Reviewer's report

Title: Human Resources for Eye Health in Sub-Saharan Africa: Trends and Implications for Achieving VISION 2020 by Year 2020

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Reviewer: Serge Resnikoff

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Human Resources for Eye Health in Sub-Saharan Africa: Trends and Implications for Achieving VISION 2020 by Year 2020

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A. Major Compulsory Revisions
The author must respond to these before a decision on publication can be reached.

1. Title: the current title “Human Resources for Eye Health in Sub-Saharan Africa: Trends and Implications for Achieving VISION 2020 by Year 2020” suggests that the study analyses data from all sub-Saharan African countries, while in fact the paper presents data only from countries 16 countries, out of 48 – i.e. one third. It is therefore strongly recommended to amend the title to avoid any undue generalisation. Reference should be made to the sample rather than to sub-Saharan Africa (or the “region”) throughout the text, including in the abstract.

2. Page 6, Background, first paragraph.
“One population-based service delivery ratio is also suggested to measure the performance of eye health services, cataract surgery, used to prevent or treat cataract blindness.”

It should be noted that CSR is an output indicator used as a proxy indicator for the provision of eye care services. The use of CSR as a performance indicator is therefore questionable, as it does not measure the outcome of cataract surgery in terms of reduction of cataract blindness or ocular morbidity. It is recommended to replace performance by output (or any equivalent term) throughout the article.

“1. ‘Surgeons’: considered to be (i) ophthalmologists (physicians (MD or equivalent degree) who specialise in the eye and visual system)”

There is a major issue here because not all ophthalmologists are trained to do cataract surgery. In addition, among those trained, not all actually perform cataract surgery for various reasons. Authors should provide information on the proportion of trained surgeons. If this is not available, a sensitivity analysis should be performed to check the impact of small fractions of ophthalmologists trained in cataract surgery.
   “…surgical efficiency ratio, considering ophthalmologists and cataract surgeons…”
   Same comment as above. Only ophthalmologists actually trained in cataract surgery should be considered here.

   “…refractionists (optometrists and mid-level refractionists combined).”
   Please note than in Francophone countries, TSO/ISO are trained to provide refractive services. Has this been considered? If not, recommend mentioning it in the discussion.

   “…cataract surgeons are much more likely to be employed in the public sector”
   This is likely to be only true in countries where cataract surgeons are recognized as a professional cadre, which is not always the case.

7. Page 18 Discussion.
   “is a major advantage for countries wishing to improve their eye health system performance and equity.”
   This might be true for cataract, but for cataract only. What about the other eye conditions?
   The issue is that this article focuses on CSR as a proxy indicator of eye health needs. While it is indeed true that cataract is the main cause of blindness, there are still many other eye health needs that are requiring attention. In addition, epidemiological transition will require skilled practitioners to address emerging needs. In that respect, training more ophthalmologists able to do eye surgery, including glaucoma surgery and to manage retinal conditions, such as diabetic retinopathy is critical in medium and long term. This issue should be raised in the discussion.

   Another issue is the absence of consideration given to the quality of care. Doing just more surgeries is not necessarily the answer, especially given the poor results observed in a number of recent population-based surveys. This should be addressed in the discussion.

B. Minor Essential Revisions
The author can be trusted to make these.

   This abstract in French requires significant editing, especially regarding HR terminology.
   The following wording is offered.

Méthodes: Les données concernant le nombre d’opérations de la cataracte ainsi que les effectifs en ressources humaines ont été collectés auprès des coordonnateurs des programmes nationaux pour 6 cadres de santé (ophtalmologistes, opérateurs de la cataracte, techniciens supérieurs en ophtalmologie (TSO), infirmiers spécialisés en ophtalmologie (ISO), optométristes et réfractionnistes). Ces données ont été combinées avec les données démographiques. Les données sur les entrées et les sorties des effectifs pour la période 2008-2011 ont été utilisées pour projeter le taux de densité de la main d’œuvre ainsi que le taux d’opérations de la cataracte entre 2011 et 2020. Les liens statistiques entre indicateurs de performance et présence d’opérateurs de la cataracte ont été analysés en utilisant le test de la somme des rangs de Wilcoxon et le coefficient de corrélation de Spearman.

Résultats: La densité des professionnels de santé oculaire par million d’habitants va augmenter légèrement pour les chirurgiens (ophtalmologistes/opérateurs de la cataracte, de 3,1 en 2011 à 3,4 en 2020) et les TSO/ISO (5,8 à 6,8) mais resteront bas pour les réfractionnistes - optométristes inclus - à 3,6. Parmi les pays qui ont déjà atteint les indicateurs cibles en 2011 la croissance actuelle sera insuffisante pour atteindre les cibles en termes de chirurgiens et réfractionnistes à l’horizon 2020. Un seul pays pourra atteindre la cible pour les chirurgiens en 2020. Pour les infirmiers, deux pays vont atteindre la cible en 2020 et un troisième sera juste en dessous. En 2011, les taux importants en chirurgiens étaient associés avec de taux élevés d’opérations de la cataracte, quel que soit le type de chirurgien employé. La population en opérateurs de chirurgie augmente proportionnellement plus rapidement que celle d’ophtalmologistes.

Conclusion: La force de travail en santé oculaire n’augmente pas assez vite pour atteindre les cibles de performance d’ici à 2020 dans la plupart des pays d’Afrique sub-saharienne. Les pays qui veulent augmenter rapidement leur taux de chirurgie pourraient investir dans la formation des opérateurs de la cataracte plutôt que dans celle des ophtalmologistes puisque cette population de professionnels peut s’accroître plus rapidement.

2. Discussion.

In the discussion section, the following three issues could be addressed:

• Not all trained professionals are actually delivering services because of possible lack of infrastructures, equipment or consumables. For example, not every prescription of glasses results in actual correction of refractive error because actual access to glasses may be very limited.

• The validity and accuracy of existing targets should be discussed. How have they been validated? What is the evidence that reaching them leads to the
desired impact?

• The surgical output depends on the working environment. For example, cataract surgeons or ophthalmologists working in a project supported by an NGO are likely to have a higher output than cataract surgeons or ophthalmologists working in an under resourced public hospital.


• Please provide links accessing the following sources: 1, 4, 10 and 15.
• Please use the final version of reference number 2, rather than the draft version.
• Please provide full reference for the following articles: 5 and 14

4. Page 26. Figure legends

« Figure 8. Refractionists V2020 projected performance »
This seems to be more about achieving V2020 targets rather than performance.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests