Reviewer’s report

Title: Performance of verbal autopsy, physician coding and classification systems in the Indian Million Death Study

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Reviewer: Peter Byass

Reviewer’s report:

This is an important and well-written paper relating developments in physician-based VA CoD determination in the long-standing Indian Million Deaths Study. It details the procedures related to this study, which aims to cover a representative sample of about 0.5% of the Indian population.

At the time when the MDS started, the state of the art in terms of VA was at a very different position compared with today. Consequently the fairly elaborate procedure, as described in the paper, to have large numbers of physicians assessing largely narrative-based VA interview material, was probably the only viable option at the time, apart from doing nothing. It would be helpful to the reader to make this point clear.

In addition, the considerable effort involved here in covering just 0.5% of the population raises questions about scalability, in terms of moving towards full civil registration of deaths with cause, integrating VA strategies, which also needs some additional discussion.

If one were starting such a venture now, there would be a more complex array of possible strategies. The major question would be whether to use a physician-based approach as MDS continues to do, or to consider completely automated approaches which are now coming into much wider use. This is not an argument for now changing the MDS strategy mid-stream, which would almost certainly be a bad idea; but as time passes, the MDS approach will appear to be an increasingly “legacy” solution to the very real problem of documenting cause of death in India.

Thus the authors here face something of a dilemma; they usefully document the methodology behind a huge on-going VA survey, with relatively positive results; but, at least in my view, the conclusion should not be that their approach represents an optimal future strategy to fill the global gaps in cause of death data. I would therefore like to see a more nuanced discussion along these lines, to accompany the very interesting detailed documentation given here.

Page 7 – important to make clear that the WHO 2012 VA cause categories are simply groupings of ICD-10 codes, not a separate classification system like GBD (which in particular treats poorly defined codes in a totally different way). However, in the related table at the start of the supplementary material, I do not recognise the WHO 2012 codes as being those specified in the WHO 2012
documentation. All those WHO VA cause codes have a format of e.g. 01.04 (Diarrhoeal Diseases). This needs clarifying in the supplementary material. It may be helpful to refer to the newly published paper by Leitao et al. (Global Health Action 6:21518) for this.

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I have no related financial interests.

I do have some scientific contact with the author group (which is not surprising given the relatively small number of scientific groups working on verbal autopsy methods). However, I have no connection whatsoever with the Indian MDS, nor with this manuscript.