Reviewer’s report

Title: The public sector nursing workforce in Kenya - a county level analysis

Version: 2 Date: 17 August 2013

Reviewer: Karen Plager

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This manuscript represents a project of huge undertaking and essential importance in order for Kenya to address their nursing workforce issues. Addressing these issues will help meet the critical task of adequate health care delivery to meet the health care needs of the population. This work also could stand as a model for other countries, especially in sub-Saharan Africa, to make similar workforce analyses. As the authors note, adequate nursing workforce is necessary for safe and effective care yet many countries struggle not only to have an adequate nursing workforce, but an equitably distributed one. This work helps to begin the address this concern in Kenya.

Overall, this was a well conceived project, and is a well organized and clearly written manuscript.

Major Compulsory Revisions:

1. The figures are a clear and detailed representation of the data findings. Having the figure explanations paired with each figure, as opposed to being on separate pages, would help the reader to track through the data findings more easily.

2. It is unclear why the 3 additional files, which are also important figures representing data findings, aren’t part of the body of the manuscript. I would suggest placing them within the main manuscript as well for ease of reader tracking.

3. What stood out for me in this study and which the authors note on page 13 “is an alarmingly low proportion of public sector nurse aged below 30 years”. The authors speculate that “this could be due to the public sector hiring freeze that began in 1994.” Is the hiring freeze still in effect? Was the hiring freeze associated with decrease in recruitment and education for producing new nurses?

4. Conspicuously missing in the Discussion section is the any discussion of the nursing education system in Kenya. Nursing education is a critical stakeholder in the any discussion about nursing workforce, especially when such a small portion of nurses are under 30 and a larger portion are over 50 and nearing retirement age? What is being done to recruit and educate new nurses to keep a vital nurse workforce? Is out migration an issue in keeping younger nurses in the Kenyan workforce? Are a greater proportion of the young nurses working in the non-government sector? Addressing these issues would enhance the discussion,
including what can be done to address these critical workforce characteristics.

Minor Essential Revisions:

5. How was average worker density of 2.5 per 1,000 determined? This ratio includes nurses, midwives and doctors, but the authors compare the ratio of nurses, 1.2 to 0.08 per 1,000, to the standard of 2.5 per 1,000 as if the 2.5 refers to nurse density only. Also see first sentence in second paragraph of Results section.

6. In the background section (paragraph 1), “57 countries including Kenya with critical shortages” are noted. How many countries total are included in the 2006 WHO world health report?

7. Page 5, last sentence of middle paragraph, refers to “two Ministries serving the health sector in Kenya”. What are these 2 Ministries?

8. The authors are clear that their project analyzed nursing workforce in the public sector only and they provided their rationale noting that “over 50% of health workers deployed in the public sector” and that “45.3%” of that “over 50%” are nurses. “Over 50%” is a nebulous percentage as it could mean anything over 50.1, etc., leaving 49.9% of the health workforce in the non-public sector. That seems to be a significant sector of the workforce that could be providing health care to the population. The concern here is that a critical portion of the health workforce has been neglected in this study. Are there any plans in the future to do a similar analysis of nurses in this sector of the workforce? Also in the first sentence of the Discussion section, the authors state that “non-governmental and private sector is unlikely to make-up the large gap...” This seems to be an assumption made by the authors as no actual numbers of nurses in this sector are addressed.

9. Results section, first paragraph: for the non-Kenyan reader, it would be helpful to explain how Kenya Registered and Enrolled Community Health Nurses differ from the non-community health registered nurses in their preparation and roles in practice.

Discretionary Revisions:

10. The statistical methods seem appropriate, but it is not my area of expertise. There are a number of statistical methods the authors reported using—kurtosis, Shapiro-Wilk W and Shapiro-Francis W test—that I am not familiar with. For this reason only would I suggest that a statistician assess the statistics for appropriateness.

Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the
statistics.

Declaration of competing interests:

'I declare that I have no competing interests'