Author’s response to reviews

Title: Impact of the Urban Reproductive Health Initiative on family planning uptake at facilities in Kenya, Nigeria, and Senegal

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Author’s response to reviews:

Dear Dr. Aronin,

Thank you for your review of our manuscript, “Impact of the Urban Reproductive Health Initiative on family planning uptake at facilities in Kenya, Nigeria, and Senegal” (BMWH-D-16-00206). We appreciate the thoughtful review from you and the three reviewers. We have highlighted the changes we have made in the attached manuscript. Our responses to your comments are below.

Editor Comments:

Comment: Please provide more detail of the procedure to obtain informed consent.

Response: We have edited the consent section by adding: “All providers surveyed provided written informed consent in English.”

Comment: Please provide copies of the survey instruments used to generate the data as additional files.

Reviewer reports:

Mai Do (Reviewer 1):

Minor comments

1. Could the authors offer more background information on URHI program and intervention? It is not clear from the Methods section how URHI programs are different in public and private facilities. Are they offered in both public and private sector? If the URHI programs are separate from public and private sectors, did the authors control for them?

Response: We have tried to clarify this by adding the following sentence to the second paragraph of the Methods section: “In all countries, a goal was to identify and implement program activities in higher volume facilities; these included both public and private facilities. Activities in program facilities did not vary on the basis of private or public status.”

2. I wouldn't call the facility sample "matched sample". They sounded like panel sample.

Response: We have changed the word matched to panel throughout the document.

3. It would be good to compare facilities included and excluded from the analysis and discuss how the roughly 40% missing data may affect the results.

Response: We used a logistic model using basic facility characteristics to predict missingness. We have added a description of the systematic differences between included an excluded facilities to the eighth paragraph of the Methods section, as follows: “Facilities excluded from the model were significantly more likely to have been added at endline in all three countries; significantly more likely to be a private facility in Nigeria and Kenya; and were significantly more likely to have a larger staff in Kenya.”

We also described how this affects our ability to draw inferences in the Discussion: “This limits our ability to draw inferences about facilities that were added to the study, and about private facilities.”

4. I am not sure if dividing the number of new or total FP clients by the number of RH staff would control for facility size. What changes in the number of clients were faster or slower, and it was dependent on facility size?

Response: We acknowledge that the number of RH staff members is an imperfect proxy for facility size. That said, we did not want to penalize smaller facilities, and facilities with a smaller emphasis on RH, for what might appear to be smaller growth. We also considered using percentage change in clients, but that measure penalizes larger facilities because they start off...
with a larger denominator. We have added the following language to the last paragraph of the Discussion: “Finally, this analysis used the number of RH staff members to control for facility size in considering the number of new FP acceptors or users per facility. While the number of RH staff is an imperfect proxy for facility size, we believe that it better captures a facility’s investment in RH services, regardless of size.”

5. It was not clear whether the authors only included facilities that had data at both points, and the number of such facilities was not included in Table 1 as stated. Table 1 only presented the number of facilities at baseline and at endline.

Response: We have clarified this by editing and adding to the relevant sentences in final paragraph of the Methods section, which now read: “We used a panel sample of facilities for which data were available for independent and dependent variables for both baseline and endline. Facilities missing data from one or both time periods were not included in the matched panel.” Because of missing data, the number of facilities in the matched panel varied according to both the intervention and outcome (number of new acceptors or new users); we included the varying number of observations in Table 3. We edited the second paragraph of the results section to reflect this: “Table 3 presents associations between individual URHI program components and program outcomes, as well as the number of facilities in the matched panel for each model.”

6. I did not find Table 3 particularly helpful.

Response: We have tried to make Table 3 more useful by adding the reference to the number of facilities in the matched panel to the description of Table 3 in the Results and by describing the implications of individual program elements in the discussion.

7. Could the authors show the distribution and the range of the program scores, and explain what a 1-point increase mean?

Response: We have added a summary of the mean dose score and the standard deviation for each country to the third paragraph of the Results, as follows: In all three countries, the mean dose score was 0.00, with a standard deviation of 1.67 in Kenya, 1.84 in Nigeria, and 1.64 in Senegal. Facilities with more program components have higher dose scores.

8. Related to the previous comment, could the authors expand on the program implications? They suggested a combination of supply-side approaches. Could they be more specific? What would be the most effective combination, as shown from the results?

Response: It was difficult to tease out the effect of individual interventions because the program tended to implement more than one component simultaneously. We have tried to elaborate on this by adding the following language to the second paragraph of the discussion: “Although we were unable to disentangle the role of individual interventions, separate models by program activity (Table 3) suggest that different program elements may be more successful in some contexts than in others. For example, informational/educational materials at facilities was associated with an increase in FP users in Nigeria, but not in Kenya or Senegal. On the other
hand, provider training was associated with higher numbers of FP users in Nigeria and Kenya, but not in Senegal.”

9. In the discussion, the authors were a bit vague when suggesting that "future surveys might reduce this problem by investing in interviewer training for these types of questions." What are these types of questions and what kind of training may it be?

Response: We have tried to clarify this by editing that sentence as follows: “The response rate improved somewhat at endline, however, indicating that future surveys might reduce this problem by investing in interviewer training on how to ascertain the number of clients based on medical records and by quality control to ensure that these questions are answered fully despite the effort involved in answering them.”

10. Table 1: the distribution of provider received training with the Systematic Identification of Client Needs tool at baseline should be 0% instead of 100%.

Response: Thank you. We have corrected this error.

Karen Hardee (Reviewer 2): The URHI is a significant family planning initiative and the finding that program effort (dose) made a difference to outcomes across three countries that participated in it is important. With that said, this paper leaves me wanting more explanation about implementation of URHI and also guidance on how to interpret the findings. There must be more to say than do a bunch of things and the number of new users will go up.

Also, it would be important to say why control sites were not included in the MLE design.

Response: Thank you for this. We have added an explanation of why control sites were not included in the MLE design to the first paragraph of the Methods: “Since the programs covered the entire cities with demand creation programming and interventions were undertaken in high-volume and targeted facilities, it was not possible to have a comparison group in this study.”

Page 1: The authors cite Bruce 1990 for what is needed to increase contraceptive use. Bruce is about quality of care and was written 27 years ago. I was surprised not to see any reference to rights in the paper - FP2020 talks about women's and girls' rights to family planning and work on rights-based approaches to family planning have progressed since 2012. Quality and access are part of rights but are not synonymous with rights. I realize it has come out since this paper was written but the authors might want to check out Anrudh Jain's update of the Bruce Framework (http://www.popcouncil.org/uploads/pdfs/2017RH_QoCRightsBasedFP.pdf). It would be good to say that while there increasing attention to rights-based family planning, URHI was designed to improve access to quality family planning services. The discussion (page 9) also says that improving access and quality - linked with demand is what is needed in FP2020 countries. What about other components of rights-based family planning?

Response: Thank you for this suggestion. We have added greater discussion of rights-based family planning to the background, including the Jain reference that you mention here. We also tried to integrate the principles of a rights-based approach to the discussion and conclusions.
On page 2 there needs to be a better transition between the introductory material on the evidence for access and quality of care and the URHI project. What about saying that the purpose of the paper is to use evidence on access and quality from three countries that participated in the URHI and then describe the initiative.

Response: Thank you for this suggestion. We have edited this paragraph as follows: “The purpose of this study is to examine the role that contraceptive availability and facility quality play in contraceptive uptake in urban areas in Nigeria, Kenya, and Senegal. We consider interventions undertaken by the Urban Reproductive Health Initiative (URHI), which sought to increase demand for FP, improve family planning service quality, and increase contraceptive availability in urban settings.”

The authors seem to use access and availability interchangeably - please clarify.

Response: In this context, we are interested in availability, and have clarified this throughout the manuscript.

Page 5: The authors note that the interventions in the three countries varied - but just seeing the list of the components for each country on page 5 seems like apples and oranges and does not give the reader any sense of what the components entailed - and if they can be compared across the countries. Could the authors give any additional information about the components and the comparability across countries.

For example, training of providers - was the content similar across the countries? How does whole site training differ from “any interviewed provider received training from URHI at any time.” The components of contraceptive supply management also differed - in Kenya it was redistribution of methods between facilities, in Nigeria it was no stock-outs in the last month (which is an outcome rather than an intervention) and in Senegal it was the push model - can those be compared? With these differences across countries, it is not clear how to interpret the findings across countries. Was it the combination of components that made the difference? Was URHI better implemented in certain countries? The starting point for family planning programming was different in the three countries - Kenya is far ahead of Nigeria and Senegal - how did that affect the results, if at all?

Response: All three countries carried out activities designed to train providers, provide information and outreach to patients, and ensure stock availability. That said, we have provided greater detail on the type of activities undertaken in each of the countries and indicate which activities were unique to individual countries, such as the PUSH model in Senegal and URHI-sponsored renovations in Nigeria.

Page 6: the loss of observations was high - around 40 percent in each country. Did the authors do any analysis of the facilities that were lost compared to those included in the analysis?

Response: As noted in the response to reviewer 1, we conducted a logistic regression to consider whether facility characteristics predicted missingness in the dependent variable. We added a description of the missingness to the Methods and its implications to the Discussion.
Page 6: The sentence: "We used a matched sample of facilities for which data were available for independent and dependent variables for both time periods" is not clear. Does that just mean that facilities for which data were available for both baseline and endline were included?

Response: We have edited and added to that sentence so that it now reads: “We used a panel sample of facilities for which data were available for independent and dependent variables for both baseline and endline. Facilities missing data from one or both time periods were not included in the matched panel.”

Page 6: I don't understand the use of the term "Participation in non-URHI program components…” Why non-URHI?

Response: This was an error. We have corrected it to read “URHI program components.”

Kelsey Holt (Reviewer 3):

1. It is critical that the authors engage with the component of FP2020 related to rights-based service delivery and acknowledge in the Intro and Discussion that any supply side interventions should adhere to principles of voluntary, rights-based family planning service provision, and that comprehensive assessment of impact of supply side interventions should include client-centered, rights-focused measures. For example, I encourage authors to note in the Discussion that assessment of impact should also take into account not just contraceptive use but also include examination of client-centered and rights-based measures such as client assessment of experience with family planning care. For reference, see recent work by the FP2020 initiative related to quality of care in the context of rights based family planning.

Response: Based on this reviewer’s comments and those of the previous reviewer, we have supplemented the background and the discussion sections to include more details about the rights-based service delivery of family planning.

2. The justification for fixed effects regression rather than mixed effects is not clear - please elaborate on what variables were included in the model and how that relates to the point authors make about facility improvements being targeted at underserved areas.

Response: We have edited the discussion of the fixed effects model as follows: “Fixed effect regression was used because facility improvements were targeted to underserved areas, so standard regression methods might have resulted in a downward bias in the impact of the improvements. Fixed effects regression corrects for this source of bias and approximates the pre-test/post-test design in experimental setting by allowing each facility’s baseline score to serve as the reference point for its endline score, rather than using baseline scores from other better resourced facilities.”
3. P-values for Tables 3 and 4 should be provided so that readers can gauge the degree of statistical significance.

Response: We have provided 95% confidence intervals in lieu of p-values. Confidence intervals that do not cross zero are statistically significant at p<0.05.

4. More detail on how the findings from Table 3 were translated into the creation of dose scores should be provided, including a description of weighting or justification for no differential weighting of elements if appropriate.

Response: We used principal components analysis, rather than weighting to create the dose score. We have edited the first sentence of the last paragraph of the Results to read as follows: “We therefore used unweighted principal components analysis to create a dose score for each country. In all three countries, the mean dose score was 0.00, with a standard deviation of 1.67 in Kenya, 1.84 in Nigeria, and 1.64 in Senegal. Facilities with more program components have higher dose scores. The number of new acceptors increased significantly more at facilities with higher program scores in all three countries.”

5. Limitations section should make clear that this approach to measuring impact of the intervention does not include a control group and limits causal inference capabilities (not only because of selection bias, which is mentioned, but also confounding by unmeasured covariates that may be associated with both contraceptive uptake and service improvements in a given area).

Response: We have edited the first sentence of the third paragraph of the Discussion to reflect this suggestion, as follows: “In addition, while use of a panel data sample better allows us to draw causal inference about URHI programming and facility-level uptake and use of FP methods, the lack of a control group limits our ability to rule out confounding by other time-varying factors that may be associated with both contraceptive uptake and facility improvements.”

6. Discussion of promise of the initiative based on these findings should include acknowledgement that the implementation of each component does not always equate with good implementation - e.g., provider training might have influenced uptake but do we really know that this is because training led to higher quality care? What if it was through a different mechanism such an inadvertent training effect leading providers to inappropriately encourage method use to the detriment of voluntarism?

Response: The last paragraph of the Conclusion has been edited as follows: “Care should be taken to ensure that these components are executed well, and in a manner that helps clients exercise their right to make their own decisions about FP uptake and use. Notably, improving the quality and availability of services should go hand-in-hand with creating a demand for FP services so that the improved services offered are used to meet users’ needs and desires.”