Author's response to reviews

Title: Measuring inequalities in the distribution of health workers: the case of Tanzania

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Author's response to reviews: see over
To the Editor

Human Resources for Health (BioMedCentral) 06/05/08

Re: Resubmission of the revised manuscript titled: “Measuring inequalities in the
distribution of health workers: the case of Tanzania”

Dear Editor

This is to re-submit a revised version of our paper (Manuscript ID: 1519333284182636) with the underlined title above.

We feel really honoured and therefore appreciate your interest in considering our paper for publication in your esteemed journal. We also are grateful to the two reviewers for their critical and very constructive comments. Below is our detailed response to the reviewers' comments on a point by point basis, as suggested.

Response to reviewers’ comments

Reviewer 1 (Dr Neeru Gupta)

Response to major comments:

Comment: Details are needed on the nature, coverage and quality of the data collection tools used.

Response: Our data source is the same as was used for the Global Atlas of the Health Workforce. It is based on a census, covering all sectors (public/private) of mainland Tanzania. It is the most comprehensive and reliable source available. Details about the HRH data source have been included in Section 4.

Question: Would it be possible to tease HRH data from the national housing and population census data?

Response: Unfortunately, no. The population and housing census does not contain information at a sufficient level of detail to serve as a basis for estimation of the health workforce. Furthermore, the HMIS system has so far not proven to be a reliable source of HRH data. Neither has the payroll proved to be useful for analysing distributional patterns of the health workforce, both due to its limited scope (does not include (most of) the non-government sectors) and due to a low level of detail of information about each worker (place of work etc.). Nor is the payroll useful in validating the aggregate number of health workers in the government sector due to the problem of ghost workers and the fact that some workers in the private not-for-profit facilities are paid for by the government (secondment).
Comment: Summary statistics of the HRH data are needed.

Response: Summary statistics of the number / distribution of health workers across sectors and cadres are provided in Table 1 (Section 5).

Response to minor comments:

- We have replaced the “retiring” population with “ageing” population, as suggested.
- The statement that indicators sensitive to the elderly population are less suitable in low income settings because they receive “only a low share of public health budgets” has been revised. Our original formulation was unfortunate, as it may have seemed that we did not acknowledge the importance of health care needs of the elderly population. Our point is that governments in low income settings in practice have put less emphasis on providing health care for the needs of the elderly, due to resource constraints. This political choice has implications for human resource planning. Hence, when measuring distributional inequalities of the health workforce, it seems appropriate to focus on a measure of need which captures those health care dimensions on which the government actually has put a high priority. The text has been rewritten (both in Section 1 and Section 3) in order to acknowledge these nuances.
- More precise figures of the number of health workers have been provided in the summary statistics in Table 1.
- On the relationship between health worker density and HIV prevalence, we have now referred to the recent publication in the HRH journal by Madigan et al. Their analysis did not change our position, though. In our view, they have only shown that there is a correlation between HIV prevalence and HRH density, which hardly comes at a surprise. In order to argue that there is a causal relationship between HRH density and HIV prevalence, they would have to conduct a much richer regression analysis, taking into account a much broader set of possible confounding variables. We have stated our remarks on their study in footnote 1.

The revised manuscript has been through a professional language vetting procedure.
Reviewer 2 (Prof Monique Van Dormael)

Response to major comments:

1. We agree that the paper should emphasise the methodological innovations and that the paper is a first attempt to refine measures of inequity by starting with two indicators. The innovative aspects of the paper are related to: 1) the use of concentration curves in combination with Lorenz curves in order to describe the implications of using alternative measures of health care needs, and 2) to analyse skill mix inequalities using concentration curves. In the revised version, these innovations are mentioned/described both in the introduction, in the methodological section, in the discussion, as well as in the concluding section. We have also emphasised from the start (Section 1) (and not only in the discussion) that more comprehensive indicators than the two presented in the paper are needed for practical purposes.

2. The reviewer states that implementation in a given country makes sense only if effective policy measures are likely to be taken to reduce unequal distribution. We agree to this comment. Nevertheless, we are a bit unsure whether we have interpreted the comment correctly. Our study/methodology intends to shed light on the magnitude and the characteristics of the distributional inequalities, which naturally comes before implementation of policies. As shown by our results when using HIV prevalence as an indicator of health care need, there is a possibility that needs are highest in those areas where health worker densities also are high. In that case, it would not make sense to “start” by reallocating workers based on the “per capita”-approach, and then refine measurement of need in the next step (which would lead to a reversal of the initial reallocations). On the other hand, if areas with low health worker density have the highest disease burden (cf. our analysis using under-five deaths), it clearly makes sense to start with allocating health workers according to population levels, and then continue with more refined measures of need in the next step. However, the only way to know which of these cases that represent the actual situation is by conducting an analysis of the true health care needs before implementing policies. Only then can we be sure that policies are well targeted in addressing the underlying distributional inequalities. In the revised version, we have made these points explicit in the discussion of policy implications (Section 5).
If we have misunderstood this comment, please let us know.

3. The explanation of how and why the two indicators (under-five mortality and HIV prevalence) were selected is provided in Section 3.

4. The discussion of the reliability of the data and the likely biases has been moved forward to the data section (Section 4). Based on the comments from reviewer #1, we felt that this section needed to contain more on this. We hope that by lifting this discussion forward in the paper, we have also addressed the concerns raised by reviewer #2 (we could not put this discussion both in the data section and in the discussion section).
Response to minor comments:

1. The point that the need for health workers may vary with other factors than morbidity (e.g., population densities) has been acknowledged (Section 1).

2. Yes. We erroneously seemed to imply that a low budget implies low health care needs of the elderly. We have addressed this criticism in the revised version (see also response to reviewer #1). We also agree that in the future the demographic and epidemiological transition will bring growing needs in terms of chronic conditions and care for the elderly. It is also likely that this will change the resource allocation formulas (as well as the allocation of health workers). We think, however, it is justifiable in this paper to focus on the present policy environment, in which relatively little resources are used to care for the needs of the elder population in low income countries, compared to high income countries.

3. The classification of urban and rural districts follows the standard approach used in official statistics for Tanzania. This has been stated in Section 4.

Thank you very much.

Michael A Munga (Corresponding author)