Reviewer's report

Title: Rural-urban differentials in pregnancy-related mortality in Zambia: estimates using data collected in a census

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Reviewer: Laura Dwyer-Lindgren

Reviewer's report:

The author’s seek to describe how pregnancy-related mortality in Zambia differs between urban and rural areas. The manuscript is well organized and the methods are clearly described and appropriate. The stated conclusions are justified by the reported results. My comments are mostly minor points of clarification.

Major Compulsory Revisions

1. The author’s note that both the SEG and GGB death distribution methods assume that populations are closed to migration. For this analysis, these methods are applied separately for urban and rural populations; this means that in addition to assuming no international migration, within-country migration between rural and urban areas is also potentially problematic (changes in how urban and rural are defined between census rounds could cause similar problems). Do the authors have reason to believe that this is not an issue for Zambia over this period? If not, this probably deserves mention as a limitation.

Minor Essential Revisions

1. The third paragraph of the results section reports that the share of pregnancy-related deaths declines after age 25. Based on table 4, this should read declines after age group 25-29 (or, equivalent, after age 30).

2. In the last paragraph, the authors cite the 2008 census in Mozambique, but the last census in Mozambique was conducted in 2007.

3. Figure 2 deserves some comment – the trend over the different age groups is distinctly non-linear which suggests that certain assumptions of the GGB method are being violated.

Discretionary Revisions

1. The choice of measures of adult female mortality (reported in table 3) is somewhat odd. 45q15 is an obvious choice, but e80+ is not related to reproductive-age mortality at all and so I am not sure why it is included. Further, 30d10/20d40 is not an easily interpreted quantity – it may make more sense to consider 30q10/20q40.

2. Why are alternate DDM results using a different age trim reported in table 2?
These are not discussed elsewhere in the manuscript.

3. For context, it may be useful to report what proportion of reproductive aged women live in urban vs rural Zambia.

**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