Reviewer's report

Title: Sixty years trying to define the malaria burden in Africa: have we made any progress?

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Reviewer: James Beeson

Reviewer's report:

This is an interesting commentary on an important topic by authors with extensive experience in this field. It is widely recognised that there is a continuing need for accurate estimates of the malaria burden globally and in Africa, and that these estimates are needed to set targets and goals and properly evaluate progress, and inform malaria control measures. The authors make some important points arguing that parasite prevalence measures will enable better regional and global estimates of malaria, and present a strong case that the current approach to estimating the malaria burden should be modified to include a greater use of parasitemia data.

Minor Essential Revisions

The manuscript is clear and interesting to read and I only have minor comments:

1. I tend to agree with the authors that the use of parasitemia data will allow better and more precise burden estimates, and that the reliance on numbers of malaria cases (which are difficult to determine accurately) is problematic. However, I think it would be valuable to add some comments on the clinical and public health value of having estimates of morbidity and mortality due to malaria, and why these data are valuable. Perhaps future malaria burden estimates should be presented in two ways, based on parasitemia and based on case reports of morbidity and mortality? Is that what the authors are suggesting, or are they proposing shifting to parasitemia-based estimates only?

2. Given that BMC Medicine has a broad audience and many readers may not have a strong background in malaria, I think it would be helpful to have some key points early in the piece. E.g. clarify that P falciparum is by far the major cause of malaria in Africa (with very little due to other species), even better if they can provide some specific-specific breakdown of burden (based on parasitemia rates). It might also be helpful to clarify that by the term ‘malaria’ they mean clinical illness with fever (this is often a point of confusion, and clarity around this point is essential to their subsequent arguments).

3. Page 2, sentence ‘how immunity confounded any reliable estimations…..’ Some clarification or details about what is meant here would be helpful.

4. P4, 1st para. I think it is debatable whether malaria immunity does develop quickly – what is meant by ‘quickly’? The term is a bit vague.
5. I think it would be worth noting that the clinical and public health significance of very low parasitemias is somewhat unclear with many reports of asymptomatic low grade parasitemias (not exclusively in immune individuals) and lack of clarity about the transmission potential of people with low grade parasitemias, something that we need more research on. So, measuring parasitemia rates and using those to estimate burden does have some limitations.

Discretionary Revisions

6. I think it could be very useful to have a box or table that summarizes the measures or data that are currently used in global malaria estimates, and a summary of the authors’ proposed revised approach

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