Reviewer’s report

Title: Assessment of Interventions to Attract and Retain Health Workers in Rural Zambia: A Discrete Choice Experiment

Version: 1 Date: 24 Jan 2019

Reviewer: Barbara McPake

Reviewer's report:

This has been a carefully undertaken study of clear policy relevance in Zambia. As the authors note, its relevance beyond Zambia is questionable in terms of its findings, but the methodological innovation of projecting the costs of each potential rural workforce investment against the number of health worker years gained will be of wider interest and it would therefore be valuable to publish this study in this journal, where those undertaking DCEs of health worker job preferences in other settings will likely pick up on and consider this innovation.

I have a number of relatively minor concerns which should be addressed before publication:

1. On p5, please clarify the meaning of 'clinicians' where counts are given of their distribution between urban and rural areas in Zambia

2. Clarify whether the rural/urban balance of respondents to the survey is representative of the Zambian workforce. There are some oddities in the responses that seem inconsistent with a generalised difficulty of attracting staff to rural areas including the proportion 'likely to' (interpreted in the text to mean willing to take up an offer of) work in a rural area, and the significant number of respondents whose dominant choice was rural location. From the description of the sampling strategy, it seems that rural health workers had a larger chance of being sampled. If this is a problem, a breakdown of the analysis between rural, urban and student respondents should be presented to confirm the results apply to all three groups.

3. Was ethical approval sought and obtained for the study?

4. I don't think having a dominant preference in the face of a finite set of choices violates random utility theory - though I do understand that those responses need to be removed for the model estimates to be unbiased.

5. Adequate medical equipment and transport are basic requirements of providing services in rural areas as well as potential incentives to work there. The choice of not ensuring these because they are not sufficiently powerful incentives doesn't make sense. (ie. there's no point in getting people to work in rural areas if they can't provide services effectively). I think this needs to be discussed, and potentially, an analysis of marginal incentives in the presence of adequate working environment on both sides assessed. I would argue that this is a critical aspect of discussions with Zambian policy makers.
6. The long paragraph on p15 that summarises and interprets the results are poorly written and confusing. 'Individual education incentives have the largest total costs' but 'one of the scholarship incentives has a lower cost than the base level' (sounds contradictory)...delaying the return to school by three or four years (which sounds like two, not one, of the scholarship options). Then ...'the cost of the education options per percentage point increase are low due to their low marginal costs'. If total costs are largest, why are marginal costs low? That would seem to imply a high effectiveness but "even though a chance of a 75% scholarship after 3 years is cheaper than the base level, it was not found to be a strong predictor of rural job uptake. Inspection of Table 4 suggests some (not all) answers to these queries, but the text should make sense on its own.

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