Author's response to reviews

Title: Operationalizing the RE-AIM framework to evaluate the impact of multi-sector partnerships

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Author's response to reviews: see over
April 9th, 2014

Dr. Susan Michie
University College London
United Kingdom
Associate Editors
Implementation Science

Re: Resubmission of manuscript entitled: Operationalizing the RE-AIM framework to evaluate the impact of multi-sector partnerships (MS: 1404012361111360)

Dear Dr. Michie,

Thank you for giving us the opportunity submit our revised manuscript entitled “Operationalizing the RE-AIM framework to evaluate the impact of multi-sector partnerships” (MS: 1404012361111360).

We have seriously considered and addressed the comments of both reviewers. We have highlighted in red font the changes we made to the manuscript. A detailed, point-by-point description of how we addressed the reviewers’ concerns is enumerated below. The reviewers’ comments are in bold and underlined whereas our responses are in regular font to help differentiate our responses from the comments.

This manuscript remains original and has not been previously published. These data are not under consideration for publication elsewhere. This manuscript will not be submitted elsewhere until a final decision is made regarding its acceptability for publication in Implementation Science. Finally, all authors have no competing interests to declare.

Please do not hesitate to contact me if you any other questions or concerns.

Sincerely,

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Reviewer's report

Title: Operationalizing the RE-AIM framework to evaluate the impact of multi-sector partnerships

Version: 1  Date: 22 November 2013

Reviewer: Caroline F Finch

Reviewer's report:

General Comments

Overall this is a paper that is likely to be well read and it considered use of RE-AIM in a way that has not been widely used elsewhere.

Thank you for your comment. We appreciate the compliment.

However, statements that RE-AIM has not been used previously in a multi-sector way before is not fully correct. As I have published some work in this area, albeit for a different health issue, I provide some additional reference suggestions below. For example, Finch and Donaldson (2010) presented an extension of RE-AIM suitable for across ecological levels of intervention delivery for sport and physical activity. Moreover, Kessler et al have published a recent paper describing operationalization of the different RE-AIM components and the recommendations from this current paper should be compared to that one.

Thank you for the suggestions. We have integrated these references in the manuscript and their integration can be found within the comments below.

Major Compulsory Revisions

1. Page 5, paragraph starting at line 6. It is not true that the RE-AIM Framework has yet to be applied across a program’s range of activities – see Finch & Donaldson (2010) for discussion of exactly this issue.

Thank you for this reference. It has helped us better place our manuscript in the broader literature. We have made reference to the Finch & Donaldson article on page 5, lines 12-18 to acknowledge the study.

2. Page 7, line 20. It is not clear what “pragmatic decisions” means either here, or elsewhere in the paper (e.g. “pragmatics” on bottom of page 11). Could some examples be provided at this point in general terms?

To help clarify the meaning of pragmatics we added a global definition of pragmatics and provided examples from both the literature and our manuscript. The main idea behind pragmatics is to apply the method or perspective that is best for the evaluation rather than solely focusing on one method of evaluation. Please see page 8, line 23 and page 9, lines 1-15. We have also added more information regarding the use of pragmatics for the implementation and organizational maintenance section on page 14, lines 8 to 15.
And how is the “hybrid, pragmatic approach” mentioned on page 16, line 16 different?

We have also slightly changed the wording on “hybrid, pragmatic approach” to “adopting a hybrid approach, based on pragmatics” (now on page 19 line 11-12).

3. (a) Page 9. Lines 19-20. On what basis is this assumption made? It seems that the direct reach channels mentioned here relate to non-SCI people.

This assumption is based on our interactions with these organizations. For instance, we know that one organization, Spinal Cord Injury Ontario, included our resources in a mailed package that was sent to all 1800 members. The likelihood of an adult with SCI reading one of these resources is higher as the resources are intended to reach the end-user (i.e., adults with SCI). In contrast, if a non-SCI individual visits the SCI Action Canada website, the likelihood that they will transfer the information to an adults with SCI is probably lower. Overall, the likelihood of someone receiving the resources is greater in the intended reach compared to the indirect reach. For that reason, we felt it necessary to separate them in different categories of reach. We have added sentences to the intended reach category to help clarify the issue (page 11, lines 19-20).

(b) Moreover, the intended end-groups for the indirect reach methods a) and b are different.

The target end-group for all reach categories remains adults with SCI in order to be consistent with SCI Action Canada’s mission. The different reach categories reflect whether SCI Action Canada’s programs/initiatives/resources would have directly or indirectly reached adults with SCI. We have added a sentence to this effect to clearly state that the end-user for all reach categories are adults with SCI (see page 10, lines 19-22). We have also clarified why the website data was added to the indirect reach methods (i.e., impossible to know the injury-status of visitors; page 11 lines 11-13).

4. (a) Page 10. The definitions of each of the denominators should be given in the methods section, not in the results.

We have now moved all the denominators in the method section. As requested by another reviewer, we have also added a table that includes the definition, denominator and numerator for reach, adoption, implementation and organizational maintenance (see Table 1).

(b) Also as the different reach strategies have different target groups, why is the denominator the same? It seems that the 3 dot points are not independent, as there is quite a bit of overlap.

As mentioned in comment 3b, the target end-group of all reach categories are individuals with SCI. For this reason, adults with SCI comprise the denominators for each reach strategy at the national, regional and engaged levels. There is also overlap between the total reach, end-user intended and direct reach and end-user direct reach as the reach levels move from including all sources of reach (i.e., total reach) to only the sources where adults with SCI were in direct contact with SCI Action Canada (i.e., end-user direct reach). As a results, each of these reach
calculations are based on different data sources such that all 6 sources are used to calculate total reach, while only 3 data sources comprise the end-user direct reach.

(c) **Formatting – there should be consistent formatting of all lists, not a mixture of letters and dots.**

The lists have all been changed to letters.

(d) **In the dot points, reference is made to Data source numbers but those numbers have not been previously defined.**

Please note that all data source numbers are indicate in italics when defining the indirect, intended and engaged levels of reach. In the previous version, they were placed as the end of the sentence. However, they have been moved the beginning of the sentence to make it more evident to the reader that these are the data sources used in this study (see page 11-12).

5. **Page 12, line 6. Whether or not a project is completed or is still in progress at 6 months has major implications for maintenance and so should be separated.**

Please note that the status of the projects are now all complete since we submitted the manuscript. Therefore, the ‘in-progress’ has been removed from the manuscript.

We also wanted to highlight that different metrics were used to calculate the organizational maintenance and implementation numbers. Therefore whether a project was in progress would not have affected our organizational maintenance numbers as the metrics were not the same. To further help differentiate implementation and organizational maintenance definitions we have included additional explanations for the organizational maintenance conceptualization as well as separated into a new paragraph to create a physical distinction (see page 15 lines 4-6).

6. **Page 12, lines 19-20. It is not at all convincing that any increase in PA rates would be meaningful. How could an increase from 50% to 51% (or 50.0% to 50.3%, for example) be significant enough to have meaning, let alone have any confidence in it be true and not measurement error? Was your data collection powered enough to have any confidence in the magnitude of the changes being reported?**

Thank you for your comments. Unfortunately, there are no known % increase in rates of physical activity in adults with SCI that results in greater health benefits or health care saving costs. However, we have used the general population based rationale that a 1% increase in physical activity has been estimated to save $15 million in health care costs. For this reason, we are using the 1% increase in physical activity as our metric given it can still have a meaningful impact on society. Please see page 16 lines 1-6.
Minor Essential Revisions

7. **Page 7, line 7. Should this read “impact within strategies” rather than “impact across strategies”?**

   Thank you for your comment. We can understand why the reviewer would have preferred the suggested wording. In order to keep the original meaning of “across strategies” we have changed it to read “of each strategy” (see page 8 line 7).

8. **Page 8. The point should also be made that each dimension of RE-AIM is different across the level, or specific targets, of the partnership.**

   We believe that we have now clarified that the target end-users are adults with SCI. As mentioned previously, we have added a sentence to this effect on page 10 lines 19-22. We have also added Table 1 (as requested by another reviewer).

9. **Page 9, line 2. The words “indirect, unintended and direct” have some overlap and so are a bit confusing. Also, what about ad-hoc or “random-background” adoption of messages, etc.**

   Thank you for your comment. We simply want to clarify that the second category is “intended” and not “unintended”. Because the categories of indirect, intended and direct are defined by the path to which adults with SCI will be exposed to SCI Action Canada programs/initiatives/resources we believe they are the best words to represent our category. With the addition of the sentences that further describes that our target end-user is adults with SCI for all levels of reach, we believe this should help to eliminate the confusion.

10. **Page 11, line 4. The meaning of the phrase “reach ratio at the engagement level” is not clear.**

    Thank you for the comment. We have changed the sentence to reach at the engaged level (see page 13, line 5).

11. **Page 11, lines 9-10. The ethics statement certainly needs to be included in this paper but it reads out of context here. Wouldn’t it apply to all dimensions of RE-AIM?**

    We agree that the location of that statement was not ideal. We have moved the statement to be the last statement that is read in the method section (page 16, lines 19-20).

12. **Page 11, line 17. “number was the numerator” – should this be “number was the denominator”?**

    The statement is correct as that number is the numerator. As suggested, we moved the definition of the denominators to the methods section. We believe this will clarify the comment as it is now more evident the numbers that represents the numerator and the denominator (note: the statement is now on page 13, line 17).
13. Page 12, line 1. Dissuaded on what basis and how?

We have elaborated that we were dissuaded by the complexity and resources required to conduct implementation analyses for each of SCI Action Canada’s program and initiative across the provinces implicated and the different levels of interventions. Essentially, it was not pragmatic to do such an implementation evaluation for SCI Action Canada. As a result, we acknowledge that we needed to let go of some experimental control to maintain the strong relationship between the research team and partners. See page 14 lines 8-22.

14. Page 12, line 2. Determined how and on what basis?

The basis of our decision is mentioned in question 13. In addition, we elaborated that using the strategic plan led to the implementation evaluation of the partnership was whole rather than the sum of all its initiatives. As with comment #13, we also acknowledged that we needed to let go of some experimental control to maintain the strong relationship between the research team and partners. See page 14, lines 19-22.

15. Page 12, lines 13-15. With the details provided here, it is not clear how this could be a 5-year prospective cohort study design, as the first 4 years given as 2007-2010 and the second only as a three year period.

The data for the 5 year cohort study was collected between 2007 and 2013. Therefore, this timeline includes both the recruitment period and the data collection phase. We have added that the data collection was conducted between 2007 and 2013, please see on page 15 lines 16-18.

16. Page 14, lines 14-18. The different levels of adoption were not defined in the methods.

The different levels of adoption are mentioned on page 13 lines 14 to 16. We believe that by moving the denominator in the method section, this will help the reader to further understand the different levels of the numerator and denominator. See page 13 lines, 18-23 and page 14 lines 1-6.

17. Page 14, line 22. Implemented over what time frame?

We have added the phrase “implemented between 2007 and 2013” in the manuscript (page 15 line 1).

18. Page 15, Lines 14-19. The statements are correct, but these points have also been previously made by Finch & Donaldson (2010). It is not clear what “in such settings” is referring to. Others studies are also applying RE-AIM in partnership settings (see references below).

We have added the Finch and Donaldson reference to the sentence as well as modified it to indicate that our study further illustrates to move beyond single interventions (page 18 lines 10-
12). We have also modified the next sentence to focus on partnership initiatives that move beyond RCTs and to real world health promotion strategies as highlighted in the 2010 article.

19. Page 16, lines 3-5. This point is correct and relates to the need for a settings (or ecological) approach to interventions delivery, rather than just an individually-targeted approach. More of this point could be made in the paper, with referencing to other studies that have previously discussed this point. Note that some of the previous formulation of the assessments of the adoption and maintenance components of RE-AIM at the setting level, in particular, in published literature also addresses this, though not to the same extent that this current paper does.

This is a good point and we believe that we have worked in other references throughout the paper to reflect this.

20. Page 17, lines 12-13. The paper has not really talked about the scientific control aspect of implementation research. This needs to be expanded, perhaps with additional reference to the published literature contrasting efficacy and effectiveness studies.

Although this issue is beyond the scope of our study, we have added in the introduction that conducting real world research and interventions requires us to lose some scientific control. Hence, the research needs to take an effectiveness approach rather than an efficacy one (page 7 lines 3-18). This idea has also be introduced in various other sections of the manuscript.

21. Page 17, line 22. Whilst this is certainly needed, as it is stated, this is still only a research perspective on the dissemination of information process. What did the partners involved in the study say they needed?

The partners were actively involved with the research team in creating and disseminating the programs, initiatives and resources. Their input was considered before disseminating the partnership’s initiatives. In the next comment (#22), we have alluded to the benefit for community partners of tracking individuals as it pertains with collecting temporal, multiple contact data. Partners could find this information helpful because they will have a better idea of the number of new members being exposed to promotional activities. Because the recommendations c) and d) revolve around tracking partnerships activities we believe that the additional statement made on page 21, lines 5-7 also link to this comment.

22. Page 18, lines 4-7. Whilst this point is true, there is no data in the paper to support its inclusion here. Wouldn’t capacity to do this tracking require more scientific control, not less of it (as implied as being desirable on the previous page?)

We have now added at the beginning of the recommendation section that these recommendations were also based on the current’s study limitation (page 20, lines 2-4). To that effect, we agree that there is no data in this paper, hence its limitation. We believe it is important to suggest because if partners would agree to a pragmatic method to track its reach of target end-users over the years it would further enhance the accuracy of the Reach values. This data could also be
important for partners as it would be able to give them an indicator if they are reaching new end-users (page 21, lines 5-7).

**Discretionary Revisions**

23. **Page 4, line 3. RE-AIM is also useful for health promotion or interventions professionals and practitioners.**

This information was added to page 4, line 3.

24. **Page 4, lines 19-21. Given that the health issue in this paper is spinal cord injury, it could be useful to also cite some injury prevention RE-AIM applications. The book chapter by Finch (2012) gives a recent status update in this area.**

We have added the Li et al (2008) article and Finch (2012) chapter to expand the use of RE-AIM for injury prevention (page 4, line 22). We have also highlighted the RE-AIM can be used for multifaceted implementation interventions and referenced the Finch 2011 study protocol paper on page 5, line 6-7.

25. **Page 6, lines 3-5. Application of the RE-AIM framework in this context is both useful and relevant. The authors may find it relevant to reference two other injury-related studies that have/are applying RE-AIM in a partnerships framework (Day et al (2011) and Finch et al (2011))**

We have added a sentence stating that RE-AIM has been applied in partnerships and reference the reviewer’s suggestions. Page 6, lines 6-7.

26. **Page 15, line 19-21. The paper by Kessler et al (2013) also does this.**

We added the Kessler reference and the original Glasgow 1999 article to demonstrate that RE-AIM as an example of an evaluation tool that should be used to evaluate initiatives. Page 18, line 18.

**Additional reference suggestions**


Thank you for these suggestions. They were very helpful.

Implementation Science: Peer Review

MS ID: 1404012361111360

Title: Operationalizing the RE-AIM framework to evaluate the impact of multi-sector partnerships

1. Is the question posed by the authors new and well defined?

Discretionary Revision: The hybrid approach the authors used to operationalize the RE-AIM components appears to be relatively new. I appreciated the authors’ descriptions of other approaches (strategy/dimension-specific, additive). I think the paper would be improved by elaborating on this approach with more details and examples from the literature.

Thank you for your comments. We have further elaborated on the use of pragmatics and the hybrid approach by giving an example based on the literature and illustrating how we used pragmatics in this manuscript. Please see page 8, lines 21-23 and page 9 lines 1-15 for the new content.

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

A. Discretionary Revision: The “Methods” section opens with an overview of the partnership between SCI Action Canada, community organizations, and universities. This section seems more appropriate at the end of the “Introduction.”

We have considered moving this section in the introduction. We, first, placed the section near the beginning of the introduction and, second, moved it to the end of the introduction. In both instances, we feel that having the section in the introduction diverted the focus of the introduction to SCI Action Canada rather than on RE-AIM’s application to large multi-sectorial partnership. Because we want to keep the RE-AIM focus of the introduction, we feel describing SCI Action Canada at the start of the method section remains the optimal place.
B. Major Compulsory Revision: The measures used to operationalize the RE-AIM dimensions are very confusing and difficult to follow. A table of measures containing descriptions, numerators, and denominators is essential for readers. Further comments about the measures appear below.

Table 1 was created to summarize the reach, adoption, implementation and organizational maintenance elements. We believe this table has clarified our approach and we thank you for the suggestion.

C. Discretionary Revision: Methods>Reach>2nd paragraph: The measures that constitute indirect reach are not consistent; some are active and others are passive. The measure is composed of the number of Canadians without a spinal cord injury (SCI) who: (1) received information from SCI Action Canada, (2) were invited to or attended a presentation, or (3) participated in an initiative. For the first measure, why wouldn’t it be the number to whom SCI Action Canada sent information? You may not be able to quantify the number who received information, but you can quantify the number to whom you sent information. The second measure contains two distinct components: those who were invited and those who attended. Not everyone who was invited attended; and not everyone who attended was invited by SCI Action Canada. The authors should select one of these (invited or attended) and it should be consistent with the other measures. The third measure reflects participating in an initiative, which is active and more consistent with attending a presentation. Some components of indirect reach seem to lean toward the authors’ definition of reach at the engagement level, which is described in the last paragraph of the “Reach” section.

Thank you for this comment. We have replaced the word received with the word “sent” as we agree with your statement. Also we have selected to only keep the word invited in the second component. As for the third, we need to keep the individuals who “participated” in indirect reach because these are individuals who do not have a spinal cord injury (SCI). Therefore, they do not fit in the category of direct reach or engagement level because these categories focused solely on adults with SCI. Please see page 11 for the wording changes.

D. Discretionary Revision: Methods>Reach>2nd paragraph: Intended reach was defined on an organizational level. The definition seems more appropriate as adoption, not reach.

In this case, we are focusing on the number of resources that are sent out by the community organizations to adults with SCI. These resources are then intended to be distributed to Canadians with SCI, therefore the end-user remains adults with SCI. In order to further clarify this issue, we have complemented the existing sentences to highlight that adults with SCI are the end-users (see page 11 lines 18-20). Please note that we also clarified the denominator for all reach data consists of adults with SCI (see page 10, lines 19-22).
E. Discretionary Revision: Methods>Adoption: The authors describe how reach, at each level, consisted of the percentage of participants who were exposed to various programs and initiatives. Would it be more appropriate to say participated in, rather than exposed to? This issue goes back to being consistent in how reach is defined (active vs. passive on the part of participants).

Thank you for your comment. Unfortunately, we cannot use the language of “participated in” as some of the initiatives were the distribution of resources such as the physical activity guidelines or tool kits. Therefore, stating “participated in” would not be accurate for all the types of initiatives. To avoid further confusion, we have added resources when we group programs and initiatives in this sentence to make the work “exposure” more relevant. Therefore, we have replaced programs/initiatives with programs/initiatives/resources throughout the manuscript.

F. Minor Essential Revision: Methods>Adoption: The numerator for the adoption measure is mentioned. However, the denominator is not mentioned until the “Adoption” section in the “Results.” Please include the denominator in the earlier section along with the numerator.

Thank you for the comment. We have moved all denominators to the method section and placed them in their respective sections throughout pages 12 to 15.

G. Major Compulsory Revision: Methods>Implementation and organization maintenance>1st paragraph: implementation was defined as “the number of projects completed or in progress.” For greater clarity, I suggest either (a) calculating one measure using only the number of projects completed, or (2) calculating two measures: projects completed, and projects in progress. In the “Results” section, the authors report 92% implementation and listed various project activities (i.e., development and distribution of physical activity-promoting materials, research studies and knowledge mobilization projects). As currently defined, it is unclear if some or all of these activities were in progress and/or completed.

Please note that the status of the projects are now all complete since we submitted the manuscript. Therefore, the ‘in-progress’ has been removed from the manuscript. The implementation numerator now consists of only completed projects (page 15, line 3).

H. Discretionary Revision: Methods>Effectiveness and individual maintenance>1st paragraph: For an effectiveness measure, the authors use physical activity participation rates and state that “any increase in physical activity participation rates would be deemed important and meaningful given that approximately 50% of adults with SCI participate in zero minutes of leisure time physical activity per day.” I think the authors should refer to the SCI literature to estimate a meaningful increase.

Thank you for your comments. Unfortunately, there are no known % increase in rates of physical activity in adults with SCI that results in greater health benefits or health care saving costs. However, we have used the general population based rationale that a 1% increase in physical activity has been estimated to save $15 million in health care costs. For this reason, we are using
the 1% increase in physical inactivity as our metric given it can still have a meaningful impact on society. Please see page 15 lines 1-6.

I. Discretionary Revision: Methods>Effectiveness and individual maintenance>1st paragraph: Similarly, the authors should specific a magnitude of change in the proportion of Canadians with SCI meeting the Physical Activity Guidelines for Adults with SCI. Currently, the manuscript reads “a change,” not how much of a change.

Unfortunately, there are currently no studies that have reported what is an acceptable change in % of adults meeting the SCI physical activity guidelines. One reason is that the guidelines were only released in 2011 and therefore limited research has used these guidelines. Also, co-author Martin Ginis led the largest physical activity epidemiology study in adults with SCI which was published in 2010. Therefore, more physical activity studies are needed before we can truly determine the acceptable change in % of adults with SCI meeting the physical activity guidelines. Because such studies do not exist at the population level, we are not comfortable speculating a meaningful % change of adults with SCI that will meet the physical activity guidelines.

3. Are the data sound and well controlled?

Given the nature of this study, the data are sound and well controlled to the extent that the study measures are defined and operationalized in the most appropriate manner. Based on the hybrid approach that the authors have used, some of the measures could have been defined, and thus operationalized in a manner more reflective of the intent of RE-AIM. These measure limitations have been discussed above.

Thank you for the comment. As the reviewer suggested we have addressed the concern regarding the hybrid approach earlier.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?

Unable to determine.
5. Are the discussion and conclusions well balanced and adequately supported by the data?

A. Discussion>2nd paragraph: The authors conclude that this study has provided a “RE-AIM evaluation template” that can be used by multisectoral partnerships. To make this claim more accurately, it would have been more suitable for the authors to have provided a table that could be referenced as a guide for others to operationalize their substantive RE-AIM dimensions. The authors also state that their data “could serve as baseline estimates and expected rates” for similar partnerships. The term “baseline” leads one to think of longitudinal analysis, in which case this study would serve as its own baseline. The term “expected rates” is more likely to apply only to SCI partnerships. Its extension to “similar partnerships” seems too vague and far-reaching.

As previously mentioned we have added a table to our manuscript that summarizes the definitions of some of the RE-AIM elements. We have also modified the sentence to remove the words baseline and expected rates. The last part of the sentence now reads… “data that other community-university partnerships can use to compare their rates of reach, adoption, implementation and organizational maintenance”. See page 18 line 20.

B. Minor Essential Revision: Recommendation #4 refers to being unable to track overlap due to the same individuals being contacted on multiple occasions over time is a large limitation. Not mentioned, but equally relevant, is the same individuals participating in multiple activities. This recommendation is more of a limitation of the study and should be mentioned separately.

Thank you for the comment. These recommendations are also based on the limitations of the current study. We had worded the recommendation section so that the reader is aware that it is based on our experience and the limitations of this study, see page 20 lines 2-4. We have also added the phrase “or participated in multiple programs/activities” to this recommendation/limitation (page 21, line 2).

6. Do the title and abstract accurately convey what has been found?

Yes.

7. Is the writing acceptable?

Yes, the writing was acceptable. Very few grammatical errors were found (e.g., Methods>Reach>2nd paragraph: “However, the data described below does not provide…”; first sentence of Conclusion: remove either “with” or “among”). The clarity of the writing could be improved; however, this is related more to the content rather than the writing style.

Thank you for the comment. We have made the grammatical corrections.