Reviewer’s report

Title: Healthcare Information Systems: The Cognitive Challenge

Version: 0 Date: 08 May 2017

Reviewer: Felicity Callard

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This could be an interesting and necessary contribution to the journal since it makes its points with clarity and concision. The major difficulty at the moment is that the article does not adequately acknowledge that there is a significant body of research (from a number of different disciplines, particularly sociology and user-centred design) that has addressed the inadequacy of a narrow technological focus to the design of EHRs using arguments that are similar to those you are interested in making (e.g. see the research by Trisha Greenhalgh). The article needs to acknowledge more substantively the conceptual and empirical research that has already been done - both by mentioning briefly the contributions of this research and by citing more of it. (You might also then want to critique it for not attending to the specific nuances that you want to explore in your article.) Ensure that you do a quick literature search to check you have picked up some of the key articles (NB many of the existing references are from a number of years ago, and the paper does not demonstrate that much engagement with the more recent - and ever growing - literature).

Additionally, the article needs to justify why it turns to particular case studies - it's fine to pull out particular pieces of research, but at the moment they appear without the reader having a sense of why this example rather than another one. Finally, more work needs to be done to explain what you mean by the 'healthcare community' - it is not simply healthcare practitioners who need to be involved in terms of understanding their cognitive capabilities, but patients and carers (as some of your examples attest).

More specific requests are listed included below:

Abstract and elsewhere: 'Natural cognitive capabilities and skills' - what appears natural is very much indebted to the ecological and cultural contexts in which cognition operates and is honed; I suggest removing the term 'natural' and using simply the phrase 'cognitive capabilities and skills'.

Acknowledge other things beside the cognitive - eg the affective -- which have a bearing on how information systems are used, and the difficulties that they can face.

p.4 You need to justify your selection of the case studies / the papers you interrogate.

p. 6 'Healthcare involves a dynamic mix …': what about the affective components? It's not just physical and cognitive.
Presumably, those involved …' - this sounds speculative; it would be preferable to turn specifically to the existing research that has been done on this existing case study rather than to speculate about the intentions of those involved in the development work.

Facing the challenge - it's fine for the article to centre on cognitive systems engineers, but it would be good to acknowledge here (and perhaps cite an example of) other crucial contributions from those with other sets of expertise.

'healthcare community' - this needs to be unpacked. Who makes up this community? It's surely a range of heterogeneous clinicians, plus, crucially, clinical managers, patients and carers. I would argue that all should have a stake in the design - not least because they have differing priorities and different ways of mobilizing their own cognitive capabilities. For example, in relation to the colorectal screening example, it would be crucial to ensure that patients are consulted and involved alongside practitioners to explore why there might be resistance to having the checks - it's not necessarily simply a case of 'educating' the patients about the 'right' medical thing to do.

What motivates your selection of the particular case studies?

Discussion - you mention 'experts'. Who are the experts? They surely include patients in certain respects, since arguably patients are expert in managing their own conditions. It would be worth extending this paragraph to explore what exactly you mean by expertise.

In relation to the previous point - surely then you need to track the cognitive capabilities of healthcare practitioners and of patients (and of carers).

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
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No

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