Reviewer’s report

Title: State of inequality in malaria intervention coverage in Sub-Saharan African countries

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Reviewer: Yazoumè Yé

Reviewer’s report:

This manuscript assesses change in equity of malaria intervention coverages and morbidity across malaria endemic countries in Sub Sahara Africa.

This paper addresses an important public health challenge which is the equitable access of health interventions, particularly in the context of universal coverage. I read with interest this paper which looks like a follow up to a manuscript we recently published in the Bulletin of the World Health Organization (Taylor et al. 2017). The paper is well written and nicely structured, I particularly like the discussion. Congratulations to the authors for that. However, I have a few points that the authors should consider addressing.

1. In the analysis the authors used IRS indicator which they should consider dropping. IRS is a very restricted intervention targeted to specific selected locations in most countries. The coverage as measured by DHS data remained very low because measured at the national level. Program data would have been most appropriate to look at population protected, but in this case you will not have the information on the wealth quintiles.

2. The indicator for treatment should also be revised to focus on treatment with recommended antimalarial medicine. Using any antimalarial medicine could affect the trends, because as ACT (recommended anti malaria drug) became more available in the recent years, the availability and use of other antimalarial medicines reduced. However, ACT used remains low in most countries, so using any antimalarial in your analysis will show a decline in use which is mostly a reflection of an increase use of effective antimalarial medicines in the recent years.

3. For IPTp the authors used the current policy of 3 + doses without explaining how this could affect the trends. If the authors keep this indicator, then will be informative to provide more information how they took into consideration the changes in policy in their analysis.

4. It is fine to look at the equity for all malaria interventions indicators; however, we know that low coverage will definitely skew the distribution. Could the author consider a minimal level of coverage which will be reasonable for equity analysis? Treatment and IPTp coverage remained very low in most of the countries.

5. I have also included a few minor points in the manuscript as sticky notes.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.
Yes

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Unable to assess

**Are the conclusions drawn adequately supported by the data shown?**
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Yes

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I am able to assess the statistics

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