PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	How much does it cost to combine supply-side and demand-side RBF approaches in a single intervention? Full Cost Analysis of the Results Based Financing for Maternal and Newborn Health Initiative in Malawi
AUTHORS	Torbica, Aleksandra; Grainger, Corinne; Okada, Elena; De Allegri, Manuela

VERSION 1 – REVIEW

REVIEWER	Memirie, Solomon Tessema Addis Ababa University, Addis Center for Ethics and Priority Setting
REVIEW RETURNED	15-Nov-2021

GENERAL COMMENTS	The authors try to estimate the economic costs of implementing the Results Based Financing for Maternal and Newborn Health (RBF4MNH) Initiative in Malawi, including both demand and supply-side components using activity-based costing approach. This is an important contribution to RBF literature. Regardless I have some queries that require attention by the authors. 1. In the "Methods" section, under "Study design" lines 40-45, the authors state that they collected data until 2016 while the project period stayed till 2018. While this is a retrospective study, why the authors were not able to include the entire project implementation period (till 2018) is not entirely clear. 2. The discussion, especially at the beginning focuses on cost-effectiveness while the study is focused solely on cost estimates. Further more, the authors claim that their work complements existing literature on the cost-effectiveness of RBF intervention. As this is not a cost-effectiveness study, it is difficult to come to such conclusion. 3. Under "Discussion" page 10, lines 49-52, the authors state that "When considering the total number of women reached by the program, the cost of the RBF4MNH Initiative is equivalent to Euro 24.17 per potential beneficiary and 62.52 per actual beneficiary". No detail in the methodology or results has been presented on how the beneficiaries are accounted for. Further more, the government allocates some budget to run the MCH program that would contribute to the care, which does not seem to be accounted for. 4. Sustainability of a health program depends on available resources and financing among other things. Malawi being a LIC with 39 US per capita health expenditure, 70% donor financed, how feasible RBF is in such resource poor settings would have benefitted from further discussion.

REVIEWER	Feldman, Inna Uppsala Universitet, Department of Public Health and Caring Science
REVIEW RETURNED	26-Dec-2021

GENERAL COMMENTS	This manuscript does not provide any evidence but provide the only accurate calculation of the intervention/program costs. The results look manly as accounting exercises, without any relations to research. Why it should be interesting for decision makers if there are no relations between costs and health outcomes of the intervention? Even if the previous research underestimated the costs of the RBF – program, the presented detailed calculation of the costs does not support decision making. As the authors mentioned in the background, "existing studies often aim to assess cost-effectiveness, relating the costs of implementing RBF approaches to their benefits, measured in terms of improved health service utilization and/or health gains" and these are totally correct aims. From my opinion, the manuscript is not a research work and does not provide a contribution to the literature.

VERSION 1 – AUTHOR RESPONSE

Reviewer: 1
Dr. Solomon Tessema Memirie, Addis Ababa University, Harvard University

Comments to the Author:
The authors try to estimate the economic costs of implementing the Results Based Financing for Maternal and Newborn Health (RBF4MNH) Initiative in Malawi, including both demand and supply-side components using activity-based costing approach. This is an important contribution to RBF literature. Regardless I have some queries that require attention by the authors.

Thank you very much for recognizing added value of our analysis on RBF literature. We address all the queries raised, one by one in the sections below.

1. In the "Methods" section, under "Study design" lines 40-45, the authors state that they collected data until 2016 while the project period stayed till 2018. While this is a retrospective study, why the authors were not able to include the entire project implementation period (till 2018) is not entirely clear.

The reviewer correctly identifies a weakness of our study, mentioned also in the original version of the manuscript under "methodological considerations". The study was commissioned in 2015, with the expectation of being completed in 2016, alongside the expected end of the RBF program. Unexpectedly, however, the RBF program was continued thanks to renewed funding availability, while our work had to be completed as per the terms of our contract. This explains the mismatch in dates, a weakness we cannot overcome in any way, since we had no means of extending the research into 2017 and the first three months of 2018.

2. The discussion, especially at the beginning focuses on cost-effectiveness while the study is focused solely on cost estimates. Furthermore, the authors claim that their work complements existing literature on the cost-effectiveness of RBF intervention. As this is not a cost-effectiveness study, it is difficult to come to such conclusion.

We thank the reviewer for this comment which allows us to further clarify our view on why we believe our study an important contribution to cost-effectiveness literature on RBF. In general, cost analysis is a pillar of any cost-effectiveness analysis and thus conducting a proper cost-assessment is essential to obtaining relevant cost-effectiveness estimates. The published cost-effectiveness studies on RBF put little or no attention to the methods for cost analysis, while focusing major efforts to identify and

measure the impact in terms of effectiveness (process as well as health outcomes). In most of these studies, costing studies were rather limited and not comprehensive of all cost items, thus not fully reflecting the opportunity costs of implementing RBF programs. With our analysis, we hope to raise methodological expectatins and increase awareness on the importance of properly conducted cost assessments to inform full economic evaluations, i.e. cost-effectiveness analyses.
We have revised the discussion section accordingly.

3. Under "Discussion" page 10, lines 49-52, the authors state that "When considering the total number of women reached by the program, the cost of the RBF4MNH Initiative is equivalent to Euro 24.17 per potential beneficiary and 62.52 per actual beneficiary". No detail in the methodology or results has been presented on how the beneficiaries are accounted for. Further more, the government allocates some budget to run the MCH program that would contribute to the care, which does not seem to be accounted for.

In response to the first point, we thank the reviewer for the suggestion to clarify better how we calculated the total number of potential beneficiaries. We adopted the following approach. We defined the number of potential beneficiaries in relation to the annual total number of expected births across the four districts (data obtained from the National Office of Statistics) while we defined the number of actual beneficiaries in relation to the actual number of women served by the program each year (data obtained from the records of the implementation unit). This is explained in our methods section (page 7). In relation to computing cost per potential beneficiary, we need to clarify why we counted beneficiaries at the district level and not only at the level of the catchment areas of the RBF4MNH facilities. First, the Initiative targets districts before targeting single facilities, since in all districts, it includes the CEmOC facility (i.e. the EmOC referral facility for the entire district) and it offers incentives to district teams on the basis of the performance of the entire district. Second, the results from the RBF4MNH Impact Evaluation clearly indicated the existence of considerable health facility shopping already prior to the launch of the Initiative, a trend which became even more evident after the Initiative was launched. That is to say that women move across catchment areas to deliver their babies and that even more women outside RBF4MNH catchment areas chose RBF4MNH facilities FOR DELIVERIES after the intervention was launched. In addition, we ought to specify that, when looking at cost per potential beneficiary, we did not account only for women who delivered in a healthcare facility, but for all womn who were expected to experience a birth during a given year. We adopted this approach since the Initiative aims at reaching all women and encourage each one of them to deliver in a safe environment, hence all expecting months are potential beneficiaries. We added the following in the text:

In relation to the second point, we purposely focus exclusively on costs related to the implementation of the RBF program, including those born directly by the Ministry of Health, because our analysis excludes the costs related to provision of MCH services. Our objective is not to cost MCH service provision with or without RBF, but to look more specifically at the costs related to implementing RBF per se. Our choice is motivated by lack of adequate evidence on the costs of RBF programs. We added this paragraph in the methods (page 7).

4. Sustainability of a health program depends on available resources and financing among other things. Malawi being a LIC with 39 US per capita health expenditure, 70% donor financed, how feasible RBF is in such resource poor settings would have benefitted from further discussion.

Thank you for this important suggestion that we fully embrace. We expand further the discussion section to reflect more extensively on the sustainability issue.

Reviewer: 2
Dr. Inna Feldman, Uppsala Universitet

Comments to the Author:
This manuscript does not provide any evidence but provide the only accurate calculation of the intervention/program costs.
The results look manly as accounting exercises, without any relations to research. Why it should be interesting for decision makers if there are no relations between costs and health outcomes of the intervention? Even if the previous research underestimated the costs of the RBF – program, the

presented detailed calculation of the costs does not support decision making. As the authors mentioned in the background, “existing studies often aim to assess cost-effectiveness, relating the costs of implementing RBF approaches to their benefits, measured in terms of improved health service utilization and/or health gains” and these are totally correct aims.
From my opinion, the manuscript is not a research work and does not provide a contribution to the literature.

We are sorry to learn that the reviewer doesn’t recognize cost analysis as research, but defines is a pure accounting exercise. Supported by all methodological guidelines (*see for example a reference book by Drummond et al. Methods for the Economic Evaluation of Health Care Programmes- Oxford UP, 2015)*, we disagree with this view of costing studies, as we firmly believe that conducting a proper cost analysis, using the high-level academic standards as we do in research is not only extremely relevant, but essential to inform decision makers about allocation of scarce resources. In addition of value *per se*, cost analyses are essential pillar of cost-effectiveness analysis which is considered important and growing research field, also in LMICs (as reviewer rightly points out). The available cost-effectiveness studies on RBF put little or no attention to the methods for cost analysis, while focusing major efforts to identify and measure the impact in terms of effectiveness (process as well as health outcomes). In addition, exiting cost-effectiveness studies focus on the cost of providing health services in the presence vs. in the absence of RBF. This approach inevitably ends up neglecting some costs associated with the implementation of such programs, thus not fully reflecting the opportunity costs of RBF program. With our analysis, we hope to raise methodological expectations and increase awareness on the importance of properly conducted cost assessments to inform full economic evaluation, i.e., cost-effectiveness analysis.

VERSION 2 – REVIEW

REVIEWER	Memirie, Solomon Tessema Addis Ababa University, Addis Center for Ethics and Priority Setting
REVIEW RETURNED	21-Mar-2022

GENERAL COMMENTS	My earlier comments are well addressed.