used, but there is only mention of comparison across different groups of participants, whereas constant comparison, should also look at the totality of data as new data is analysed. If a truly “grounded theory” approach was undertaken – then further detail on the process is needed. If it did not happen, then this needs to be clarified: rather than simply labeling the approach as “grounded theory” it would be more transparent to be explicit about the actual data analysis steps taken. This may well include aspects of Grounded Theory (such as open coding) but in its totality may not qualify being called Grounded Theory. Either way, more detail is needed on the steps taken during analysis.

• The results as they stand appear to merely present descriptive themes and do not necessarily support the recommendations drawn in the discussion section of the paper. If the label of “grounded theory” is to be used, then a more conceptual
/ theoretical re-analysis should be required. Authors may find that if a more conceptual/theory-building approach is taken to analysis, then their the transparency of how they arrived at their recommendations in the discussion section may be more supported.

• More detail is needed about the data collection process: Were there any audiovisual recordings of interviews/observations, and if so, how many hours? Were they transcribed? What exactly was observed e.g. meetings, clinical encounters etc? Were other people present that could affect the interviews / observations (e.g. managers / patients)? Where did the interviews take place that were not undertaken over the phone? Was a framework used to classify observations in the field? What role did the observers take (presumably complete non-participating observers, but it would be nice to have that clarified)?

• Given that “CDS challenges” is central to the paper, it would be useful to have more information about what exactly was asked during the interview process in the interview topic guide rather than simply “challenges”.

• More detail of the data analysis method is necessary: how many “pairs” of coders were involved? Did they code independently?

• Quotations need labels about which participants said them.

Minor compulsory revisions

• Authors state interviewers “practiced reflexivity” by noting personal thoughts in fieldnotes and were careful not to ask leading questions – but this is only one aspect of reflexivity. In particular, it was unclear what participants knew about the study, or the researchers in terms of their goals, background experience etc – and author’s reflections on how this may have affected the responses / behaviour of the participants. For example, if any of the interviewers were practicing clinicians that used EHRs / CDS this may have influenced the responses of the vendors and thus should be acknowledged.

• It appears that all participant groups were purposively selected. If so, it would be worth stating that rather than saying it explicitly for only one group, which is currently the case.

• More detail on how individual participants were selected and approached is needed. Were they purposively selected too? How were they approached? Did any decline? And, if so, for what reasons?

• More detail on the characteristics of the participants would be appreciated: How many people were interviewed? What are their demographic data / occupation / experience with CDS?

• Clarification of what “verification interviews” means would be useful.

Discretionary revisions

• Was the interview schedule pilot-tested or modified at all?

Level of interest: An article of importance in its field
Quality of written English: Acceptable

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

Declaration of competing interests:
I declare that I have no competing interests