Reviewer’s report

Title: The incomparability of cause of death statistics under "one country, two systems": Shanghai versus Hong Kong

Version: 0 Date: 25 Jun 2017

Reviewer: Chalapati Rao

Reviewer’s report:

General comments: The manuscript presents a comparative analysis of mortality statistics from two cities in China, using quantitative and qualitative methods. The methods and results appear scientifically valid, although they could be refined in both technique as well as presentation. The conclusions and recommendations are appropriate to the objectives and outcomes of the analyses. However, the manuscript requires several revisions as described below.

Major revisions

1. In the Materials and Methods section, the study settings need to be presented in a more concise manner. A flow chart should be prepared that captures the overall similarities between the death registration and statistics systems in the two cities, which should then be used as a basis to highlight the important differences. The authors could use as an example Figure 1 from the following article:


2. The flow chart should clearly highlight the four elements of the data compilation process that are being compared, as mentioned in the last two lines of paragraph 1 on pg 4. i.e data initiation / collection (? Compilation)/coding / audit; and flag key differences in the processes followed in the two cities, and these differences can be explained in the text.

3. The use of the word 'report' (and its variants - reported, reportable), registration, and certification are used interchangeably. For instance, Line 1 on page 6 uses 'report' to imply cause of death certification, but in the next paragraph, uses 'reportable' to imply referral for forensic review. The manuscript should be screened to ensure that there is clear definition of each term when first mentioned, and consistent usage thereafter.

4. Table 1 presents a comparative analysis of the systems and procedures in the two cities, but to enable better understanding, the items should be ordered in the same sequence as mentioned in Comment 2 above. For instance, 'Coding rule of COD' should be below 'who
certifies death ....'etc; and 'number of physicians could be clubbed with the characteristic labelled 'coverage'. The items 'clinical record review' and training could form the 'audit' component.

5. The term 'selection of place of death' needs clarification. In the case of Hong Kong, it is not clear as to how this 'selection' is operationalised. Is it that relatives of dying patients prefer to let the event occur in hospitals, in order to avoid the process for 'reportable' deaths? Or, is it that even in the event of death at home, relatives of the deceased prefer to contact their family medical practitioners for the Form 18, to avoid the process for 'reportable' deaths'? This should be explained for readers to understand the term 'selection of place of death'.

6. Further, in Table 3, for the data for Hong Kong, it should be clarified that all cases of deaths outside hospitals are represented by the statistics for 'At other locations'. If this is the case, then the differences in proportions of deaths with UCD certified as septicaemia, pneumonia, and renal failure are not a function of 'selection of place of death'; since the bulk of these cases occur in the hospitals of Hong Kong. However, if the medically certified deaths outside hospital are included in the 'At hospital' statistics in Table 3, this argument may be valid. In which case, it would be best to separate the 'at hospital' statistics into those actually certified for deaths that occur in hospitals; and the data on UCDs for deaths medically certified outside hospitals; and then repeat the analyses.

7. Based on the responses to comments 5 and 6, the authors should revise their discussion of the aspect of 'selection of place of death'; and clarify the implication of this on the quality of statistics. If it is evident that the differences in cause attribution to septicaemia, pneumonia and renal failure are not due to place of death, but due to knowledge, attitudes and perceptions of certifying doctors (in Hong Kong); this should be stated clearly.

8. The statistical analyses presented in Table 2 should be reviewed by a statistician. It presented as simple proportions of deaths, rather than percentages of overall age-standardised death rates. The age distribution of populations of Shanghai and Hong Kong are likely to be very similar, hence there is probably no need for age standardisation. Further, the differences in proportions could be analysed using a simple significance test, rather than use of logistic regression. Any case, I would defer to a statistician's view on this matter.

9. The manuscript should emphasise on how formal verbal autopsy procedures would add value to the cause of death ascertainment process for deaths outside hospitals in Shanghai.

10. The article should also recommend a detailed validation study in Hong Kong similar to the one described in the reference mentioned in Comment 1 above, to understand the
implications of the various cause of death certification practices as evidenced from the qualitative research.

11.

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Not suitable for publication unless extensively edited

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