Reviewer’s report

Title: A Study of General Practitioners’ Perspectives on Electronic Information Management Systems in NHS Scotland. Mixed-Methods Analysis of Barriers and Facilitators

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Reviewer: Arild Faxvaag

Reviewer’s report:

This is a report of GP’s opinions and experiences with using information systems in their practice in Scotland. The research is part of a larger study on "information management processes in the patient surgical pathway in NHSScotland". The authors have done 23 semi-structured interviews and analyzed the data with a mixed-methods approach. The results are interpreted within the framework of Normalisation Process Theory.

Comments:

1) The introduction fail to develop a proper research question. I think it should. I also have questions on the "what is known" parts of the introduction. The manuscript can be classified as an summative evaluation. Some references to other evaluation studies should be included (see http://evaldb.umin.at/index.htm).

2) Background & Related Work is divided into Primary care computing in NHS Scotland, and Information technology in the patient consultation. The section about Primary care computing in NHS Scotland is a description of the case and the "business model" of GP practices. The description of the case should also include a description of the information system(s) at hand. From reading the rest of the paper, it seems that the developers of the information system has implemented some features that acts as incentives for GPs to use the system. Which are these, (and, in the discussion section: Do they influence on use (and satisfaction)?

I also miss a general description of what Scottish GP's do — i.e., if possible, a general description of their clinical work. Most important: a) What are their tasks? and b) Why should these deserve better support from an information system?

3) Methods: Some aspects of NPT is introduced in this section, which leads me to ask whether this section is the proper place for it. Better to put it into a theoretical introduction?

4) Results: Quantitative Analysis: The author should say something about the representativeness of the sample. Were the 23 GPs the 23 Scottish GPs most eager to comment on their GP information systems? Were they only GPs, or had they also doubled as participants in a requirements engineering process before the system was commissioned and/or participated as "superusers" when the
system was implemented.

5) Results: Thematic Analysis: This is OK.

6) Interpretation & Discussion: According to the author, Normalisation Process Theory "is concerned with the social organisation of the work (implementation) of making practices routine elements of everyday life (embedding) and of sustaining embedded practices in their social contexts (integration) and was developed particularly in response to the evidence, which suggested that eHealth implementation, embedding and integration are difficult to achieve in practice".

Some of the concepts used in the manuscript originate from other theoretical frameworks. Usability is a key construct in the research field of Human factors / Human-Computer interaction. Discoverability and learnability are other key concepts. How to discover new features, (and how to learn them) is obviously an issue for the GPs.

Maybe this should be mentioned?, i.e. that other theoretical lenses could have been applied? This is not a study of the development of the information systems, neither of it's designers. But any information system is a human construct, and any human construct is influenced by theory. Human factors researchers have operationalized their theories into guidelines for user-centered design, and into how to test the usability (and learnability) of their systems. What are the implication of the results for those who design and develop such systems?

I think the author also should discuss other possible means of gaining access to the same problem space. Do the author plan to observe GPs use of their systems? What about monitoring the use (from logs of the system). The possibility of triangulating is an issue.

**Level of interest:** An article whose findings are important to those with closely related research interests

**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