Author's response to reviews

Title: Estimating the Feasibility and Costs of Doubling Health Training Institution Graduate Output in Zambia: Planning through Individual School Assessments

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Dear Editors:

I respectfully resubmit the attached manuscript entitled “Estimating the Feasibility and Costs of Doubling Health Training Institution Graduate Output in Zambia: Planning through Individual School Assessments” which has been revised to address the comments from Dr. Till Bärnighausen and Ms. Mwansa Annette Nkowane.

On behalf of my colleagues, I would like express our gratitude for their thorough and thoughtful review. We have carefully considered each of the reviewer’s suggested revisions. Please find a point by point response to each reviewer’s comments below.

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Comments from Dr. Till Bärnighausen:

“The assertion that sufficiently large numbers of qualified secondary school graduates apply each year to health worker education in Zambia to allow a doubling of the health worker education rate could be strengthened if the authors provided a more detailed explanation of how the schools identified "qualified candidates". What were the quality criteria? Secondary education performance? Additional formal tests? Motivational statements?”

In the results section, we now describe the exact criteria used by each school to determine the number of qualified applicants it receives.

“We would assume that even if schools reject sufficiently qualified secondary school graduates, they accept the most qualified graduates into health worker training. Such a selection would imply that the additional applicants who would be accepted to training under the plan to double the health worker education output are, on average, less qualified, which is likely to imply either higher training needs or higher education failure rates. It would be useful if the authors discussed this point.”

The process by which the schools select students from the pool of qualified applicants was added to the results section, and we add further details about how increasing the number of students admitted to schools will impact the quality of trainees.
“In general, it would be useful if the authors explored the robustness of their cost estimates to variation in each of their key assumptions in sensitivity analysis.”

Factors that could affect our cost estimates are now discussed in the methods section, along with estimates of how sensitive the total costs are to changes in costing assumptions.

“However, even if the large estimated number of new teachers can be hired, the quality of the newly hired teachers may be lower than the quality of the current teachers, e.g. because the new teachers will on average be less experienced in teaching than the existing ones (or less physically able to teach, such as rehired retired teachers). The lower teacher quality is likely to imply higher "training of trainer" needs or lower productivity (e.g., lower proportions of enrolled students graduating from health worker education). It would be useful if the authors discussed this point and investigated the impact of relaxing the current assumption of unchanging average performance of teachers during the expansion in sensitivity analysis.”

The number of teachers required is determined directly from the faculty-to-student ratios set out in the national training quality standards consensus document. Therefore, while changes in the quality of teaching are paramount to the outcomes of a training school, they will not affect the need for faculty. However, we have added a paragraph in the discussion to bring up the potential impact of new teachers on the quality of teaching and consequently the graduation rate.

“Can the authors provide more detail on the background of this study? Was it conducted by consultants hired by the Zambian government?”

We now provide further detail in the background section regarding the process by which the study was conceived, carried out, and adopted by the government along with a description of the parties that were involved in the assessment.

“We thank the author for pointing out these typos and have corrected them.

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Comments from Ms. Mwansa Annette Nkowane:

“In the abstract indicate the total cost as reflected on page 7 $116.8 million.”

The total cost of the public school expansion was added to the abstract.

“In the results it is indicated that a one time investment [sic] for infrastructure is required. Some discussion on the cost of maintaining infrastructures is required over time and should be addressed in this paper. Otherwise there is risk of going back to the current situation even if this one time investment [sic] is made.”
We clarified that schools maintenance costs are incorporated in the per student costs in the methods section.

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Thank you for allowing us the opportunity to address these concerns. Please do not hesitate to contact me if you have further questions.

Sincerely,

Aaron Tjoa