Author's response to reviews

Title: Institutional strengthening in health systems research: Experiences with a capacity assessment tool in seven East and Central African schools of public health

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Version: 2 Date: 24 February 2014

Author's response to reviews: see over
REVIEWER: DONALD COLE

An important piece, good rationale, and nicely designed and implemented. Great to have a methods piece on this kind of work – not enough in the literature! Throughout, some parallel processes going on:
1. the assessment of capacity;
2. the development of implementation plans for capacity strengthening;
3. the mobilization of political will, resources etc to implement capacity strengthening; and
4. review and reflection upon each of the above processes

Major Compulsory Revisions
1. Currently, some lack of clarity among these (although the sequential process figure helps some), as per the Abstract – Results – sentence 3 “...implementation of capacity assessments” or capacity development plans? Or last paragraph of the Introduction “....the actual implementation process” of 1) or 2) or 3) above or a combination of all three?

Thank you for pointing out the confusion. It is indeed the implementation of the capacity assessments that depended on the 4 factors outlined in the abstract. We have altered the wording to read “capacity assessment exercises” and reorganized the sentences in the abstract for better flow. The results section now reads:

Results: The assessment tool was robust enough to be utilized in its entirety across all seven SPHs resulting in a thorough HSR capacity assessment and a capacity development plan for each SPH. Successful implementation of the capacity assessment exercises depended on four factors: (i) support from senior leadership and collaborators (ii) a common understanding of HSR (iii) adequate human and financial resources for the exercise (iv) availability of data. Methods of extracting information from the results of the assessments, however, were tailored to the unique objectives of each SPH.

Introduction
2. 2nd last paragraph. Authors cite references (21-23) of submitted papers cover both findings from 1) and perhaps 2) and 3), while this paper does more on the methods for 1-3 and findings of 4.

However, the Introduction’s last paragraph, findings ii) confused me i.e.” the key outcomes of the assessment”. I know the challenges of splitting up a complex process into multiple papers in order to capture the richness and share more of the results, but I need clarification of the distinctions you are making and what you want to share in this paper.

In order to clarify the intentions of the paper, we have replaced the word “implementation” to “capacity assessment” in the final sentence of the introduction. We had originally intended to mean the implementation of the tool but realize that it can easily be misinterpreted as the implementation of capacity development plans. The sentence now reads:

The findings section presents (i) the actual capacity assessment process and how it varied across countries (ii) the key outcomes of the assessment and (iii) the factors that affected the assessment process.

Methods
3. The sources, tools and definitions provide an implicit sense of what the ideal HSR capacity would be – would be worth making this explicit however i.e. what ideal is the shared benchmark against which assessment of gaps, areas of development lie?

We thought this an interesting suggestion, and have discussed it, but are concerned that a full description of “ideal HSR capacity” would be contentious, and take up considerable space to justify. Accordingly we concluded that for this paper it would be better to leave this implicit.
Clarifications for 3rd paragraph:
4. “The implementation process and the structure of the self-assessment tool drew upon a similar tool” and process? “developed by the Canadian Health Service Research Foundation that seeks to examine the capacity of organizations to acquire and apply research evidence.” SPH are somewhat different than the intended group for the CHSRF process and tool. Was this adapted for the capacity to generate evidence, and teach or train to generate?
We have added more information on this in the methods section to better articulate the CHSRF tool as well as referenced a publication in 2009 regarding the use of the tool. The text now reads: “The proposed implementation process and format of the tool drew upon processes recommended for a similar tool developed by the Canadian Health Service Research Foundation that seeks to examine the capacity of organizations to acquire and apply research evidence [26]. The CHSRF tool combines individual self-assessments with discussions across the organization that aim to stimulate action to address identified weaknesses.”

5. Modules have different identifiers I, II, III than the components in the supplementary file (A-D). Why? I tried to start matching e.g. III to D, but was not sure that I did it correctly. I would stick with the 4 in the supplementary file, use the same lettering.
Thank you for pointing this out. We have changed the text to read components A-D in the manuscript as well.
In addition we have explained module II to now read:

Component **B and C: Profile of health systems research within the institution.** The first form, completed by the faculty team leading the assessment, captured objective data about the number of staff working in HSR, their relevant skills, and the type of work they conduct. The second involved interviews with key informant within senior management at the institution.

4th paragraph.
6. Module 1 self-reports “faculty” indicated but instructions in supplementary file indicate a wide range of staff of different kinds.
Thank you for pointing this out. We have altered the text in the manuscript to read “faculty and staff” rather than “faculty” to allow for the deliberate inclusion of members of the SPH who are not technically “faculty” but still involved in HSR.

7. “…The data was captured electronically using Microsoft Excel software”. I wondered right away whether they completed it in Excel, or transferred to Excel? I see in the first section on implementation perhaps refer here to Findings on implementation below, so that the reader realizes how it was done differently is part of your findings on method feasibility and process.
Upon review, the intention was manual collection on paper with subsequent transfer to excel for analysis. We have corrected the sentence to read: “The data was captured on paper and transferred to electronic Microsoft Excel format.”

5th para.
8. Be careful about using the term “simple” for forms…there can be complex allocation and representation decisions for completing these, as you note in your findings. Please revise
We have deleted the word “simple”

6th para.
9. I prefer active voice and identification of who did what e.g. “preliminary analysis of each had been conducted” who, what kind of ‘preliminary analysis’….compilation?
We have revised the sentence to be more descriptive and now reads “Once these three steps were completed, FPs and their teams conducted preliminary analyses on the results. They then sought to convene two workshops with key stakeholders from within their respective SPHs.” Further, throughout the text we have sought to use more active voice and clearly identify who did what.
10. A number of terms are used: here “Dean-appointed focal persons (FPs)” in this paragraph and in the acknowledgements, in the supplementary file “internal staff” and “institutional leads” on p 2. Please clarify if these are the same people or different and then use a common term throughout, perhaps with explanations in the supplementary file for the different terms.

To ensure consistency, as suggested, we have aligned the two documents and therefore changed “internal staff” and “institutional leads” to “Focal Persons” in the supplementary file. We have also introduced, in para 2 of the methods section, “The Deans of the SPHs identified focal persons (FPs)…” and use it consistently throughout.

11. Similarly is a “capacity development strategy” the same as a “capacity development plan”

For purposes of consistency we have corrected the manuscript to read “capacity development plan” in all instances.

12. So glad to see the representation of the heterogeneity of the process! I think this should be reflected in the title of Figure 1 and the plan development part (as per process 2. above) made explicit. i.e. self-assessment and plan development process – an idealized step by step flowchart. (Do note that Table 3 also right censored).

We have altered the text or figure 1 slightly to include “an idealized process”. However we hesitate to include “plan development process” as the paper focuses more on better understanding the roll out of the capacity assessments, their successes and their challenges with the capacity development plans as outcomes. However, we do not spend too much time on understanding the details and the nuances of the process for capacity development plan creation, which constitute a mention in 2 of the 14 steps of the capacity assessment process as outcomes. We hope this clarifies the intent of the figure for the reviewers.

Apologies about the table…We have altered the margins and the table size to avoid erroneous censoring of the table.

7th para. I wonder about the inclusion of the semi-structured interviews in Figure 1, as more feedback on the self-assessment and plan development processes (1 & 2, perhaps 3 in my suggested typology) than a step to accomplish these.

The flow chart indicates the steps we went through to be able to learn from the process of an organizational assessment such as the ones conducted across the 7 SPHs. The SSIs with Focal persons were therefore a key step in the methods for this particular paper but not relevant to the accompanying papers. Without the SSIs with focal persons, we would not have had the nuanced understanding of the various differences that occurred across the 7 SPHs. For this reason we felt that it would be important to include in the flowchart for this paper. The reviewer is correct in asserting that this step is not required in order to effectively execute a self-assessment. However, it is the equivalent of M&E of an implemented process of self-assessment (and not development of capacity plans or mobilization of political will) in our case. In the typology of the reviewer outlined above, it is a reflection on process 1. We hope that this clarifies the intent of the flowchart and the reason why we have retained this step.

13. Seems to me that this should have a separate sub-head in the Methods, as it relates more to process 4, as noted above. Further, the paragraph ends at data collection and validity checking “Responses were captured verbatim and extensive notes were taken during the interviews, all of which were reviewed and verified for content by respondents.” How was the analysis conducted and ‘factors’ generated.

We have separated out the sub-section in Methods that describes the capacity assessment tool, and the sub-section that describes methods used for this paper, using sub-headings as recommended by the reviewer.

We have enhanced the methods to better explain the analysis process. Text now includes: Two members of the study team together reviewed the notes using a grounded theory approach [27] to generate a list of recurring themes related to ‘factors’ – both positive and negative – that affected the capacity assessment process. Similarly, they created list of ‘outcomes’ – both expected as well as unanticipated. Themes were reviewed, collated and summarized.
**Findings**

**Implementation process**

Throughout this sub-section, there is a tension as to what should go in Methods above, or what should be shared here.

14. I think some flag earlier in the methods about the variation is needed and some key ones e.g. para 2 translation into French in the DRC should be included in the methods so you can speak to whether translation back translation done (unlikely) and other methods to assure cross-language and cultural validity. I think your finding about having to do it in person or interview based is really important – goes with our experience. We have taken this point into consideration and mentioned the need to translate the tool into French for DRC. This is incorporated into para 2 of the methods.

15. Or Para 3. The assessment team – this would have been really helpful in the Methods, as I was wondering wrt feasibility. Partly relates to my requested clarification wrt active voice and naming who did data collection and preliminary analysis.

The assessment was originally (and perhaps naively) planned to be conducted by the dean appointed focal persons. Therefore the size of the “team” was 1. However, each SPH decided how large a “team” it would need to effectively and efficiently roll out the assessment and independently decided the size, the constituency, and the recruitment method. We therefore once again feel that this was not part of the original methodology but rather a “result” and a learning from the implementation of the capacity assessment exercise in each SPH.

**Outcomes [of??]**

We have added “of the Capacity Assessment exercise” to the heading

As per above comments I was unsure what to expect here, and truly they were heterogenous!

Para 1 nice overall assessment in first quote

Para 2 challenges for training in HSR for trainees

Para 3 learning about HSR, sharing conceptions of what it is...not identified previously in the material, perhaps an additional process to those I have itemized above.

Para 4 seems to relate to process 3 I cited above, mobilization, interaction.

16. Suggest moving this section after the factors affecting the assessment process?

Suggestion accepted and sections interchanged.

**Factors ....**

Para 1 – important finding that “...technical and moral support from the HEALTH Alliance Africa Hub and Johns Hopkins University was critical, particularly during moments of delays, frustrations, and bureaucratic red tape. “

17. I think more needs to be said in the methods about the role of the ‘external facilitators’ in the methods. Here, say more about what forms of technical and moral support occurred and how.

In Para 2 of the methods section we have added that the adapted tool was developed initially at Johns Hopkins. In Para 5 we enhanced the sentence to read: Draft agendas for these workshops were provided to the capacity assessment teams “by Johns Hopkins University”. In Para 6 we added: Johns Hopkins University provided technical support, references, documentation, and engaged with SPH staff and leadership whenever assistance was requested.

We have also added a new para to the methods section that explains the role that the authors of this paper played in supporting the overall process, and have described this as part of the methods we used for writing this paper, as suggested by the second reviewer.

Para 2-4 – seeing this finding around conceptions of HSR, seems to relate to para 3 in outcomes. A rationale for putting this first or combining into this section.....although para 4 also relates to implementation above.

18. Needs some re-sorting of material.

In retrospect we acknowledge that perhaps the section on Factors is better placed before the section on outcomes and have therefore reorganized the order. This also follows well with the last paragraph of the
methods sections indicating the order of questions with respect to the SSIs (and hence the order of the findings relevant to those questions).

19. Para 5-7 on resources we learn more about resource commitments to the process. Why not in methods? The assessment was originally (and perhaps naively) planned to be conducted by the dean appointed focal persons. Therefore the size of the “team” was 1. However, each SPH decided how large a “team” it would need to effectively and efficiently roll out the assessment and independently decided the size, the constituency, and the recruitment method. We therefore once again feel that this was not part of the original methodology but rather a “result” and a learning from the implementation of the capacity assessment exercise in each SPH.

Further, we hear that MUSPHSS, Tanzania decided against notifying IRB as they deemed this to be a capacity building exercise and not a research initiative. How does this go with para 8 of the Methods said “Ethics approval was sought at all sites except MUSPHSS where it was deemed unnecessary by the leadership.” So the leadership decided CB not research? Who were the leadership? Of the assessment process, the SPH, the university...or the REB? Great to see the creativity here! Seems to all relate to assessment implementation. In line with our assertions above, we have altered the methods section to indicate what was “intended” versus what actually happened. Therefore the text now reads “The necessity for Ethics approval was discussed across the Focal Persons with a final conclusion that all SPHs will seek clearance from their institutional Ethics Review Committees.”

In the Results section, we include “Ethics approval was sought at all sites except MUSPHSS where the Dean considered the activity to be a capacity building exercise rather than a research initiative.”

20. Para 8-10 – glad to see this experience for the so-called ‘simple’ form completion # as per above re methods and judgements, even for so called ‘objective’ data is important...likely should not use the term, rather numeric data.

We considered this suggestion by the reviewer and revisited our instruments. We recognize that any objective data has some judgement but even so we feel that unlike component A that was a numeric capture of subjective data through a Likert scale, Component B was a mix of some numeric and some objective data (eg listings of publications, number of faculty, etc) For this reason we feel that in order to demonstrate the different types of data collected and the implications of each, the retaining “objective” would be more indicative of the data.

Discussion
Para 1. Good summary, few references to the literature that presented in the Introduction – why? Are there not some?

This is a very relevant point. We have reviewed the paper and referenced further articles that are relevant both in the introduction as well as in the discussion sections.

21. “more objective” data. I think the inherent judgement means the methods should be modified. See number 20 above.

22. “ Triangulation of information served to validate the findings. However, finding ways to reconcile the two sources in instances of contradictions proved to be challenging.” Contrasting statements. Need something more on this in the methods, how it was done, what combination of the external facilitator, across schools, across sources...

We have clarified this section with as follows:

In results: Reconciling the results from the various sections of the tool proved challenging. Triangulation therefore allowed for perceptions to be enforced or for misperceptions to be amended. For instance, at MUSPHSS, Tanzania, some faculty were unaware of services and resources such as databases and library access and, assuming they didn’t exist, rated these as low in the self-assessment. Similarly at MUSOPH, Kenya, faculty were under the impression that organizational policies were not available. At KHSPH, DRC approximately 60% of interviewees agreed that the SPH places high priority on health systems research and
70% agreed that KSPH has an adequate number of individuals with strong quantitative research skills who are interested in applying them to HSR but when few if any outputs reflected any publications in HSR. Deliberations, discussions and debates in the workshops led to a realization that HSR was poorly understood, in the case of KSPH, DRC and that resources are often available but either not distributed or not actively accessed in the example of MUSPSS, Tanzania and MUSOPH, Kenya.

In Discussion: Triangulation of sources served to validate the findings in some instances, particularly with objectively verifiable data (number of publications). However, in other cases the post assessment workshops served as a conduit for dialogue to reconcile different perceptions with objective reality.

23. Para 3 important material, but more about “cross-institutional comparison and learning” would be really helpful, in the methods and findings as well
Thank you for raising this important point. We have addressed this in the methods as follows:

Para 2: “A first draft of the capacity assessment tool was developed by JHU in early 2011. The Deans of the SPHs identified focal persons (FPs) to lead the initiative, and this group together with JHU colleagues met at a workshop in Uganda in June 2011, where the tool was revised and adapted to meet local needs. The tool consisted of three modules described below, designed to provide both internal and external perspectives, and subjective and objective information on capacity. The majority of amendments made during the June 2011 workshop were in the order, phrasing, and clarification of the questions. KSPH colleagues translated the tool into French for use in the DRC. The final version of the HSR capacity assessment tool is available (see Additional File 1).”

Para 7: The SPHs reconvened in December 2011 to share their results, reflect on the outcomes, learn from the experiences of each other, and...

We have added to the results section, last para as follows:
“Finally, the various HEALTH Alliance meetings before and after the capacity assessment process facilitated cross-institutional learning as well as peer-support mechanisms that continue beyond the assessment exercise. This is evident in the SPHs responding jointly to funding opportunities for capacity building in HSR as well as for conducting HSR studies.”

24. Para 4 suggest dropping, unless you are going to link it with the broader health research capacity strengthening literature
If indeed we are referring to the same paragraph, then upon reflection we feel that it has less to do with HSR as an outcome per se but rather the factors that contribute to the assessment process. We have therefore made this more clear by stating: “From an analysis of the process of executing HSR institutional capacity assessments across these 7 SPHs, it would appear that four factors play a critical role: leadership support, a conceptual understanding of HSR, adequate resources, and data availability.”

Conclusions
25. Para 1. Outcomes of the multiple processes.... “Second, the assessment was critical in the development of new capacity development plans for which the SPHs are now actively seeking funding”. Not much evidence is presented in the findings section, as very little on the plans....can you add it? Or adjust the outcomes, as noted above.
Under outcomes, we added a final paragraph that reads” Last but not least, the exercise created a sense of collegiality amongst the seven schools that galvanized collective action for shared interests. For instance CPHMS, Ethiopia initiated a workshop with JHU on HSR methods training for all partners; MUSOPH, Kenya took the lead on creating a new course on HSR for all the partners as well as spearheaded the crafting of grant proposals for funding agencies; and all FPs united in the publication of several manuscripts showcasing the results of the capacity assessments.”
26. "It provides data that can be analyzed in a variety of ways (21–23) yielding unexpected and valuable side benefits." I am unclear on what is unexpected...perhaps keep for the other articles. This sentence has been deleted.

27. Para 2. Very important....was there not some of your data which could speak to the resources question, not only for the assessment, as per the focus here, but also for training and research? Could this be shared in this paper, as one of the findings? Or is it in another one which focuses more on resources? Otherwise, however important your final question is, and relates to process 3 which I identified up above, this may not be the paper to pose it.

Thank you for your reflections...we address the resource question in a number of across the other three papers that we hope will be published concurrently with this one. We therefore agree with the reviewer that perhaps its more appropriate to leave it out of this one.

Minor Essential Revisions
Introduction

1. Para 3, Table 1. Note that tables cut off on the right in the manuscript pdf, so hope I was able to capture most of the material.

Apologies for this. We have corrected the margins to avoid this happening again.

REVIEWER: ALAN BOYD

1. Is the question posed by the authors new and well defined?
The aims of the paper could be more clearly expressed (whether in the form of questions or not). The main aims appear to be:
1) To describe how the self-assessment tool was implemented (the tool itself is also described, but this is not a major aim of the paper).
2) To assess the utility of the self-assessment tool for the organisations that undertook the self-assessment
3) To identify factors affecting the assessment process, and hence the potential utility of the tool/process for other organisations.

The Findings section of the manuscript is structured in line with these aims, but the preceding sections and the abstract are not. Thank you for pointing this out. The Abstract introduction now has an additional line that reads: “This paper describes the design and application of the tool across the SPHs, assesses the utility of the tool, and identifies factors affecting the assessment process”

We have altered the text in the background section of the paper to now include “This paper reviews the design and application of the self-assessment tool, assesses the utility of the tool, and identifies the resulting outcomes and lessons learned through its implementation with the aim of informing others who seek to undergo similar organizational capacity assessments.”

Fulfilling these aims would provide useful new knowledge.

2. Are the methods appropriate and well described, and are sufficient details provided to replicate the work?

The main method that is described is semi-structured interviews out with focal persons from each SPH. The remainder of the Methods section actually describes the methods for developing and implementing the tool, rather than the research methods used to describe and assess it. From the declaration of authors’ contributions, observation of the workshops and document reviews of the individual self-assessment reports may also possibly have contributed to the findings. If so, they should be covered in the Methods section; if not,
then I think this is an opportunity lost, and the paper would be enhanced by adding analyses based on such observations and document reviews.

The findings of the capacity assessments are captured in three papers accompanying this one. They draw from the self-assessments, the key informant interviews and the workshops. This paper however focuses strictly on capturing the roll out of the capacity assessment exercise. The SSIs with the focal persons therefore are the principal source of information as they are the ones who described, in detail, what actually occurred during the rollout, how it veered from the ideal, and why certain decisions differed between schools. Their experiences using the tool is what we aim to capture in this paper. However, it is true that the authors’ familiarity with the process by virtue of attending the workshops and reviewing the final assessments contributed to capturing the process.

We have therefore amended the methods section to include a new para 9: “The authors of this paper tracked the implementation of the assessment tool through participating in each of the international meetings, regular teleconferences where progress was shared, and responding to occasional emails from FPs. The authors also reviewed draft findings from the institutional reports.”

The evaluation of the tool could also potentially have been enhanced by further analyses, such as statistical analyses of the properties of the survey instrument (E.g. testing construct validity and reliability). In this way, insights might have been gained into parts of the tool were most important, and which might potentially be omitted, especially given the feedback that some respondents thought the survey questionnaire to be too long. It might also be possible to suggest target sample sizes/response rates.

This is an important point, however the sample size at each of our study institutions would have been too small for statistical testing of validity and reliability, and our focus was more on understanding the processes involved and the outcomes of the capacity assessment. We have acknowledged this in our discussion of limitations, and also suggested that it might be fruitful line of future enquiry.

3. Are the data sound and well controlled?

The paper does not discuss potential limitations of the research, such as the reliance on interviews with FPs alone, with no assessment of the process by other stakeholders, and the biases that FPs might have; and the impact that the relationships of the interviewers to the interviewees/projects might have had.

The reviewer raises an important point. We have responded to this by adding a section at the end of the discussion section as follows: “An ex post facto reflection such as this allows institutions to learn from the experiences of others. However, reliance on FPs as being the sole source of these reflections subjects the interpretations to response bias. Furthermore, the process evaluation occurred four months after the completion of the organizational capacity assessments and therefore may also suffer from recall bias. Given the collaborative nature of the project and the willingness to learn from the experiences of each of the SPHs, we expect that there is little incentive for FPs to skew their responses. Nevertheless, it may have been interesting to conduct interviews with other members of the assessment team, select respondents, and the Dean. Clearly this paper has not sought to validate the items used in the self-assessment questionnaire or assess their reliability: our focus was principally on understanding the processes and consequences of implementing the capacity assessment tool. The sample size at each participating SPH in our study was too small for any rigorous assessment of validity or reliability, but future studies with larger samples could usefully contribute to this.”

There is no information about attempts that may have been made to consider the relative impact of the assessment tool compared to other methods. For example, there is no information about previous capacity assessments that the organisations or individuals involved in them may have undertaken, and how they compare with the self-assessment tool. Other aspects of the context for each SPH may also have been important, but are not described/reflected on.

We note this important point and after speaking with Focal persons at each of the SPHs we found that
“Among the 7 SPHs, only KSPH, DRC had previously undergone an organizational assessment that included the identification of public health training needs and characterization of faculty capacity to teach public health [16]. However, the scope was rather wide, the evaluation was externally contracted, and the study did not include HSR. Similarly in Uganda, a 2010 assessment encompassed the entire College of Health Sciences and its contribution to improving health in the country [17].”

We have added this to the background section

5. Are the discussion and conclusions well balanced and adequately supported by the data?
The discussion and conclusions in the main text are generally well balanced, but there is a question mark over whether they are adequately supported by the data (see 2. and 3. above).
We have addressed this as requested. See responses to comments above.

6. Do the title and abstract accurately convey what has been found?
The title is accurate. I think that the statement in the abstract that “This institutional HSR capacity assessment tool can be valuable for any SPH” should be weakened, as there are lots of caveats, and the utility of this form of the tool has not been fully demonstrated – indeed various potential issues are raised, such as difficulties of understanding HSR, and difficulties in getting responses/participation. It may be for example that a more participative process than the survey element would be more useful.

We have slightly weakened the abstract (and text) by changing "can" to "may". We have also added the text in bold: “…assessment tool and the process for its utilization, may…”

**Essential Revisions**
Present the aims/questions more clearly and structure the whole paper accordingly.
We have addressed this as requested. See responses to comments above.

Be clear and comprehensive regarding the research methods that were used, distinguishing these from the methods that were used to implement the tool.
We have addressed this as requested. See responses to comments above.

Discuss the limitations of the research and reword the discussion and conclusions to reflect these limitations.
We have addressed this as requested. See responses to comments above.

**Discretionary Revisions**
Conduct/incorporate further analyses such as those suggested above.
Say more about what further or follow-on research might be useful.