Reviewer's report

Title: Identifying causes of adult death in rural populations

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Reviewer: Julian L Burton

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General
The authors present a study of 515 deaths in rural Ethiopia, in which they sought to determine the cause of death by means of a simplified form of ‘verbal autopsy’ (VA). They note that mortality and morbidity data in this population at present are scarce. They justify the use of a simplified VA questionnaire on the grounds of a lack of suitably educated data collectors.

It is my belief that this manuscript is not suitable for publication because it is scientifically unsound and because it represents little, if any, advance in knowledge regarding the use of verbal autopsies. The study has no control group, and no attempt has been made to confirm the validity of the data collected. Although the authors have not cited it, a large body of literature exists from both in the developing and developed worlds regarding the accuracy of death certification. In particular it is notable that when compared to a true (pathological) autopsy, the cause of death stated on death certificates by clinicians who had cared for the patient and who had had access to diagnostic imaging and laboratory investigations is inaccurate up to 30% of the time. To my knowledge no study exists comparing the accuracy of verbal autopsies against true (pathological) autopsies. However it seems likely that VA would have no greater accuracy than a clinician-certified cause of death and indeed it is likely that, even when sophisticated questionnaires are used, that the data obtained will be less accurate. The margin for error in this study will surely be even greater given the grossly simplified categories of disease used in the algorithms.

That the validity of the data from this study cannot be determined is a fatal flaw. There is no value in replacing valid ‘cause of death unknown’ data with data of unknown accuracy which gives a false sense of knowing the cause of death. This is particularly important if the data is to be used, as suggested by the authors, for the planning of public health provision. The authors conclude, without any supportive evidence, that their data is ‘fairly valid’ – a meaningless term. The statement on page 13, that “the information generated … is very useful in identifying problems that need urgent intervention in rural populations” is unfounded – the authors offer no evidence that their data is accurate. The authors’ statement, on page 11, that “Mortality is a very unique event that can be remembered for a long time…” is similarly unsupported by any evidence whatsoever.

In addition to being scientifically unsound – for the reasons outlined above – this manuscript offers no significant advance in knowledge. Larger studies (covering a larger population, longer duration, and many thousands of deaths) of the use of the verbal autopsy, with attempts at validating the data, have been undertaken and reported.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the
Discretionary Revisions (which the author can choose to ignore)

**What next?:** Reject because scientifically unsound

**Level of interest:** Too insignificant to warrant publication in any journal

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No

**Declaration of competing interests:**

I declare that I have no competing interests.