Reviewer's report

Title: Redesign of a Computerized Clinical Reminder for Colorectal Cancer Screening: A Human-Computer Interaction Evaluation

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Reviewer: Ayse Gurses

Reviewer's report:

This is a great example of applications of HCI in health care. I like the fact that the authors used a “prototyped” version of the current system, rather than the current system to ensure a better experimental design. Here are some comments.

• Major Compulsory Revisions

The authors state that the redesigned prototype includes a patient education resource (one-page synopsis of CRC screening). Is this customized/tailored based on the patient (demographics, patient’s previous adherence history with the recommended screening guidelines etc.). If not, I definitely understand the one participant’s comment about having these forms pre-printed as the redesigned system does not have much advantage over the old system with regards to patient education.

The authors state that they are using the Workflow Integration Survey as a measure, which is in press. It would be a good idea to include this accepted manuscript along with this submission, or at least the instrument itself with its psychometric testing results for the reviewer to make a more informed judgement.

Also, what are the three questions they appended to CSUQ? Are these the questions in Table 2? Not clear.

In their statistical analysis, the authors state that “they grouped similar usability questions together”? How? Did they do any factor analysis? If not, after they grouped the items, did they treat them as scales (if so, need psychometric properties) or as index? Please clarify.

Under the “Qualitative Analysis” section, the authors talk about “the open-ended debrief interview notes.” Can the authors explain this in more detail please? How was the interview conducted, was there an interview guide etc.? I don’t remember seeing this. If it is already described in the manuscript in detail and I missed it, then please ignore this comment.

The authors state that they clarified CSUQ instructions after a participant’s confusion. Can the authors please comment on whether they have pilot tested these instructions specifically for this experiment (before they conducted the
Table 1: I am curious about how the “workload” measure in this table differs from NASA-TLX. The authors comment on the issue that these two measures give different results and include this in their discussion. But it would help greatly to the reviewer if they can explain the “workload” measure included in their Workflow Integration Survey in more detail so that one can judge the similarities/differences with NASA-TLX better.

The authors state that they had a hard time recruiting participants. I was wondering whether the authors can describe what type of incentive(s), if any, they used for recruitment. And also how did you overcome these difficulties (what strategies you used)?

How did you come up with the redesigned prototype? If this is already described in another paper, maybe you can include just couple sentences describing this in this manuscript to out things into context for the reader.

• Minor Essential Revisions

It would be great if either the authors or the journal submission system inserts page numbers. That would have made the reviewer’s job much easier.

Under the Results section, second paragraph, the authors refer to Table2. Have they referred to Table 1 earlier? Again, I may have missed it but the authors may want to make sure the ordering is correct.

• Discretionary Revisions

The authors highlight the importance of iterative design. This manuscript would have been much stronger if the authors “redesigned” the redesigned prototype based on their findings and test it further. But I understand that this take time and resources.

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.