Author's response to reviews

Title: Human resource development for community based Health Extension Program: Case study from Ethiopia

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Dear Editor of the Human Resources for Health, BioMed Central,

We are resubmitting a revised manuscript " Human resource development for community based Health Extension Program: Case study from Ethiopia." We have addressed the second round reviewers’ comments item by item and edited the paper for language. The revised manuscript is submitted along with tracked changes (with highlighted text).

Thank you for considering our paper for publication.

Yours truly,

Hailay Teklehaimanot

Teklehaimanot et al.: Human resource development for community based Health Extension Program: Case study from Ethiopia

We would like to thank again the reviewers for their second round comments. We have made revisions to the paper based on the comments and suggestions from the two reviewers and we have provided item-by-item response to the comments as follows:
Reviewer 1: Gordon C McCord

1. On page 9, the authors list the functions that comprise the 17 essential health services provided by HEP. However, for the category of hygiene and environmental sanitation, the sentence lacks specificity: “The interventions under hygiene and environmental sanitation include improving access to safe water supply, basic sanitation, and healthful housing...” Given that the HEP role is quite clear for the other functions, this sentence is confusing because it is not at all obvious how an HEP will provide the infrastructure upgrades necessary to achieve hygiene and environmental sanitation. This is discussed a few paragraphs later on page 16 (“including support and supervision in the construction of latrines, disposal pits and healthful homes”), though this is still rather unspecific and it is unclear whether the capital costs of these infrastructure improvements are costed in the HEP program cost estimates.

We have described more clearly the specific interventions and inputs under the hygiene and environmental sanitation program. We have also indicated that the HEP program cost estimate presented doesn't include the infrastructure development costs incurred by households for adopting the hygiene and sanitation package. (pages 9, 10, 12)

2. On page 12, when comparing the estimates HEP costs to the costs from the CHW report in McCord et al. 2013, the authors compare the HEP cost of $5.1 per capita at the village level to the CHW report cost of $2.72. Given that this $2.72 number is an average per capita cost over the ramp-up phase (and not per person serviced by the program) I would suggest that the correct comparison is to the CHW cost of $6.86 per person serviced during the ramp-up phase, or $5.63 per capita after full system deployment. These numbers are also more encouraging since they mean that HEP and CHW report costs are quite close to each other ($5.1 and $5.63).

We have addressed the inaccuracy in the comparison of the estimated HEP costs to the costs from the CHW report by McCord et al. 2003. (page 12)

3. Table 3: I would suggest adding the number of observations (n=?) and it would be useful to know whether the trends are calculated as an average change per year, or over the period 2000- 2004 vs. 2004-2011. Given the different length of the two periods, a yearly average growth rate would be the more useful measure. It also seems that the p-values test the null of no change in each period. While this is important, it seems that what is most relevant is whether the growth rates in the two periods are statistically different from each other. A statistical test for this is not presented and should be.

This comment is really important, and we have presented a statistical test comparing the slopes of the pre-HEP and Post-HEP periods (Table 3).

The trends are calculated as an average change per year rather than over the
comparison periods. We have also added the number of observations.

(pages 20, 21, Table 3)

4. Interestingly, the authors do not present the trend analysis in Table 3 for the outcome indicators (maternal & child mortality) presented in Figure 1. From visual inspection, it seems that improvements in child mortality have not accelerated after 2004, and maternal mortality improvements actually slowed to a halt. On page 20, the authors attribute the improvements in child mortality to “improvement in child health indicators and availability of treatment service...” and yet they skirt the issue of whether or not the HEP program has affected the child & infant mortality trends (which was already decreasing before 2004). Doing the same spline test on the outcome variables seems pertinent and the results worth discussing.

For the child and maternal mortality indicators we have only three data points over the study period (pre-HEP as well as post-HEP periods), which is not possible to do spline analysis.

Reviewer 2: Mwansa Annette Nkowane

1. The authors have addressed most of the suggested comments. However, I still think that the area of regulation, accreditation and licensing is not addressed adequately. This is part of the problem that has led to some confusion as to the scope of practice. If there are limitations in this area, the authors should clearly indicate this. People who are involved in clinical tasks e.g. treatment should be adequately regulated. This can be an important point towards future improvements for this cadre.

We agree with your observation that if these issues are not clearly defined, quality standard and public safety could be affected. Thus, we have included a recommendation that legislations on these issues should be clearly defined and developed. (page 25)