Reviewer’s report

Title: Verbal Autopsy completion rate and factors associated with undetermined cause of death in rural poor resource setting of Tanzania

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Reviewer: Elisabeth França

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The subject of this study is of great interest in the field of cause-of-death assessment in developing countries, because it is focused on the evaluation of the performance of the process of the verbal autopsy method in a Demographic Surveillance System (DSS), from the initial step of identifying deaths that occur in the community up to assigning the specific cause of death. But despite its relevance, I think this work has some deficiencies in the presentation, especially when reporting important results found in the study. Although the proposed structure of the study has been explicit from the beginning of the article sometimes I have identified a lack of clarity or completeness and also some discrepancies between the findings reported in different sections. I will try to point out my doubts and make suggestions considering the format of the article as follows.

Minor Essential Revisions

1. In the Abstract Results, the authors found a proportion of 29% of deaths assigned to undetermined causes among those submitted to physicians with a specific cause. I think this phrase needs to be reviewed, because in Figure 2 of the Results section the forms submitted to physician which ended with specific causes were 3849 and the number of undetermined causes was 1174. I guess that the proportion presented is related to VA forms submitted to physicians (n=4094), but this should be clarified.

2. Also in the Abstract Results, the description of factors associated with undetermined deaths is presented without specifying the population group. But if I have understood correctly the regression analysis was performed considering two separate models: for neonates/children and for adults. Another point is that age (of the respondent?), a significant variable for adults, was not presented among the results.

3. Please, consider being more specific in the Abstract Conclusion. I was a little confused about what “high completion rate in the initial stages” means, and also the suggestion for improving “coding and minimize the steps and logistics to come up with cause specific with less undetermined…”
4. The Background section was objective and concise and I especially enjoyed the second paragraph. In the first paragraph, however, for justifying the importance of the VA method it was stated that VA was “the only method to obtain estimates on the distribution of causes of death in Sub-Saharan Africa and Asia”. Is this what you are saying? These regions are large areas and maybe some countries have some kind of records of vital statistics, and perhaps have some estimates of cause-of-death using appropriate statistical methods applied to the primary processed data.

7. In the Methods section, I assume that the indicators to assess VA completion rates are related to Figure 2. However, I could not find the third and forth indicators in the Figure, so I could not understand the differences between “Number of deaths coded with specific cause assigned” (numerator-3rd indicator) and “Number of death coded with specific cause’s assigned” (numerator-4st indicator). Also, “Total number of deaths completed forms (death) submitted for coding” (denominator-3rd indicator) and “total number of forms (deaths) reviewed for coding” (denominator-4st indicator).

Also on this topic, I was curious to know about the procedures in the Ifakara Health DSS for collecting data, as to how many times a year household visits are made, etc. I also believe that the geographical description of the study area should be summarized. Finally, with regard to data analysis, the explanatory variables considered in the analysis should be presented.

8. In the Results section, the description of the socio-demographic characteristics of the respondent is related to the total of 4244 deaths identified with VA done between 2002 and 2007, not the 5027 eligible deaths, so this should be clarified. Only five of these characteristics were mentioned in the text (sex, age at death, the level of education of the respondent and relationship with the deceased, place of death) and also the language used. On the other hand, Table 1 presents 11 variables, and I was especially curious about the high proportion of undetermined (72.9%) and what this means in this table.

9. Concerning the completion rates of VA, please consider providing a description of what “coding completeness” means and this relation with Figures 1 and 2. Also, please check the proportion of 94% found in 2003, I believe it is 92%. The last paragraph on the steps of the VA process although informative still leaves me with some doubts. I was wondering if the authors could be more specific about the differences concerning data flows between “deaths lost at the stage between physician and VA interview” (4%) and (deaths lost) “in logistics of sending forms to physicians” (6%). Could it possibly be that the number “1117” is in fact 1174? And also I feel that the description of Figure 2 could be improved.

10. As mentioned above, the authors should clarify the variables used in the multivariate analysis of factors associated with undetermined causes. For example, what does “age at death” mean for neonates and children? At this point I found myself wondering whether “age of the respondent” was included because this variable was considered in the Methods section (last phrase before Data analysis).
11. In general in the Discussion and Conclusion sections I would like to see a more detailed discussion on how the findings of this study could contribute to improving the process of VA autopsy. For example, explaining why the authors recommend the introduction of technological innovation in data collection if the highest proportion of losses were due to VA forms submitted to physicians without a defined cause of death.

Discretionary Revisions

1. The article has no page numbers and the flow of specific comments and recommendations became difficult.

2. Abstract- Background: On the third line, when you say that “the subject related to VA processing and completion rate….are (is) limited” please consider being more explicit about the meaning of the word “subject”.

3. In Table 1 the totals can be omitted. Two variables have the same name, Relation of the Respondent with the diseased (deceased, I presume) and they should be presented as one variable or modified. Is the variable “Relation to the Head of Household” related to the deceased or to the respondent? And which period does the variable “Number of deaths per Household” cover?

4. I suggest reformatting all the tables and figures presented according to the Journal’s procedures.

Level of interest: An article of importance in its field

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

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.