Author’s response to reviews

Title: Improved Performance of District Health Systems through Implementing Health Center Clinical and Administrative Standards in the Amhara Region of Ethiopia

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Thank you so much for considering our paper “Improved Performance of District Health Systems through implementing Health Center Clinical and Administrative Standards in Amhara Region of Ethiopia” (BHSR-D-18-02012R1) for publication on BMC Health Services Research Journal.

We want to thank all editorial team members and reviewers for their valuable comments on our manuscript. All comments have been addressed properly in the revised paper detail response to all comments follows below.

On behalf of all authors,

Yours Sincerely,

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The following commented are properly addressed:

Editor Comments:

Thank you so much for submitting this interesting article. However, modifications are required in line with reviewers' comments for further improvement.
Comment 1: I have one minor suggestion: please change the study design as a 'quasi-experimental pre-post design'.

Comment accepted: the research design is now modified on page 2 line 53 and page 6 line 249 as “quasi-experimental pre-post design.

Trisasi Lestari (Reviewer 1)

Comment 2: In the results, page 8 line 350 - 358, it is showed that improvement in standard performances were ranged between 4-7%. It is statistically significant, but maybe not much different than before. In several areas, the achievement was only about 50%. Could you discuss why the changes were only between 4-7%?

Comment accepted: on page 11 line 521 - 523 the following explanations was made.

The gains as a result of six months interventions were ranges from 4 to 7%. This could be due to that some standards demands recruitment of staff, renovation of health facilities structures and limited technical skills available at primary health care facilities.

Adriana A. E. Biney, Ph.D (Reviewer 2):

Comment 3: Page 2 - Lines 49-50: Instead of 'Two years ago' it should be 'In 2016', so that the reader is certain about this year.

Comment accepted: on page 2 line 49: The phrase 'Two years ago' was replaced with 'In 2016'.

Comment 4: Page 3 - line 109: There is a typo, it is 'live' and not 'liver'

Comment 5: Page 3 - line 109: 'change sentence to maternal mortality ratio has declined from 1400 deaths per 100,000 live births to 351 in 2016'

Comment 4 & 5 accepted: on page 3 line 107: ‘: 'change sentence to maternal mortality ratio has declined from 1400 deaths per 100,000 live births to 351 in 2016'

Comment 6: Page 3 - line 110: edit the sentence to 'under-five mortality has declined by 67% to 68 deaths per 1000 births - not live births and not 100,000'.

Comment accepted: Page 3 line 108: the sentence was corrected as below:

“…..under-five mortality rate has declined by 67% to 68 deaths per 1000 births.”

Comment 7: It would be interesting to include a sentence discussing how the declines were achieved. Was it though intense programmatic efforts, funding to MoH, etc…?

Comment accepted: Page 3 line 111 the reason for gain stated, see below:

“These results were achieved with a high-level commitment of Ethiopian government, technical and other resources support of development partners. Hence, the ministry was able to expands demands, access and use of effective interventions to improve maternal, newborn and child health outcomes.”

Comment 8: Page 3 - line 122: remove the 2016 after the FMOH

Comment accepted: Page 3 line 125 2016 is deleted.

Comment 9: Page 4 - line 142: change ampersand (&) to 'and'

Comment accepted: Page 3 line 145 & is replaced with ‘and’.

Comment 10: Page 4 - line 151: Perhaps a subtitle can be inserted here - either the project name or any other appropriate alternative description that reflects the new subsection providing information about the project

Comment accepted: Page 3 line 154 the subtle inserted was “Institutionalizing Clinical and Administrative Guidelines.”

Operational definitions

Comment 11: Page 5 - line 190: The health center definition would be more appropriate in endnotes or footnotes according to the specifications of the journal.

Comment accepted: Page 5 footnote the definition of health centers is placed as follow.

Health center: According to the Ethiopian Service Standards [10] health center shall mean a health facility at the primary level of the healthcare system which provides promotive,
preventive, curative and rehabilitative outpatient care including basic laboratory and pharmacy services with the capacity of 10 beds for emergency and delivery service.

Comment 12: Page 5 - line 195: Performance tier should be in the methods section after the discussion on the three performance categories

Comment accepted: Page 6 line 231 – 244 the description on performance tier is moved ot methods section:

Performance tier

Based on Routine Health Management Information System reports, twelve maternal and child health-related service indicators were selected and collated. A group of experts which consists of the Federal Ministry of Health, USAID and IFHP rated achievements in accordance with the indicators with scores out of 100 percent. The key indicators are: Early Institutional Neonatal Mortality Rate, Proportion of Surviving Infants Vaccinated for Penta-3, Proportion of People Tested Positive for Malaria: All Ages, Proportion of People Tested Positive for Malaria: <5yrs, Proportion of Children with Moderate Malnutrition, Proportion of Children with Severe Malnutrition, Institutional Maternal Death Rate, Proportion of Pregnant Women that Received Antenatal Care: at least four visits, Proportion of Births Attended By a Skilled Health Worker, Early Postnatal Care Coverage, Proportion of Pregnant Women Tested for HIV, and Contraceptive Acceptance Rate. Finally, the top one-third is categorized as high performer woreda, the middle one-third as medium performing and the lower one-third woredas are categorized as low performing woredas [8].

Methods

Comment 13: Overall, I would like some clarity on the sections on the interventions and data collection in terms of timing of pre- and post-intervention validations. Also, is the unit of analysis at the individual level or did the 1306 participants come together at the facility level to access their facility within the various districts?

Comment accepted: Page 6 line 255- 275: The description under Performance management and improvement paragraph rephrased and the necessary time series activities were presented.

The Amhara Region State Health Bureau has trained Training of Trainers and Validation Team members from 20th to 22nd July 2017 at Grand Hotel, Bahir Dar City, Ethiopia. Then the basic trainings were cascaded in all ten zones in August 2017.
Comment accepted: Page 6 line 255-275: See above.

…… These validation team members deployed from 1st to 25th September to take preintervention measurements…..

Comment accepted: Page 6 line 255-275: See above.

After six months of intervention from 1st to 20th April 2018, the validation team were collected post intervention measurements.

Comment 14: Page 5 - lines 212-214: Under the Methods - Study Site - tell us how the districts were selected. We know they were in the three high, medium, low categories but what are the criteria for selecting 10 high, 23 medium and 43 low?

Comment accepted: Page 5 line 212: the sentence is rephrased as 76 districts were selected on purposive sampling methods. The rest 105 districts were supported other developing partners. The detail categorization criteria were presented on page 5 line 265-276.

Comment 15: Page 5: Are there any health peculiarities in the Amhara region that need to be discussed? Is HIV prevalent, do health workers face peculiar challenges there than elsewhere? Are there more rural than urban residences? What are the low, medium and high percentages overall across the 181 districts in the region?

Comment partially accepted: Page 5 line 231-244 the categorization criteria were presented. Since the rest 105 districts were supported by other development partners we don’t have performance tier to report here. USAID Transform Primary Health Care Project is expected to support over 412 districts out of 800 in four big agrarian regions of Ethiopia. There is also USAID Transform Health in Developing Region which is expected to provide similar support in 70 out of 200 districts of four pastoralist regions of Ethiopia.

Comment 16: Page 5 - line 228: Edit the 1/15000 and 1/3000 - why is the ’1/’ needed?

Comment accepted: Page 5 line 225: the necessary corrections were made as follow.
serving 15,000 – 25,000 people and their satellite health posts covering 3000 – 5,000

Comment 17: Page 6 - lines 243-262: The theory of change may be better placed in the introduction section, in the subsection where you discuss the project.

Comment accepted: Page line 170 - 191: the theory of change description moved under “Institutionalizing Clinical and Administrative Guidelines” sub section.

Comment 18: Page 6 - How were the interventions rolled out in terms of timing? This is mentioned in the abstract but is not so clear in the methods section. Provide a better sense of when pre and post intervention data collection were captured. Was it uniformly after three months at each facility?

Comment accepted: Page 6 line 253- 275: The description under Performance management and improvement paragraph rephrased and the necessary time series activities were presented.

Comment 19: Page 7 - line 284: The 76 woredas were purposively selected but what was that judgment based on? Why were 10, 23 and 43 low, medium and high performing districts, respectively, selected? Who selected these for the study?

Comment partially accepted: Page 6 line 231- 244 the categorization criteria were presented.

Comment 20: Page 7 - lines 297 - 303: When were the before and after data collected? It is not clear how long exactly interventions lasted although we get a sense of the various interventions that took place. The authors need to discuss the process and how research fit into the picture. How was administration of the tools done? These are not clear.

Comment accepted: Page 6 line 253- 275: The description under Performance management and improvement paragraph rephrased and the necessary time series activities were presented.

Comment 21: Page 7 - line 304: When were those "two occasions" that the measured data were included.

Comment accepted: Page 6 line 253- 275: The description under Performance management and improvement paragraph rephrased and the necessary time series activities were presented.
Results and Discussion

Only bivariate analyses were conducted and there was no discussion of necessary controls that could confound results.

Comment 22: What were the minimum and maximum values that they could have been scored?
Comment accepted: page 21: the following is footnote inserted on Table 7:
“NB: Green: Score Greater or equal to 80%; Yellow: score between 60% and 79.9%; and red: score below 60%.”

Comment 23: Page 9 - line 394: 'Red' instead of 'Ted'
Comment accepted: Page 9 line 388: correction was made

Comment 24: Change language throughout the results section so that you are not alluding to causation - e.g. line 363 - Overall, district health systems' performance improved as a result of… It may have improved but you did not control for various factors since you conducted bivariate analyses.

Comment accepted: Page 8 line 357 correction were made and the sentence was rephrased by removing generalizing words.

Comment 25: No limitations are mentioned but I am sure the authors had data or study limitations - that you can suggest as future research for other studies.

Comment accepted: Page 11 line 475- 48: the limitation of this studies were presented.

Limitations

Though this study quasi experimental pre-post design, it has the following limitation. The first limitation was that it measures only results of six months of duration but some of the standards
needs much more time and commitments. The second limitation was the study it didn’t identify predictor variables. And the third limitation was the opinions of staff on compliance against the standards by training status were not explained.

Conclusion and Recommendation

Comment 26: Page 11 - lines 458 to 488: the sentence stating definitively that the three chapters need more support has to be re-worded to suggest that they may require more support since validation scores were the lowest.

Comment accepted: Page 11 line 493 -494: the sentence was rephrased as below.

Medical Equipment Management & Biomedical Engineering Standards may require more specialized, technical, financial and other resource support since the validation scores were lowest.

On half of all authors

Best regards,

Mesele D Argaw