**Author’s response to reviews**

**Title:** A RESEARCH UTILIZATION FRAMEWORK FOR INFORMING GLOBAL HEALTH AND DEVELOPMENT POLICIES AND PROGRAMS

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**Version:** 2 Date: 13 Jul 2017

**Author’s response to reviews:**

Reviewer: Esther Mc Sween-Cadieux

This manuscript was well-written with a good presentation and I really appreciated learning about your organization and your work in Zambia! I also appreciated the FHI360 Research Utilization framework proposed by the authors. I have one general comment and some specific questions that I hope will be useful.

**GENERAL COMMENT FOR MY DECISION:**

Reviewer: This paper has been submitted as an opinion, but it follows the structure of a research article without the appropriate content (methods, data, results). For an opinion paper, even if the case study is of interest, there is too much information on it, but not enough discussion on the relevance of the new RU framework proposed and its development. Before resubmitting, I propose the manuscript be modified to better correspond to an opinion paper.

Also, I think that before the manuscript is accepted for publication, the authors could argue more why there is a need and an added-value for their framework in the KT field and how it is different (and better!) from other similar frameworks, especially the two cited.

Response: We have reformatted the paper to be an opinion piece. While we recognize the length is at the longer end for an opinion piece, the majority of comments requested that we expand on existing concepts, rather than remove. In order to appropriately address the questions and
comments, we found it difficult to shorten the piece any further. We have provided the following justification for our added-value framework in the KT field:

- Other published RU frameworks have focused largely on the policy development process or within a clinical setting, with less application of the translation process at the program level, which we emphasize in our framework. Our framework responds to both program and policy needs, particularly in a developing country context.

- Central to our framework is the engagement and interaction of key actors essential to the RU process. This human element distinguishes the framework from the two others referenced as it drives the context and climate for RU – the relationships, capabilities, politics, and demand for evidence – that determine the success of evidence uptake. While other frameworks talk about a range of actors and participants, this one puts those core groups at the center.

- The simplicity of the framework is also important from a programmatic perceptive as it emphasizes key areas simply for a very complicated process. This is to ensure that the framework is more digestible for a broader audience.

- We also summarize our strong justifications in our concluding paragraphs:
  - is simple enough for use by many different audiences, including end-users of evidence;
  - captures the fluid and dynamic RU process through its circular representation and explicit acknowledgement of feedback loops;
  - is relevant for application in LMICs, having drawn from our organizational expertise working in these contexts;
  - builds upon other evidence-based RU frameworks;
  - highlights the important roles of, and interplay between, three categories of key actors—evidence producers, knowledge brokers, and end-users of evidence—all of whom must interact and collaborate for the success of RU efforts;
  - focuses attention on the required inputs, including time, and activities within the important translation phase;
  - can be complimented by a suite of RU tools that we have developed.

SPECIFIC QUESTIONS AND SUGGESTIONS:

Reviewer: Background and literature review: The literature review could be updated to demonstrate their knowledge of the field and better situate their frameworks among existing
models (some reviews of existing KT frameworks have been published in recent years). I found that the justification for developing a new framework could be more robust.

Response: We have updated our literature review with more recent published articles to situate our framework in among the most recent literature. As mentioned above, we have provided the following justification for our added-value framework in the KT field:

- Other published RU frameworks have focused largely on the policy development process or within a clinical setting, with less application of the translation process at the program level, which we emphasize in our framework. Our framework responds to both program and policy needs, particularly in a developing country context.

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  • focuses attention on the required inputs, including time, and activities within the important translation phase;
  
  • can be complimented by a suite of RU tools that we have developed.
Reviewer: Lines 143-152: In my opinion, this short section on barriers to under-utilization of evidence in policies or programs could be enhanced and nuanced. The recent literature tends to explain that it is not simply a lack of capabilities or links, but rather that the use of evidence is of «politics» matter.

Response: We agree that the use of evidence can be of a political nature as it is linked to the human element and how people make decisions based on relationships and political dynamics. We have included this as a barrier to under-utilization of evidence.

Reviewer: Framework development: The framework developed by the authors is similar to the 2 frameworks cited; Wilson, Brady, Lesesne (2011) & El-Jadarli, Fadlallah (2015) (priority setting/research/translation/institutionalization or uptake). Also, they said they built upon other evidence-based RU frameworks but not enough information was giving on why did they choose specifically to combine these 2 frameworks? More information about the development process may have helped to better understand what changes were made, how and why? Also, the authors have several years of experience in global health and it would have been important to put this tacit knowledge forward and to explain how it influenced the development and modification of the framework. In my opinion, more substantive arguments about the relevance of changes made to the 2 existing frameworks are important.

Response: This additional information has been added: As a long standing RU program in global health, we often referred to the Wilson, et al. framework, however, found it to have similar limitations as reported above. A product of the Centers for Disease Control and Prevent (CDC), the framework emphasized clinical evidence, did not identify key actors, and did not have a foundational phase. The El Jardali, et al. framework was referred to for its policy application, yet remained limited for our programmatic needs. The combination of some key concepts in these frameworks, in addition to our own experiences in the field, led us to develop a simplified framework to inform programs and policies in LMICs. Central to our framework is the engagement and interaction of key actors essential to the RU process. This human element distinguishes the framework from others as it drives the context and climate for RU – the relationships, capabilities, politics, and demand for evidence – that determine the success of evidence uptake.

Reviewer: Dynamic component/user engagement: The authors mention on several occasions the dynamic nature of their framework and it is very relevant in my opinion! However, more explicit details about this user engagement would be helpful for the reader who wants to use their framework. How is this engagement conceptualized and operationalized concretely? Since this collaborative aspect of the framework is important, more information is needed. How end users can be practically involved in study conceptualization or in KT products field-testing? What are the important lessons learned or challenges based on the authors' experiences? How can we measure a meaningful participation or engagement of end users?

Response: These questions are best answered and illustrated through the case study example. For instance, dynamism is illustrated through overlapping and intertwining activities between the translation and institutionalization phases, also shown in Figure 2 timeline of activities. We intended these to show that RU is not a linear process. Under the Foundation and Research
phases, we show that early discussions of global policies with government officials led them to request a pilot study for Zambia. Government officials were involved in the study design by identifying measures of impact relevant for officials to make decisions. The important lessons learned, such as the importance of a champion or the overlapping stages of translation and institutionalization, are contained within the case study and we have tried to highlight them throughout.

Reviewer: Being myself interested in knowledge brokering in global health, the authors give brokers an important place in their framework. It would be important to clarify and deepen the understanding of their roles, tasks and influences in the process (e.g. lines 139/161). Similarly, who are the champions identified in the case study? Who brought him/her on board? (lines 245-246/333).

Response: Under Box 2 for the case study, we describe knowledge brokers as “Knowledge brokers included RU experts within FHI 360 who partnered with researchers and worked closely with implementers and end users throughout and after the study.” We also explain knowledge brokers as “Knowledge brokers are considered intermediaries to help communicate evidence and facilitate evidence use between producers and end users” under the Key Actors section. In the case study, the champion identified was a Zambian Obstetrician & Gynaecologist with extensive experience in family planning and maternal health programme at both the country and global level. This person had been involved in family planning in his home country for many years, was familiar with FHI 360's global work in expanding community-based access to injectables through CHWs, was a strong supporter of the practice, and felt passionate about advocating for policy-level changes in Zambia.

Reviewer: Context: The need to understand KT within a larger societal and political context is recognized by many. I was surprised to see that the contextual factors were not represented in the (visual) framework. The authors mentioned it as a limit, but an explanation of their choice would have been helpful to understand. Without more information aside, I am not totally certain that the framework does reflect the "real world" of decision-making and evidence use. If I understand correctly, the potential barriers to evidence use and the specific strategies to use in a specific context (translation phase) are decided in collaboration between all actors during the foundational phase? Does your framework offer a rational behind the choice of specific KT products or dissemination activities?

Response: In order to keep the framework simple, we have excluded some elements that we felt were already obvious such as contextual factors. While many external factors may dictate the success or failure of research and evidence uptake, such as capacity or political climate, they are not visually captured. The KT products we reference throughout the piece are a package of products that FHI 360 has been using and refining over the years for the purpose of RU. We do not prescribe these as the only products to use, but that they are simple to apply and integrate at a programmatic level to undergo the RU process.

Reviewer: Evaluation component: I was also wondering what is the role of evaluation in your framework? What did you choose to not include an evaluation component during your 4-phase (compared to El-Jadarli & Fadallah, 2015 & Wilson et al., 2011)? Without a rigorous evaluation
of KT’s activities and processes, it is difficult to know why efforts have leaded to uptake or not. How to know how to improve KT products?

Response: Like any process, it’s important to evaluate whether the RU efforts actually result in increased uptake. You are correct that there is no visual evaluation component in the framework, however, we emphasize building on evidence-based interventions and feedback processes, as well as how the process is ongoing and iterative. While there is an increased recognition in the KT world of the need for evaluation of RU efforts, evaluation of these types of interventions is complex and more documentation is needed of effective strategies for evaluating RU efforts. We have included a statement to his effect in the manuscript.

Reviewer: Lines 399: typo (availability)
Response: This has been corrected.

Reviewer: Line 403: typo (funding)
Response: This typo has been corrected.

Reviewer: Line 396: to remove
Response: This line has been removed. The entire format of the paper has been edited to fit that of a opinion piece.

Reviewer #2:

This article is a thoughtful and useful contribution to the "toolkit" of researchers, knowledge users and policy makers in developing countries who are seeking to improve implementation efforts. The use of a clinical exemplar throughout the manuscript was very useful and effective. The article is well-written and well-referenced. The article mentions the use of a knowledge broker, which is an effective, but often expensive, addition to the healthcare budget of a LMIC. I suggest that when considering sustaining changes made utilizing the FHI 360 Research Utilization Framework, it would be worth mentioning that a potential limitation of the framework is the expense of including staff like knowledge brokers, who may be available in grant-funded situations, but not during long-term implementation efforts.

Response: We recognize the financial limitation of including knowledge brokers on projects for the purpose or research utilization. We have tried to make this limitation more explicit in the discussion.