Reviewer’s report

Title: Perceptions of factors influencing the introduction and adoption of electronic immunization registries in Tanzania and Zambia: a mixed-methods study

Version: 0 Date: 06 Nov 2019

Reviewer: Emma Quinn

Reviewer's report:

REFEREE COMMENTS

ISC-M-D-19-00016

Paper: "Perceptions of factors influencing the introduction and adoption of electronic immunization registries in Tanzania and Zambia: a mixed methods study"

Date of comments: 06/11/2019

Overall comments on value of article

The authors have certainly presented a paper that adds potential value to the scientific literature around the factors that aide in the scale up of mhealth applications in Africa. The design, implementation and evaluation of mhealth applications globally is a burgeoning area of public health, however rigorous evaluations are needed to understand the cost-benefit of these applications in reference to existing services or other technologies, as well as the factors that aide in the scale up of these technologies. Although the overall structure of the paper is relatively sound, a major revision is required in order to more clearly and succinctly articulate the flow of logic between the sections of the paper and communicate the key findings. The intervention and evaluation are somewhat complex, so it is hoped that the feedback below will help the authors articulate their evaluation to a more naïve audience, unfamiliar with MAPS and this particular mhealth application.

Recommended changes

Overall comments on paper

* I believe the authors lack clarity between their concepts of introduction, adoption and scaling up of their mhealth application. Although it is reasonable to say that both introduction and adoption are factors that might assist in scale up, the authors use these terms inter-changeably as if they mean the same thing. Further clarity within the introduction would be helpful to put the methods, results and discussion in better context. See Milat et.al (2015) Implementation Science Journal.
Overall there are too many abbreviations used in this paper and it becomes a little difficult for the reader to remember these acronyms throughout whilst reading the paper. I suggest cutting down on a few acronyms as appropriate for the word count. E.g. LMICs, NGOs, UAGs, HMIS etc.

It would be most helpful if the authors had a paper they could reference and refer to in their introduction that explains in detail the design and implementation of the EIRs across both countries.

Some double checking of English language grammar and sentence construction would be helpful. Overall the writing is of good quality, but there are issues with tense, too many adverbs, lack of conjunctions and long sentences. E.g. "the" and "of" are missing in some places, "has" rather than "have" should be used in some instances. Check lines 79, 80, 86 etc. for conjunctions and line 91 re: adverbs "multicomponent data use capacity building complex intervention package". E.g. what is an "endgame strategy"?

Specific comments on sections of paper

Introduction

Ref lines 74-78 - the increase in uptake of DHIs may also be related to national funding priorities and resource allocation and investment in scaling up, not just "pilotitis"?

Ref lines 85 - "amongst" is an awkward use of the English term, perhaps "to assist in the delivery of immunisation programs has shown promise".

Clarity is needed that the evaluation EITHER relates to both the pilot period and then the wider roll-out of the app across both countries, OR just the wider roll out. Suggest that Figure 4 is referenced in the introduction.

Methods

Was ethical approval obtained to conduct this research? If the research was conducted under the guise of a quality improvement initiative, then it should be stated by ethics approval was not sought and how ethics in relation to conduct of the research was maintained.

Key informant interviews - a questionnaire or list of questions should be referenced in this section, or provided as an appendix or supplementary material. Further detail about how the interviews were conducted is needed e.g. administration, recording of interviews, translation, confidentiality of data etc. Were the key informants selected to ensure diversity of roles and level of involvement?
Conceptual framework - is Figure 1 the actual list of domains and axes that the authors used in their evaluation of the application (adapted list from reference 11), or is it a reproduction only? Suggest Figure 1 clearly labels the domains and axes used in the evaluation. Also for readers not familiar with MAPS, some definition of the axes would be helpful e.g. what does "outreach and sensitisation" mean in the context of the operations of the app exactly?

Lines 173-174 - "domains not covered in the reviewed documents were prioritized in the key informant interview questions". Does this mean the desk review was carried out first and informed the question development of the key informant interviews? If so, I suggest restructuring the methods section to reflect this.

Desk review - how did the authors decide that the document being reviewed had met the domain/axes or not?

Lines 178 - list the health facility characteristics you summarised here.

Results

If the authors recruited 14 key informants, why did only 12 participate? Did 2 participants refuse interview? Why? Why not?

Desk review - how did the authors choose the most appropriate documents for review? Line 194, "Of the available documents, 23/x were deemed applicable"? What does this mean?

Were there any direct quotes to support the results and findings?

Some statements in the results section should be placed in the discussion section, as they relate to the interpretation of findings and/or recommendations. See lines 245-246.

The authors may wish to consider adding a summary table of the key themes by each domain/axes in their results section, to help summarise the findings for the reader, but also better communicate the key findings. This may also help with picking out the key findings in the discussion section.

Discussion

The authors may wish to consider adding a section on key recommendations for the future in regards to the sustainability of the EIRs in both countries, but also potential expansion of these EIRs into other African countries.
Conclusion - I didn't get a sense from the author's results that community sensitisation was a key finding/theme. Also what does "sustained at a sufficient scale" look like or how would it be measured or reported on? What does sufficient mean?

Also given that the MAPS framework was used retrospectively in this instance to evaluate the implementation of this mhealth app, could a recommendation be to use this framework prospectively in the future to improve the design of the implementation strategy moving forward?

Tables and Figures

Inconsistent reference to Tables and Figures in main body of the article, including use of brackets, reference before and after full stops etc.

Referencing

Some of the references are inconsistently referred to in the body of the main article. I'm not sure of citation style for this journal, but recommend authors ensure consistent styling in their citations throughout this paper. For example; it is not best practice to have references for a sentence placed after the full stop.

Not entirely sure what Reference #1 is or how it supports the claim in the body of the text. Authors may wish to review this reference.

Ref #13, I understand authors may wish to cite their colleagues' relevant work in reference to this article, but generally only articles accepted and in press should be referred to in the bibliography. Suggest the status of this paper is updated if accepted or removed if not.

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