Reviewer’s report

Title: Mapping human resources for eye health in sub-Saharan Africa: current progress towards VISION 2020

Version: 3
Date: 4 May 2014

Reviewer: Susan Lewallen

Reviewer’s report:

General:
The strength of the current paper is that it provides good information, thoughtfully collected, on current numbers of eye health workers in SSA, an area from which good data are scarce. The paper would be stronger and more scientifically sound if the authors presented their data, showed the associations with national development indicators and pointed out the lack of evidence for HReH targets, rather than compare their findings to hypothetical non-evidence based targets. Arguments for this are presented in detail in points 5-6 below.

My comments on the revision will address the author’s responses to the major issues I raised in the first review. Please consider these all non-discretionary unless otherwise noted (1, 12 & 24)

1. The authors still reference both the GAP and the V2020 initiative but still have not clarified whether the former supercedes the latter or how they are related to each other; this is a question that has left a number of people in the field confused. Understandably, the authors may feel it is beyond the scope of this paper to discuss the question but then perhaps they should leave out mention of either. (discretionary)

2. NOTE: In the original comments I sent I accidently had two separate and unrelated comments under #2, for which I apologize. They should have been numbered 2 and 3. I’ll use 2 and 2a now to avoid further confusion.

2. The authors have provided more complete citations but there are still many problems with references. This is not just a pedantic matter since other researchers may want to follow up on some statements.

   • There is generally too much reference to websites and reports that are not peer reviewed. These might be acceptable for a policy document but I don’t think they are acceptable documentation for a scientific journal.

   • When websites are used the dates these were accessed should be included. When I tried to follow the websites listed I got “page not available” messages.

   • Authors need to check every reference they’ve used to see if it provides primary evidence or data to support the statement. For example, Ref 10 is a good description of training a cataract surgeon but it is not appropriate to support the statement it accompanies. Fewer, more carefully selected references are needed.
• Refs 20 and 21 (and perhaps others) still appear in the list although they no longer are in the text.

2a (explain origin of CSR target estimates for Africa)

I appreciate the authors’ efforts to clarify the CSR target issue (which I requested) but I’m afraid the discussion about CSR is now longer and has become even less clear (to me at least)

The authors state: “On the other hand, it can be argued that CSR targets do not need to be strictly based on incidence, since the most visually impaired people are normally the hardest for eye services to find, evidenced by the fact that the majority of cataract operations are on non-blind patients, even in the poorest countries [19].” Why is this sentence started with “On the other hand…”? Are the authors suggesting that something besides incidence would determine the target CSR? If so, what? Perhaps related to this, I cannot tell what part of the complex sentence the reference 19 is supporting, but in any event I don’t think it supports the concept that incidence of cataract (at whatever VA level chosen) is not a critical factor in CSR targets. The ideal number of procedures needed for any surgically cured condition (e.g., hernia repair) will be dependent to a large extent on the incidence of the condition.

On reconsidering this issue and the authors’ response, I suggest that, rather than get involved in a lengthy technical discussion of how CSR targets have been or could be set, the authors might consider simplifying the entire subject, addressing both my points 2a and 3 and shortening the paper by explaining that the original CSR targets were rough estimates based on several assumptions including a uniform prevalence of cataract blindness in SSA and an assumption that mostly blind eyes would be operated. Evidence accumulated since has shown neither of these to be true. (refs, including 19 and 17) Nonetheless, for planning purposes a target of 2000 is often used.

4. Thank you for including the reference on CSR targets in Africa. This reference also presents the evidence from numerous RAAB surveys that shows cataract (lens opacity, operated or unoperated) prevalence to vary 2-3 fold across the continent, which has not been acknowledged or taken into account. (The need to do this would be eliminated if the authors simply take the shortcut suggested in point 3 above) The two Latin America references are not mentioned anymore in the text but are still in the list of references .

5 & 6. These 2 comments are both related to how one goes from a target CSR to a recommendation of 4 surgeons per million

The authors acknowledged that the evidence base for the HReH targets is weak, but I think it is much weaker than they suggest and they need to make this point much more strongly in the paper or else refrain from comparing their data to these targets. Please consider the following: They now describe the assumptions underlying the target of 4 surgeons per million thus: one surgeon supported by a team of 3-5 mid level personnel would operate one day per week and do 2-3 surgeries per hour (around 10-15/day). They have not questioned whether one operating day per week is a reasonable assumption - and many would argue that
it is not. It is more reasonable to suggest that a surgeon would operate 2 days per week and do twice as much surgery. Under this assumption the HReH target for surgeons would be cut in half and the logical conclusion from this paper would be that SSA has exceeded the target for surgeons, rather than reaching ¾ of the target. In fact, variation in surgeon productivity is documented and it varies up to tenfold. This is an example of how weak the evidence is for HReH target numbers required; yet the authors compare their data to the targets in detail, calculating how many more surgeons might be needed and stating that we are ¾ of the way to achieving the goal. The fact that they admit there are many variations at the country level or urban/rural unevenness does not address the fact that the basis for the targets is so weak in the first place. The paper would be more scientific if they simply presented their data on existing HReH numbers of personnel (which has been collected carefully) and resisted using questionable hypothetically derived HReH targets as a benchmark for comparison. (The subject of what might constitute reasonable evidence based targets requires extensive study, well beyond the scope of this paper)

Regarding the targets for refraction personnel in SSA the authors now describe a target based on evidence from India, where the epidemiology of refractive error is known to differ from that in SSA (and even in SSA it is likely not uniform). Again, why not simplify by using one paragraph to admit that the evidence is weak and state that depending on the assumptions made, the number of teams required may vary 4-5 fold or even more.

This would obviate the need for discussion in the paper about how close SSA is to reaching its HReH targets and get the authors out of the awkward place when they say that SSA is ¾ of the way towards reaching the targets, but surely not ¾ of the way towards reaching the goals of either VISION2020 or the GAP.

7. I’d hoped for a reference to the statement that 10 mid level worker per million were required. The reference supplied is #9, a report from IAPB. I could not find it on line at the website given so cannot judge what evidence was used to set this target. The target doesn’t seem to fit the statement that 3-5 mid level workers per surgeon are required; 12-20 midlevel workers would be required for 4 surgeons/million. This is more evidence of the lack of real data behind these HReH targets.

8. see response to 5&6 above.

9. Thank you

10. The authors have clarified that they did not include this group of general nurses or clinical officers without formal qualifications. Could they provide some idea, even anecdotal, of what proportion this represents?

11. ok

12. I believe that the authors should use the WHO classifications of countries. Sudan is very different from South Sudan. (discretionary)

13 Thank you.

14. Encouraging individual countries to collect data over time is fine. However, I think that this problem of potentially vacillating CSR deserves to be noted as a
limitation.

15. Thank you

16. Thank you

17. Authors have corrected the error and state now that they classified non-ophthalmologist physicians in DRC and Madagascar with the non physician cataract surgeons employed in other countries because “cataract surgeon” is the local term used in DRC and Madagascar. That may be true but I believe it is incorrect in an international classification. Having worked with these cadres, I believe the important distinction is “physician.” Neither DRC nor Madagascar allow non physicians to operate whereas the “cataract surgeons” in the rest of SSA are NON physicians. Training, skills, and basic education of the physician “cataract surgeons” of DRC and Madagascar is far more like the ophthalmologists in the rest of SSA than like the “cataract surgeons” of the rest of SSA. This has implications both for the resources (financial and time) required for their training and for their stature in the countries, ability to be recognized as the head of a team of other health workers, and their ability to advocate on a professional level at their hospitals. (Another example where “local” terminology for health workers is not compatible with that used internationally is the term “clinical officer” as used in Tanzania.)

18. I cannot judge whether this has been addressed since I have no access to the second paper. The authors should avoid making statements in this paper that require a future, but yet unaccepted paper to justify.

19. Thank you. (I agree!)

20. OK

21. This goes back to my arguments in 5-6 above regarding the dangers and fallacy of comparing good data to questionable targets.

22. Problem is the targets again. I had suggesting “referencing” these in the hope it would point out the weakness of the evidence. Would prefer to see the column on targets eliminated.

23.OK

24. Still think it’s worth checking, although there may be no correlation. (discretionary change)

25. OK

Level of interest: An article of importance in its field

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